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Study Of Hydrometeorological Disaster Awareness In Community Of Langsa City

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ABSTRACT

The phenomenon of hydrometeorological disasters almost every year occurs in Langsa City. Langsa Lama and Langsa and East Langsa sub-districts are the areas most frequently affected by hydrometeorological disasters. The purpose of this study is to determine the awareness and level of sensitivity of the community to the disaster that will be faced, which can later be taken into consideration by the Langsa City government in reducing disaster risk. This research method is descriptive (survey), data obtained from observation and documentation questionnaires. Data processing techniques are carried out using the Gultman scale. The results of the study indicate that there is a need for a change in the education system. Disaster education is carried out by generalizing education intended to increase awareness training for emerging disasters. Exercises should be conducted regularly in family and community education, volunteer civil disaster medical assistance teams should be formed in each ward and pro-disaster collection area transferred to families.

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1. INTRODUCTION

The National Disaster Management Agency revealed that hydrometeo-rological disasters in Indonesia have the potential to increase in 2017. Especially floods and landslides which are predicted to increase in number due to weather anomalies and wet dry season until 2017. Apart from floods, the Indonesian population is also being watched by landslides. The number of people exposed to the danger of landslides reached 40.9 million people in 247 cities/districts. "Aceh to Lampung and in the central part of Java are threatened by landslides," he said. "They are in the hilly area (Siregar, 2018; Shaluf, 2007; Liz, et al. 2019).

Aceh is an area prone to hydrometeorological disasters such as floods, cyclones and droughts, as well as geological disasters such as earthquakes, tsunamis, volcanic eruptions and landslides. Aceh is prone to disasters due to the geographical and geological location of Aceh. Aceh's geographical conditions cause Aceh to have high rainfall (Honesti and Djali, 2012; Bronto and Setianegara, 2011).

Langsa City is located at 04º24´-35.68´ - 04º33 47´0-0.3´ North Latitude (N) and 97º53´14.59´- 98º04´42.16´ East Longitude (BT). Langsa City is bordered to the north by East Aceh and the Malacca Strait, to the east by Aceh Tamiang Regency, to the south by East Aceh Regency and Aceh Tamiang Regency and to the west by East Aceh Regency. Langsa City Topography In general, Langsa City is located at an altitude of 0-25 meters above sea level (above sea level). However, most of the Langsa City area in the southwest is coastal alluvial plains, with elevations ranging from about 8 meters above sea level. The southern part is a mountain range of moderate wavy folds, with elevations ranging from about 75 m above sea level, while in the eastern part there are also swamp deposits with a fairly wide distribution. In addition, the Langsa City area also has low and undulating plains and rivers (Afrian and Islami, 2019; Brown and Haun, 2014).

The initial survey conducted on January 12, 2021 obtained data from the Langsa City BPBD, disasters that often occur every year (Liz, et al., 2019) are floods, fires, fallen trees, hurricanes and landslides. In 2014 the worst flood case in Langsa City was on December 19 to December 26, 2014 which was caused by high rainfall as well as the overflow of the Krueng Langsa river, causing the flooding of almost the entire area of Langsa City.

Accepting the fact that disasters cannot be prevented at this time, various efforts are made to minimize the damage caused by nature and disasters caused by humans. Most importantly, these works are undoubtedly meant to form a basic awareness of disasters (Widodo and Nurholis, 2019; Brown, et al., 2014). Receiving training on hazards and risks in disaster and emergency situations, small steps taken as individuals will impact society, and all this ensures that painful experiences will not be repeated in our country (Zamroni, 2011; Honesti and Djali, 2012; Arisanti and Nugroho, 2018; Wahyuni, et al., 2018).

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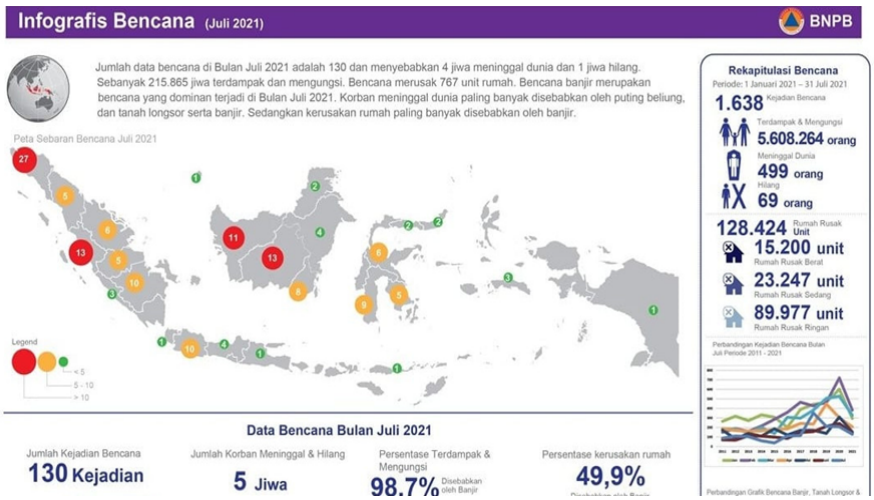

Source BNPB 2021

Figure 1. Indonesia Disaster Infographic

Based on the figure above, it can be seen that the disasters that dominate Indonesia are hydrometeorological disasters. Starting from the number of disasters to disaster victims, the dominant one is hydrometeorological disaster.

2. LITERATURE REVIEW

2.1 Disaster Awareness

Study of Law No. 24 of 2007, preparedness is a series of activities carried out to anticipate disasters through organization and through appropriate and efficient steps. Household preparedness in dealing with disasters makes the community have the knowledge to act when dealing with disasters that are happening, or disasters that will occur. To become a community that has disaster preparedness, it is necessary to have awareness that is owned by the community (Desfandi, 2014). By having disaster awareness, it is hoped that the community will be able to know what disasters will occur around them, whether the disaster has a serious impact or not, whether the disaster is classified as dangerous or not for themselves, their families, the environment and the people around them. Indonesian people's preparedness to face disasters is very low, it is very important for Indonesian people to cultivate disaster awareness (Solikhah, et al., 2020; Veronica and Honggowidjaja, 2013).

Disaster awareness education does not need to be used as a special subject, but can be in the form of local content depending on the type of disaster that often occurs in the area (Afrian, et al., 2020; Arisanti and Nugroho, 2018; Dewi, 2019). In developing public awareness of disasters, Indonesia has formed the National Action Plan for Disaster Reduction (RAN PB) which contains five priority actions that must be carried out, namely: 1) placing disaster risk reduction as a national and regional priority and its implementation must be carried out by a strong institution; 2) identify, assess disaster risk and implement an early warning system; 3) harness knowledge, innovation and education to build a culture of safety and resilience at all levels; 4) reduce disaster risk coverage; 5) improve disaster preparedness at all levels, so that responses are more effective (Desfandi, 2014; Afrian, et al., 2019).

Based on the five priorities above, it can be understood that knowledge and education are very important and strategic things to build a culture of caring people so that they have awareness of disasters.

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The more the family has a high awareness of the disaster, the less risk the family will face. For example, if there is an early warning regarding an impending disaster, a family who is aware of the disaster will leave their place of residence to evacuate, bringing with them essential and useful equipment (Ooi, et al., 2019).

The family is the smallest unit in which there are individuals. The importance of having awareness of disaster preparedness in families in dealing with disasters in families living in disaster-prone settlements, the researchers took the title Effect of Disaster Awareness on Disaster Preparedness in Families in Coastal Banten, Sumur District, to conduct research related to public awareness.

Research conducted by (Muthia, et al., 2020) In general, the preparedness of the Semarang community is in the "almost ready" category with an index value of 55.8. This position is at the third level of disaster preparedness. The areas of Arum and Manyaran which have a preparedness index of "Not Ready", Mangunharjo areas are in the index of being quite ready. These three areas are located in areas with a fairly high level of vulnerability so that they are prioritized for socialization and intervention.

Research conducted (Anggun, et al., 2020) on the "Vulnerability Index of Coastal Areas to Flood Disasters", the results show that the level of public awareness in responding to floods is still low. People do not have access to flood news in their area.

Research conducted by (Lestari, et al., 2019) regarding “Environmental Communication for Mitigation of the Mount Sinabung Eruption Disaster”, stated that the community is expected to be able to build an understanding with other communities and even with the regional and central government, so that environmental problems in the Sinabung disaster area are alternative.

Several studies above show that disaster awareness in the community still needs to be improved. Increasing awareness of this disaster needs to be considered by all levels of society as well as the government.

3. METHODS

Descriptive analysis method (survey) which allows qualitative analysis is used to reveal the presence or absence of disaster awareness in this study. Meanwhile, the survey method was used as a data collection tool. In this behavioral analysis, it will be analyzed whether the respondent has disaster awareness or not, the determination of the respondent is based on the sample calculated with the alpha level of confidence, the number of respondents is 123 respondents.

The instrument used in this research is a questionnaire. Questionnaire is a sheet containing written statements and questions that are used to obtain information from respondents with a predetermined score. The questionnaire contains statements and questions related to disaster awareness and disaster preparedness behavior. Before being given to the sample, the questionnaire was tested to qualify as a good measuring tool. The validity of this questionnaire is then tested as a statistical requirement to obtain an instrument that can be accounted for.

The scale used is a Likert scale with 4 levels of answers. The answer levels are strongly agree, agree, disagree, and strongly disagree. The answer scores range from 1 to 4, with the lowest score being 1 and the highest score being 4 for each item.

The results of the study are presented using percentage statistics. Each statement item or questionnaire question is expressed in the form of a score and then percentage and described.

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4. RESULTS AND DISCUSSION

4.1 Knowledge and Attitude

Outcome Knowledge of disasters is the main reason for a person to carry out protection activities or preparedness efforts. The knowledge possessed affects the attitude and concern of the community to be ready and alert in anticipating disasters (Brown and Haun, 2014; Brown, et al., 2014), especially for those who live in areas prone to natural disasters. This knowledge is knowledge about the causes of disasters, when disasters usually occur and what to do (Desfandi, 2014).

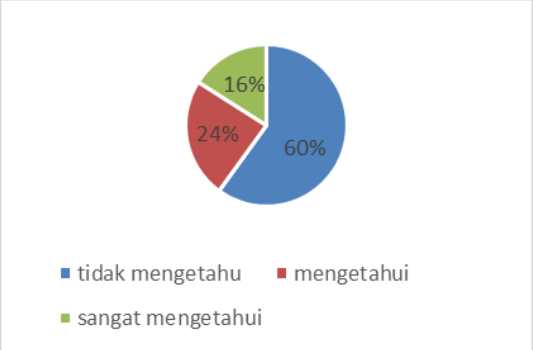
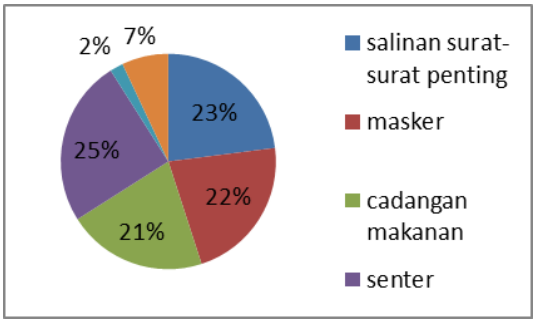


Figure 1 Community knowledge level

Based on the processing of the questionnaire data, it was identified that the community knew (24%) and was very aware (16%) of various preparedness actions. The community generally does not know about the disaster which (16%) is almost entirely from the community with a good educational background.

4.2 Emergency Response Plan

According to Law no. 24 of 2007 concerning disaster management, disaster emergency response is a series of activities carried out immediately at the time of a disaster to deal with the adverse effects caused, which include rescue and evacuation of victims, property, fulfillment of basic needs, protection, management of refugees, rescue, and restoration of infrastructure and facilities (Siregar, 2018; Solikhah, et al., 2020). An emergency response plan is very important, especially on the first day of a disaster or a period when assistance from outside parties has not been received, at this time an emergency response plan from each individual in the community is needed (Honesti and Djali, 2012).



Based on the results of data analysis, of the five items in the form of emergency response, almost the entire community does not have important numbers to contact, for example hospital numbers, police and so on. Community emergency response plans should be further improved.

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4.3 Support Resources

This indicator generally looks at the various resources needed by individuals or communities in an effort to recover or survive in a disaster or emergency condition which can come from internal or external sources from the affected area.

The resource mobilization indicator looks at the various resources needed by individuals or communities in an effort to recover or survive in a disaster or emergency condition. Existing resources can come from internal (from within the disaster-affected area itself) and external (from outside the disaster area).

The results of data processing found that most of the community did not receive material on disaster awareness (95%). Most of the respondents stated that they did not get the material, which they did get based on their personal experience in dealing with floods that repeatedly hit their area. Meanwhile, those who stated that they received materials (5%) were generally only village officials.

Hydrometeorological disasters (meteorological natural disasters) are natural disasters related to climate. Hydrometeorological disasters include floods, landslides, tornadoes, tidal waves, and droughts. The frequency of climate and weather-related disasters in Indonesia has continued to increase in the last 10 years. Based on data from the National Disaster Management Agency (BNPB), during 2002–2012, 92.1% of disasters in Indonesia were caused by hydrometeorological factors. Even in 2013, the percentage increased to 97%. Environmental damage and global climate change are thought to be the triggers (Wahyuni, et al., 2018; Indriatmoko and Purwanta, 2017).

According to (Isnaini, 2019; Maliangkay, 2020) Hydrometeorological disasters will become the greatest threat to humans in the years to come, because when global warming impacts the melting of polar ice caps, temperatures in the snow mountains warm, and countries in the world, especially Asia, including Indonesia, are increasingly threatened by hydrometeorological disasters that continue to increase.

Changes in weather are only a trigger, the main cause is massive environmental damage due to a decrease in the carrying capacity and capacity of the environment. The National Disaster Management Agency (BNPB) shows that the frequency and intensity of disasters in Indonesia has continued to increase over the last 15 years.

5. CONCLUSION

The level of awareness of the people of Langsa City towards the flood disaster is still low. This is evident from the lack of knowledge and attitudes, the lack of emergency response plans and the program has not run smoothly. Lack of socialization causes there are still victims when the disaster strikes. The lack of coordination between parties in an institution causes information about disasters to not be widely and quickly spread. Programs as well as legality

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cause financing to be implemented and audited by the city government. Program planning that is not basic and not carried out routinely causes the results of the program to not have an effective impact in dealing with disasters.

6. RECOMMENDATION

Recommendations are things that need to be followed up by readers as further researchers, certain professions or certain position holders. Recommendations should be written using coherent paragraphs.

7. REFERENCES

Afrian, R., and Islami, Z. R. (2019). Increasing the potential for disaster mitigation by strengthening disaster literacy skills in the people of Langsa City. *Journal of Geography and Education, 24*(2), 132-144.

Afrian, R., Suciani, A., Islami, Z. R., Marfai, M. A., Hizbaron, D. R., and Urfan, F. Study of hydrometeorological disaster awareness in community of Langsa City. *Jurnal Pendidikan Ilmu Sosial, 30*(2), 129-136.

Afrian, Z. I. R., Urfan, F., and Islami, Z. R. (2020). The utilization of instagram as moderating variable between geography learning outcomes and disaster preparedness. *Journal of Social Science Education, 29*(1), 1-12.

Anggun, T., Putera, R. E., dan Liesmana, R. (2020). Pemberdayaan masyarakat dalam pengurangan risiko bencana banjir di Kecamatan Padang Selatan. *JDKP Jurnal Desentralisasi dan Kebijakan Publik, 1*(2), 123-137.

Arisanti, Y., dan Nugroho, P. W. (2018). Strategi manajemen bencana di kabupaten Magelang. *Berita Kedokteran Masyarakat, 34*(5), 12-6.

Bronto, S., dan Setianegara, R. (2011). Ancaman bahaya letusan gunung api skala besar dan monogenesis di Indonesia. *Jurnal Geologi dan Sumberdaya Mineral, 21*(1), 29-40.

Brown, L. M. and Haun, J. (2014). Disaster preoaredness for seniors. *Disaster Preparedness Seniors, 2*(1), 249-260.

Brown, L. M., Haun, J. N., and Peterson, L. (2014). A proposed disaster literacy model. *Disaster medicine and public health preparedness, 8*(3), 267-275.

Desfandi, M. (2014). Urgensi kurikulum pendidikan kebencanaan berbasis kearifan lokal di Indonesia. *Sosio-Didaktika: Social Science Education Journal, 1*(2), 191-198.

Dewi, R. S. (2019). Mitigasi bencana pada anak usia dini. Early Childhood: *Jurnal Pendidikan, 3*(1), 68-77.

Honesti, L dan Djali, N. (2012). Pendidikan kebencanaan di sekolah – sekolah di Indonesia berdasarkan beberapa sudut pandang disiplin ilmu pengetahuan. *Jurnal Momentum, 12*(1), 51-56.

Indriatmoko, R. H., dan Purwanta, W. (2017). Perubahan lingkungan dan strategi adaptasi dampak perubahan iklim di Bandar Udara Hasanuddin, Makassar. *Jurnal Teknologi Lingkungan, 18*(1), 80-87.

DOI: https://doi.org/10.17509/jpis.v30i2.40516
e-ISSN: 2540-7694 p-ISSN: 0854-5251

Isnaini, R. (2019). Analisis bencana tanah longsor di wilayah Jawa Tengah. *Islamic Management and Empowerment Journal, 1*(2), 144-145.

Lestari, P., Paripurno, E. T., and Nugroho, A. R. B. (2019). Table top exercise disaster communication model in reducing disaster risk. *Jurnal Penelitian Komunikasi, 22*(1), 17-30.

Liz, Z., Huang, Q., and Emrich, C. T. (2o19). Introduction to social sensing and big data computing for disaster management. *International Journal of Digital Earth, 12*(11), 1198-1204.

Maliangkay, D. (2020). Mapping of landslide disaster areas in the upstream tondano watershed as a natural laboratory for geographic students. *Journal Epic, 1*(1), 14-21.

Muthia, R., Mailani, F., dan Huriani, E. (2020). Pemberdayaan masyarakat melalui pelatihan mitigasi dan kesiapsiagaan bencana di Nagari Pakan Sinayan. *Warta Pengabdian Andalas, 27*(3), 187-196.

Ooi, S., Tanimoto, T., and Sano, M. (2019). Virtual reality fire disaster training system for improving disaster awareness. *Pervasive Health Pervasive Computing Technology Healthcare, 1*(2), 301-307.

Shaluf, I. M. (2007). Disaster types*. Disaster prevention and management: An International Journal, 16*(5), 704-717.

Siregar, A. M. (2018). Penerapan algoritma k-means untuk pengelompokan daerah rawan bencana di Indonesia. *INTERNAL (Information System Journal), 1*(2), 1-10.

Solikhah, M. M. A., Krisdianto, M. A., dan Kusumawardani, L. H. (2020). Pengaruh pelatihan kader tanggap bencana terhadap kesiapsiagaan bencana. *Jurnal Ilmiah Ilmu Keperawatan Indonesia, 10*(04), 156-162.

Veronica, S., dan Honggowidjaja, S. P. (2013). GEMPA: Game edukasi sebagai media sosialisasi mitigasi bencana gempa bumi bagi anak autis. *Jurnal Pendidikan dan Pembelajaran Universitas Negeri Malang, 6*(1), 115-120.

Wahyuni, L., Rohmat, D., and Setiawan, I. (2018). Hazard analysis of earthquake in the main campus of Universitas Pendidikan Indonesia. *Jurnal Pendidikan Ilmu Sosial, 27*(2), 116.

Widodo, B., dan Nurholis, E. (2019). Revitalisasi Epistemologis Pendidikan Kewarganegaraan: Upaya Meminimalisir Bencana Sosial. *Jurnal Artefak, 6*(2), 49-58.

Zamroni, M. I. (2011). Islam dan kearifan lokal dalam penanggulangan bencana di Jawa. *Jurnal Dialog dan Penanggulangan Bencana, 2*(1), 1-10.

DOI: https://doi.org/10.17509/jpis.v30i2.40516
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