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POLICY DIRECTION OF EARTHQUAKE DISASTER MANAGEMENT BASED ON COMMUNITY IN JORONG KOTO KUNYIT RIVER SANGIR DISTRICT BALAI JANGGO, SOLOK SELATAN DISTRICT

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ABSTRACT

This study aimed to formulate the policies of community-based earthquake disaster management in Jorong Koto Sungai Kunyit, Sangir Balai Janggo District, South Solok. The type of research conducted was a mixed method or research that combined qualitative and quantitative approaches. Data collection techniques used interviews and literature studies with subjects of the research were sub-district head secretary, community and customary elders. The data processed and analyzed using the Analytical Hierarchy Process (AHP) technique. The results of the study showed that in the response to the community-based disaster management in Jorong Koto Sungai Kunyit, Sangir Balai Janggo Subdistrict, South Solok, there were four criteria, eight policy alternatives and three priority policies that have been followed up. The criteria consisted of community behavior, education, local wisdom,: 1) buildings were accordance with the natural conditions of the South Solok and the buildings used must be earthquake resistant, 2) socialization about earthquake risk knowledge and management of earthquake response as well as counseling and training on rescue efforts and community awareness programs on earthquakes. 3). in terms of institutional and management actions, namely by preparing and providing equipment for earthquake hazard warnings and other community protection equipment at the *jorong/nagari*/sub-district level in the form of (tents, mats, etc.). 4). in terms of education about the earthquake, the local government was required to enter sub-material on earthquake disasters into the plan for implementing student learning and curriculum.

Keywords: Policy Direction, Earthquake, Community Based Disaster Management

INTRODUCTION

Indonesia's territory is geologically, geographically and astronomically vulnerable to natural disasters.. Geologically, Indonesia has always experienced natural

SENJOp
http://senjop.ppj.unp.ac.id/index.php/senjop
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disasters which tends to increase over time both type and frequencies (Oktorie, 2017). Natural disaster has created a main threat to human life and the world economy, government, and international organizations that have worked together to promote global and regional risk management, and to restore the ability to reduce disaster impacts (Guo, 2010; Hermon, 2011; Hermon, 2012; Hermon, 2015; Hermon, 2016; Hermon, 2017). One of the disasters that often occurs in Indonesia is earthquake.

In 2005, Indonesia was ranked 7th out of the number of countries that most affected by natural disasters (Hermon, 2014; Hermon, 2016; Kristian and Oktorie, 2018; Hermon, 2019; Hermon *et al*., 2019). This has been proven in recent years where many earthquake disasters occur in various regions in Indonesia. Experience shows that natural disasters have caused many losses and sufferings that are quite difficult for the community. Human casualties, the collapse of buildings, the destruction of facilities and infrastructure and countless other losses are the consequences (Afrida, 2018; Oktorie, 2018; Hermon *et al*., 2018).

The western region of Sumatra Island is one of the areas located on the outskirts of the world's active plate. This can be seen in the high incidence of earthquakes in this region because this region is the meeting area of the Indo-Australian tectonic plate with the Eurasian tectonic plate (Hermon, 2009; Hermon, 2010; Hermon, 2012; Hermon, 2014; Hermon, 2016). The source of the earthquake in this region is not only from the meeting of the tectonic plates but also because of the Mentawai Fault System and the Sumatra Fault System (Hermon, 2016; Hermon *et al*., 2017; Hermon *et al*., 2018). With the 3 (three) sources of the earthquake adding to the complex tectonics of the Sumatra region and causing the Sumatra region to be an area prone to earthquakes. The area of West Sumatra, especially the Regency of South Solok, is a region that is near to plate collision zones and has complex geological structures.

In RT RW of South Solok Regency 2012-2032, it is known that South Solok Regency is dominated by hills and mountains and there is an active volcano, namely Mount Kerinci which is a natural boundary with Kerinci District, Jambi Province, thus indicating the danger of volcanoes. In addition to the volcanoes, the potential for earthquake hazards is quite large considering that South Solok Regency is part of Sumatra Island which is generally located in active tectonic regions where the Indian

SENJOp
http://senjop.ppj.unp.ac.id/index.php/senjop
Science and Environmental Journals for Postgraduate
Vol. 1 No. 2 (pp. 10-18) June 2018
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Ocean plate moves northward in a striking manner towards the Eurasian Continent plate that moves to the South, with a movement reaching 7 cms / year. If there is a significant movement, it will cause a shift in the micro continent plate (micro plate) which is between the Collision Line (Trough) and the Semangko Fault Zone. The movement is a major emission / fault occurring in the South Solok region and can also cause land movement. The magnitude of the potential of the earthquake disaster in the South Solok Regency, make the regional government immediately take policies and actions to reduce the impact of disaster risks. One of them is knowing the right policy priorities in disaster management that can be addressed in a short time period, especially the earthquake is an event that can be prepared beforehand (Hermon, 2001; Tanaka *et al*., 2005; Hermon *et al*., 2018).

According to Law No.24 of 2007 concerning Disaster Management, disaster management is a dynamic, sustainable and integrated process to improve the quality of measures related to observation and analysis of disaster prevention, mitigation, preparedness, warning, and handling emergency, rehabilitation and reconstruction. All governments, local communities, and social organizations take steps for large earthquakes. The government will not be able to carry out disaster risk management optimally without actively involving the community. Community involvement in disaster risk management is absolutely necessary because the community is the subject and object of disaster risk management. Government efforts to optimize the role of the community can be started from the process of understanding, capacity develpoment, combining risk assessment, and technical support (Haifani, 2008). Optimizing the role of the community must certainly involve the whole community, both men and women. This means that individuals are also able to reduce the impact of an earthquake by learning what to do when an earthquake occurs and by taking various personal security measures (Lehman and Taylor, 1987; National Research Council, 1994; Tanaka and Hattori, 1997; Tanaka *et al*., 2005; Hermon *et al*., 2018). Therefore, it is necessary to conduct research related to the policies that need to be taken by stakeholders related to community-based earthquake disaster management in Jorong Koto Sungai Kunyit, Sangir Balai Janggo Subdistrict, South Solok Regency.

SENJOp
http://senjop.ppj.unp.ac.id/index.php/senjop
Science and Environmental Journals for Postgraduate
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METHOD

The type of research conducted was mix-method or research that combines qualitative and quantitative approaches. Data collection techniques used interviews and literature studies with the subjects of this study were the secretary of the sub-district, community, and traditional elders. The data collected were processed and analyzed using the Analytical Hierarchy Process (AHP) technique (Eriyatno and Sofyar, 2007).

RESULTS AND DISCUSSION

Communities are very important and must be involved in disaster management. This is because people directly face disasters, not the government or other institutions. Every person has the right to live in prosperity and be safe from disasters. The behavior of individuals in a community in relation to disasters is strongly influenced by their views on disasters themselves (perception of disasters). Myths or misperceptions related to natural disasters often have adverse impacts on disaster management. In order to avoid the adverse effects, a Law Number 24 of 2007 was drafted which regulates the rights and obligations of the community, as well as the responsibilities and authorities of the government in disaster management. The responsibility of the government in disaster management is: disaster risk reduction with development programs, protecting the community from the impact of disasters, fulfilling the rights of the community and refugees fairly, restoring conditions from disaster impacts, allocating budget for disaster management, maintaining authentic and credible archives / documents from threats and the impact of the disaster; while the authority of the government in disaster management is the determination of disaster management policies in line with national development policies, the making of development planning, the determination of national and regional disaster status and levels, determining the policy of cooperation with other parties, formulating policies, controlling the collection and distribution of money or goods. From the government's responsibilities and authorities, it is known that disaster-resilient communities include: (1) community capacity to reduce risk / stress / damage through mitigation or adaptation, (2) capacity to maintain basic functions and structures in disaster situations, and (3) the capacity to recover after a disaster. This includes resilience created by community capacity and character that support community

SENJOp
http://senjop.ppj.unp.ac.id/index.php/senjop
Science and Environmental Journals for Postgraduate
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resilience (Twigg, 2007). Communities make a major contribution to disaster management. Communities facing disaster risk will get benefit by understanding what must be done when a disaster occurs. (Yayasan IDEP, 2010).

The benefits of community-based disaster management include: (1) educating the community and developing existing knowledge so as to increase awareness of disasters and risks to be faced, (2) stimulate people to be better prepared for disasters in their area and help understand how and where possible disasters occur, (3) strengthening the community's ability to cope with disasters, (4) developing or forming disaster management community groups that can build and maintain community capacity in disaster management, and (5) increase public awareness about the natural environment and its role in reducing disaster risk (IDEP Foundation, 2010). These benefits can be obtained by the existence of a right, effective and appropriate policy for community needs in the handling of earthquake disasters in Jorong Koto Sungai Kunyit, Sangir Balai Janggo Subdistrict, South Solok Regency. From the results of interviews with the sub-district secretary, the community, and customary elders and literature studies conducted, four criteria were found to be the basis for taking policies, namely human resources, economic and cultural social, land use and structural design, and education. Of the four criteria, eight policy alternatives are produced as follows: (1) Increasing community knowledge and skills regarding earthquake disaster management (pre, medium and post-disaster); (2) Strengthening the ability of the community to cope with disasters by cooperating with relevant parties; (3) Establish an organizational structure and organization in which there are competent personnel, as well as understand their respective assignment functions; (4) Reviving local wisdom related to earthquake management; (5) Socialization and education regarding disaster preparedness savings designs; (6) Design buildings in accordance with SOP for earthquake-friendly buildings; (7) Community development policies, planning and programs are implemented and monitored through participatory methods; (8) The community is actively involved in the planning and implementation of natural resource management; (9) Making schools vulnerable to earthquake disasters as a Disaster Preparedness School; and (10) Important infrastructure is placed outside of high risk

SENJOp
http://senjop.ppj.unp.ac.id/index.php/senjop
Science and Environmental Journals for Postgraduate
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locations and construction patterns with construction that reduce the risk of disaster damage.

From the results of the analysis, five policy priorities were obtained based on the calculation of the Inconsistency ratio with a value of 0.095 (<0.1). That is, if the inconsistency ratio is <0.1, then the data analyzed is consistent. In the results of the study, it is known that the analysis carried out has an Inconsistency ratio value of 0.009. This means that the degree of importance in determining policy priorities is consistent, so there is no need to do repetition in data retrieval.

Based on figure 3 above, it can be obtained three policy priorities in community-based earthquake disaster management in Jorong Koto Sungai Kunyit, Sangir Balai Janggo Sub district, South Solok Regency, namely: (1) Important infrastructure is placed outside of high risk locations and construction patterns that reduce the risk of disaster damage; (2) Design and build according to the SOP; and (3) Increase community knowledge and skills, especially regarding earthquake disaster management. The priority of these policies can be implemented if accompanied by determining the implementation and implications of each policy. The implementation and implications of the policy are:

1. Important infrastructure is placed outside of high-risk locations and construction patterns with construction that reduce the risk of disaster damage
    a. Evaluate spatial arrangements
    b. Reordering spatial planning, especially important infrastructure, is placed in low risk locations
    c. Involve the community, universities and government in the development or spatial planning
2. Design according to the SOP
    a. Design earthquake resistant buildings, especially for settlements and public facilities.
    b. Enforcement of building standards
    c. Incentive and disincentive mechanisms for the promotion of disaster-resistant construction.
    d. Socialization to the community regarding earthquake resistant buildings.

SENJOp
http://senjop.ppj.unp.ac.id/index.php/senjop
Science and Environmental Journals for Postgraduate
Vol. 1 No. 2 (pp. 10-18) June 2018
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3. Improve community knowledge and skills, especially regarding earthquake relief
    a. .Providing workshops to the community regarding earthquake disasters and the potential for earthquake disasters that occur in Jorong Koto Sungai Kunyit Sangir Balai Janggo Subdistrict, South Solok Regency
    b. Disseminate to the public about the actions that need to be taken in the event of an earthquake and post earthquake.
    c. Providing counseling with the aim of stimulating people to be better prepared for disasters in their area and helping to understand how and where disasters might occur.
    d. Develop joint strategies and plans with the government regarding actions that need to be taken, especially during an earthquake
    e. Form an earthquake disaster alert group

CONCLUSION

Solok Selatan Regency was dominated by hills and mountains and inside it is an active volcano, so it has a great potential for an earthquake. The magnitude of the potential for the earthquake disaster, made local governments must immediately took policies and actions to reduce the impact of disaster risks. One of them was by knowing the right and effective policy priorities in disaster management that can be done in a short period of time. Direction and policy priorities that could be applied by the government in earthquake disaster management based on communities in Jorong Koto Sungai Kunyit, Sangir Balai Janggo Subdistrict, South Solok Regency, namely: (1) Important infrastructure was placed outside high risk locations and construction patterns that reduce the risk of disaster damage; (2) Design and build according to the SOP; and (3) Increase community knowledge and skills, especially regarding earthquake disaster management.

SENJOp
http://senjop.ppj.unp.ac.id/index.php/senjop
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