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IMPLEMENTATION ANALYSIS DISASTER PREPARED SCHOOL IN ELEMENTARY SCHOOL

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ABSTRACT

The analysis of the implementation of the disaster preparedness school aims to determine the implementation of the standby school and to find out the factors that encourage the realization of the disaster preparedness school at SDN 1 Pagerandong. Data collection with interviews, observations and documentation in order to collect data on the implementation of disaster preparedness schools and the factors that encourage the realization of disaster prepared schools. Data reduction, data presentation, drawing conclusions are the analysis in this study and supported by a regional approach to determine the condition of the research area. The results showed that the implementation of disaster preparedness schools was carried out through the integration of disaster knowledge in the school curriculum, socialization and collaboration with the community and the Regional Disaster Management Agency. The school building was built right above the ravine, where the position of the ravine was right next to the school building wall. Supported by the condition of the area with hilly morphology, so it is easy to experience soil movement and landslides occur. This condition is a factor in the realization of a disaster preparedness school at Pagerandong State 1 Elementary School.

Keywords: *Analysis; Implementation Disaster Prepared School; Elementary School.*

A. INTRODUCTION

(Government regulation Number 47, 1997) explains that an area is a space which is a geographical unit and all elements related to it, whose boundaries and systems are determined based on administrative and/or functional aspects. So between one area and another there are differences, both physical and non-physical as well as various phenomena that occur in it, especially natural phenomena such as natural disasters. Natural disasters are natural events that have a major impact on the human population. In (Republic of Indonesia Law Number 24, 2007) concerning Disaster Management it is explained that a disaster is an event or series of events that threatens and disrupts people's lives and livelihoods caused, both by natural factors and/or non-natural factors as well as human factors that result in human casualties, environmental damage, property loss, and psychological impact. The same thing was conveyed by the (Asian Disaster Reduction, 2003) which stated that a disaster is a serious disturbance to society that causes widespread and felt losses to the

community, various materials and the (natural) environment whose impact exceeds human ability to cope with existing natural resources. One of the disasters that often occur in Indonesia is landslides. (Sutikno & Al, 2001) argue that landslide is the displacement of soil or rock mass obliquely from its original position due to gravity. Meanwhile, (Sitorus, 2006) said that landslides can be interpreted as a form of erosion where the transport or displacement of soil occurs in a relatively short time in a very large volume (amount). So it can be concluded that landslides or landslides are part of the activity of the soil that falls down the slope, which can be in the form of soil, rock and other materials due to the force of gravity and the reduced carrying capacity of the soil.

Pagerandong State 1 Elementary School is a school located in Pagerandong Village, Kaligondang District, Purbalingga Regency. Pagerandong village is a village that has experienced landslides. In 2010 Pagerandong Village experienced a landslide which resulted in a lot of dredging of existing facilities, including the damage suffered by the State Elementary School 1 Pagerandong. The disaster caused damage to the Pagerandong State 1 Elementary School building. There are at least 3 classroom buildings that were badly damaged. Then other buildings cracked due to the landslide. Pagerandong Village is a village located in the hills which is prone to landslides as well as Pagerandong State 1 Elementary School is located at the bottom of the hill. Therefore, disaster knowledge absolutely must be understood by the school. Also delivered by (Bernardi, 2018) based on the results of his research on landslide disaster preparedness education given to low-grade students at Dewi Sartika early childhood education using the storytelling method with the help of the Pop Up Story Book media. The results show that the storytelling method with the help of Pop up book media is effective for use in landslide disaster preparedness education. This can be seen from the increase in the number of students who exceed the minimum completeness criteria before being given treatment and after being given treatment.

Natural disasters can happen anytime and anywhere, it can happen to anyone. So that disaster preparedness education should ideally be given to all levels of society, not covering early childhood education programs. However, in this case disaster knowledge is given to elementary school students and school residents as well as the community around the school. Because school-age children are very vulnerable to natural

disasters, this can be anticipated with disaster education so that they are better prepared in dealing with disasters (Boon & Pagliano, 2015). (Seddighi et al., 2021) in his research convey one way to reduce children's vulnerability is to learn about natural hazards and reduce the risk of disasters in schools. It helps children to build their skills to contribute to the disaster risk management as well as develop the attitudes and dispositions toward working collectively when their families and communities are threatened or affected by a disaster. Children's preparedness is crucial for disaster risk reduction (DRR) and, in achieving the latter, the education sector plays a key role. Based on the statement that disaster education is very important to be implemented in schools, in order to increase disaster preparedness capacity in order to build disaster preparedness, namely through education and disaster literacy (Prakoso et al., 2021).

Meanwhile, the geosphere is the object of geographical study as described (Sumaatmadja, 1997) explained that the geosphere is an object of geographical study which is part of the earth which includes the atmosphere, lithosphere, hydrosphere, biosphere. If territoriality becomes his point of view, then the geosphere shows similarities and differences that are not separated from the relations of the geographical elements that compose it. Based on geography learning materials taught in schools that study every layer of the earth's surface. Then the knowledge of disaster preparedness can be owned by students and school residents. Furthermore (Aydinoglu & Bilgin, 2015) said that geographic information technology supports disaster management activities for effective and collaborative disaster activities. This shows the important role of geography in disaster.

Disaster mitigation is a series of efforts to reduce disaster risk, both through physical development as well as awareness and capacity building in dealing with disaster threats (Government Regulation Number 21, 2008). Mitigation is an effort so that the threat or impact caused by a disaster is not too dangerous (Pratama, 2010). So schools located in disaster-prone areas absolutely must have knowledge of disaster mitigation. Either through a program specially developed by the school or through trainings organized by the school. As stated by (Winoto et al., 2020) there is influence of Dissemination of Disaster Preparedness through Simulation Methods on Improving Skills in Facing Disasters in Disaster Preparedness Students. Through disaster simulation training, knowledge and skills

related to the steps that must be taken when a disaster occurs can be increased and students can confidently carry out disaster preparedness efforts in accordance with the appropriate steps. Likewise, a study conducted by (Sujarwo et al., 2018) convey that Schools have a very strategic role in transferring disaster knowledge to the community. A person's preparedness will be better if the person has good knowledge of disasters, it will increase disaster preparedness to minimize the worst risks due to disasters. Improving disaster preparedness knowledge plays a very basic role. Thus, disaster education plays an important role in efforts to increase disaster knowledge.

The implementation of disaster mitigation is very important to be carried out at Pagerandong State 1 Elementary School, considering the condition of the Pagerandong area which has experienced landslide disasters and is a hilly area that is prone to landslides. Pagerandong State 1 Elementary School is a school that has a disaster program and is one of the pilot schools in Kaligondang District. Knowing the implementation of disaster preparedness schools and knowing the factors that encourage the realization of disaster prepared schools at Pagerandong State 1 Elementary School are the objectives of this study.

B. MATERIALS AND METHODS

This research is a qualitative descriptive research. The research was conducted at Pagerandong State 1 Elementary School Kaligondang District, Purbalingga Regency.

Collecting data by interview, observation, documentation (Miles & Huberman, 1992). Interviews were conducted with 1 principal, 7 teachers, students, and the surrounding community. Interviews were carried out simultaneously with observations by determining the time to be agreed so as not to interfere with school activities. Likewise, interviews with the surrounding community, in this case the village head, also agreed on a time for implementation. Interviews were conducted directly to find out the program and how the disaster preparedness school was implemented in the school. At the same time knowing the factors that encourage the realization of disaster prepared schools.

Observations to find out the condition of the school, in the observation observations were made of school buildings that were damaged/destroyed by landslides and the condition of the school environment that made the school vulnerable to disasters and what actions had been taken by the school in relation to these conditions. Meanwhile,

documentation by reviewing school documents related to disaster programs carried out by schools, namely the school curriculum and also reports on the results of disaster activities carried out by schools.

Data analysis with interactive analysis is data reduction, data presentation, conclusion drawing. Supported by a regional approach to determine the condition of the research area, in order to determine the natural factors that cause landslides. Data analysis activities are carried out continuously until complete. Then compiled and detailed to be more grounded and specific, by identifying, sorting out the data needed and discarding data that is not in accordance with the research objectives. This is to make it easier for researchers to collect data and understand everything that happens to the object of research. The data is presented in descriptive form. At first, the conclusions drawn are tentative, vague, doubtful, but with increasing data, the conclusions will be more grounded. So conclusions are always verified during the research.

C. RESULTS AND DISCUSSION

1. Implementation of Disaster Preparedness School

The implementation of the disaster preparedness school at Pagerandong State 1 Elementary School is carried out in various ways. The Principal said that:

> *"The implementation of disaster preparedness schools is carried out by integrating disaster knowledge in the school curriculum, socialization and collaboration with the community and regional disaster management agency."*

It is described in detail as follows:

a) Integration of Disaster Knowledge in School Curriculum

Disaster knowledge integration in the school curriculum is carried out considering the Pagerandong area is an area prone to landslides. So it is very important that disaster knowledge is given to the school, especially to students. Considering that most of the students of Pagerandong State 1 Elementary School are from Pagerandong Village or the local area. This disaster knowledge is expected to provide an understanding of disaster to students and students can recognize the conditions of their area. As stated (Honesti & Djali, 2012) students can be

educated with the character of disaster response and the character of treating nature properly and correctly.

Teacher statement:

> *"The disaster curriculum is implemented through the integration of disaster knowledge in learning. The lesson plans used in it contain sub-disasters which will later be integrated into students in classroom learning.*"

Materials on disaster are integrated into each subject that can be linked to material in class with related themes (School, 2019).

One of the lesson plans that integrates disaster knowledge is the thematic learning lesson plan for Class V Theme 1 Movement of Animals and Plants Sub Theme 3 Environment and its Benefits. Where in the lesson plan is inserted material about floods and landslides, this provides knowledge to students related to the occurrence of floods and landslides, efforts to overcome so that floods and landslides do not occur and what steps to take when floods and landslides occur (Prayitno, 2020).

Integrated thematic learning carried out in the delivery of material is integrated thematic, very relevant to include disaster material in it. This was also conveyed by (Almukarramah et al., 2019) Thematic learning uses themes to connect several subjects that provide meaningful experiences to students. Various information can be developed according to the context and needs of students. One of them is the development of integrated disaster concepts with appropriate learning themes.

b) Socialization

Socialization activities are carried out not only for the school, but also for the local community. The socialization was carried out in collaboration with various parties, including the Education Office and the Regional Disaster Management Agency, District government, sub-district and Kaligondang health center. Disaster knowledge is needed by the surrounding community, because they will feel the impact of landslides. Schools facilitate disaster socialization activities, whether carried out in

schools or elsewhere, targeting the school community or the surrounding community. The aim of providing an understanding of regional conditions and providing knowledge and understanding of disaster to the community. It is hoped that the community will be more concerned with the environment and can protect the environment as well as possible and a disaster response attitude can be formed in the community. The following is an illustration of the implementation of disaster knowledge socialization carried out by schools to the community, presented in Figure 1.

Figure 1. Disaster Socialization Activities

The figure shows the implementation of disaster socialization activities to the community around the school. According to statement (Pahleviannur, 2019) States that increasing knowledge to be aware of disaster preparedness can be done through socialization with the aim of educating, which is also in line with the activities carried out by National Board for Disaster Management. So, in this socialization activity, the school seeks to educate school residents and the surrounding community so that they have disaster knowledge and it is hoped that the disaster risk caused can be avoided, if at any time a landslide occurs in Pagerandong State 1 Elementary School and the surrounding area. This is also reinforced by the statement that disasters must be prevented. Efforts to prevent these hazards by helping communities to prepare, reduce risks and become more resilient (Federation, n.d.).

c) Cooperation with the Community and Regional Disaster Management Agency

The implementation of various programs on disaster at SD Negeri 1 Pagerandong cannot be separated from the intervention of various related parties.

Based on the explanation of the principal and teacher:

> *"School cooperates with community leaders, village officials, sub-districts, Regional Disaster Management Agency, Environmental Service, in the health sector in collaboration with the Kaligondang Public Health Center and the Village Health Polyclinic* (School, 2019)*."*

Attempts to provide explanations to school residents and the community that disaster knowledge is very important to be owned by the local community because the local area is an area prone to landslides. Relevant offices, namely the Regional Disaster Management Agency and schools facilitate the implementation of disaster program socialization by preparing resource persons, facilities and infrastructure for the implementation of socialization.

Many programs are carried out with the cooperation of the community and related agencies. Dissemination regarding disasters is carried out, among others, in the form of disaster mitigation training or in the form of mini classes which contain disaster materials needed to be given to the community as a form of disaster education to the community. Thus knowledge and understanding of disaster as well as recognizing regional/environmental conditions can be understood and can form a response or disaster preparedness attitude in the community. In their statement, (Muis & Al, 2018) stated that preparedness is the activities and steps taken beforehand to ensure an effective response to the impact of hazards, including by issuing timely and effective early warnings and by temporarily remove people and property from threatened locations. This is expected to be realized with the cooperation with the community and the Regional Disaster Management Agency (BPBD) carried out by the school.

2. The Factors That Encourage The Realization of Disaster Prepared Schools

a) Location, Area and Boundaries

Kaligondang District, Purbalingga Regency has an area of 50.5400 Hectare. Consists of 18 villages with the northern boundary bordering Karanganyar District, the southern part of the Purbalingga District, the East Kaligondang District and the west bordering the Bojongsari District. The average area height is 72.61 m asl, while Pagerandong Village has an altitude of 172.00 meters above sea level (Central Bureau of Statistics, 2020)

b) Regional Conditions and the Realization of Disaster Preparedness Schools

Pagerandong State 1 Elementary School is located in Pagerandong Village. The phenomenon of landslides that have ever occurred caused damage to the building of Pagerandong State 1 Elementary School. There are at least 3 class buildings that are damaged. Pagerandong State 1 Elementary School is built right on top of a slope or beside the school building is a fairly steep ravine, so it is very vulnerable to landslides. As seen in Figure 2.

Figure 2. The Existence of a School Located Beside the Abyss

In the picture above, it can be seen that the position of the school building is right next to a fairly steep ravine. It can be observed that after the school wall the back is only less than 3 meters away from the ravine. This would be very reasonable if there was a landslide or landslide, the school building would be damaged, considering the position of the school building which is not far from the ravine. Furthermore, in Figure 3 below is a building that was destroyed by a landslide.

Figure 3. Refurbished Classroom

Figure 3 is a former classroom building that was restored and used as a parking lot. The principal in his explanation conveyed this was done because at the time of the landslide, the classroom building was partially destroyed and some of it was badly damaged until the walls cracked and finally the school decided to tear down and turn the classroom building into a parking lot. Considering that it is very dangerous if it is maintained as a class if at any time there is a movement of the ground that causes another landslide.

(Ministry of Energy and Mineral Resources & Geological Agency, 2017) explained that the general condition of the Pagerandong area has a topography of foothills with an altitude between 100 - 200 m above sea level with slopes ranging from 10 - 20 ° and is adjacent to the Gintung River. Meanwhile, the condition of the rock is silty Napal rock with mollusk-rich sand insert (Kalibuk Formation), on top of which is sandy clay weathered soil and alluvium deposits. The Kalibuk Formation has a thickness of about 175 m. Land use in the form of gardens, fields and bamboo gardens at the top. While at the bottom are settlements and rice fields. The groundwater level in this area based on observations and measurements in resident wells ranges from 2 to 3 m, this shallow groundwater level because it is close to the Gintung River. (Ministry of Energy and Mineral Resources & Geological Agency, 2017).

The clay marl rock causes the Pagerandong Village area and its surroundings to easily experience soil movement in the form of termites. Clay marl rocks are prone to high swelling and shrinkage and have high plasticity when exposed, causing them to easily experience slow type soil movements. In addition, the triggering element for the occurrence of ground motion is rain with high intensity before and during the occurrence of ground motion. While the soil above the marl layer in the form of weathering soil is an impermeable layer, so both are contact in the form of a slip plane of soil movement. This is in line with what was conveyed by (Sholikah & Al, 2021) that the trigger factors are the factors that cause the movement of the landslide material itself such as rainfall, erosion, earthquakes, and human activities. So that high rainfall causes water to accumulate at the boundary of weathered soil with clay marl. The water then seeps into the weathering soil which is a nest, so that the soil becomes easily saturated with water. This situation causes the weight of the soil mass and soil saturation to increase. The thick weathering of the soil above the clay marl and the shallow depth of the groundwater table causes the weathered soil and claystone to move slowly. Due to the high weight of the soil mass, thick weathering and shallow groundwater levels and high rainfall resulting in weak slope resistance, which is then driven by gravity and the basic nature of clay marl, creepage type soil movements occur. Supported by a poor drainage system, so that it will trigger the easy occurrence of soil movement.

Pagerandong village and its surroundings are zones of medium to high ground movement potential, this means that in this area if there is a high intensity of rain it can cause ground movement, especially in areas bordering river valleys, escarpments, road cliffs or if the slopes are disturbed and old avalanches can be reactivated.

The location of Pagerandong State 1 Elementary School is actually not suitable for the existence of a school, because the condition of the area is very vulnerable to landslides that cause landslides. Because it is located right beside the slope/ravine.

The condition of school areas that are prone to landslides and schools have experienced it, but teaching and learning activities must still be carried out with various risks and possible disasters that occur. Knowing these conditions, the school thinks about the importance of knowledge about disasters for both the school and the surrounding community. So the school decided to educate especially for school residents and generally for the surrounding community with various programs carried out by the school.

Various risks that can occur in schools with school areas that are prone to landslides that cause the school to make Pagerandong State 1 Elementary School a disaster alert school, this is manifested in the integration of the disaster curriculum in schools and also in various disaster programs implemented school. The factors that caused Pagerandong State 1 Elementary School to be used as a disaster preparedness school were due to the condition of the area that has hilly morphology, geological conditions in the form of clay marl which is easy to experience soil movements that cause landslides. The area of Pagerandong Village and its surroundings is a potential zone for medium to high ground movement.

D. CONCLUSIONS

The implementation of the disaster preparedness school at Pagerandong State 1 Elementary School is carried out by integrating disaster knowledge into the school curriculum, socialization and collaboration with the community and the Regional Disaster Management Agency as well as other parties that can support the implementation of disaster preparedness schools. The factors for the realization of a disaster preparedness school at Pagerandong State 1 Elementary School are Pagerandong area is a zone of moderate to high ground movement potential, so if there is high rainfall it can cause landslides, especially in areas bordering river valleys, steep cliffs, road cliffs. This is the basis for the realization of disaster preparedness schools. The implementation of the research could not directly observe the landslide disaster mitigation simulation activities for students, due to the high level of the covid-19 pandemic, so that learning/simulation activities could not be carried out properly while waiting for conditions to improve. As a continuation, an assessment can be carried out on how

the continuity of the implementation of disaster preparedness schools and the development of disaster preparedness programs carried out in schools can be carried out.

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