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Pre-Disaster financing readiness at the Palu city regional disaster management agency

Kesiapan pembiayaan prabencana di badan penanggulangan bencana daerah (BPBD) Kota Palu Muhammad Ryman Napirah^{1*}, Vidyanto², Miftahul Haerati Sulaiman³

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ABSTRACT

Background: Disaster is an event or incident that threatens and disrupts people's lives.

Objective: The purpose of this study was to analyze the readiness of predisaster financing in disaster risk reduction programs, disaster prevention programs, and disaster education at Palu City BPBD.

Methods: This type of research is qualitative research with a case study approach. There are three informants in this study, namely key informants, ordinary informants, and additional informants. To obtain data, a technique is needed, therefore in this qualitative research the technique used is triangulation of techniques and sources.

Results: The results showed that the budgeting for pre-disaster programs in Palu City is allocated annually, for the allocation of funds for disaster risk reduction programs is also the same. The budget for disaster prevention comes from the APBD and APBN, with or without a budget, Palu City BPBD can still run its disaster program. Disaster financing for disaster education programs at the Palu City BPBD comes from APBD and APBN funds.

Conclusion: It is expected that financing for disaster risk reduction programs, disaster prevention programs, and disaster education at the Palu City BPBD must be allocated annually, and routine training must be carried out for staff.

Keywords: Readiness, Pre-Disaster Financing

ABSTRAK

Latar Belakang: Bencana adalah peristiwa atau kejadian yang mengancam dan mengganggu kehidupan manusia.

Tujuan: Tujuan penelitian ini adalah menganalisis kesiapan pembiayaan prabencana pada program pengurangan risiko bencana, program pencegahan bencana, dan pendidikan kebencanaan di BPBD Kota Palu.

Metode: Jenis penelitian ini adalah penelitian kualitatif dengan pendekatan studi kasus. Informan dalam penelitian ini ada tiga, yaitu informan kunci, informan biasa, dan informan tambahan. Untuk memperoleh data diperlukan suatu teknik, oleh karena itu dalam penelitian kualitatif ini teknik yang digunakan adalah triangulasi teknik dan sumber.

Hasil: Hasil penelitian menunjukkan bahwa penganggaran untuk program prabencana di Kota Palu dialokasikan setiap tahunnya, untuk pengalokasian dana untuk program pengurangan risiko bencana juga sama. Anggaran untuk penanggulangan bencana bersumber dari APBD dan APBN, dengan atau tanpa anggaran, BPBD Kota Palu tetap dapat menjalankan program kebencanaannya. Pembiayaan kebencanaan untuk program pendidikan kebencanaan di BPBD Kota Palu bersumber dari dana APBD dan APBN.

Kesimpulan: Setiap tahun diharapkan dialokasikan dana untuk program pengurangan risiko bencana, program pencegahan bencana, pendidikan kebencanaan serta dilakukan pelatihan rutin bagi staf di BPBD Kota Palu,

Kata kunci: Kesiapan, Pembiayaan Prabencana

INTRODUCTION

Disasters are events or incidents that threaten and disrupt people's lives. Disasters are divided into three, namely natural disasters, non-natural disasters, and social disasters.¹ Several cities and countries in the world seem to be regular locations for disasters, namely Indonesia, Japan, the Philippines, the United States, China, and Turkey. From BNPB, it states that disaster incidents in the world continue to increase, where 76% are hydrometeorological disasters (floods, droughts, landslides. tropical cyclones) which have a major impact on several poor and developing countries.²

Indonesia ranks 36th with a risk index of 10.36 out of 172 countries most prone to natural disasters in the world. Almost all regions in Indonesia are exposed to the risk of nine major natural disasters, namely earthquakes, tsunamis, floods, landslides, volcanic eruptions, fires, extreme weather, extreme waves, and drought.³

Every disaster that occurs requires mitigation to minimize damage, losses, and also casualties. In Law Number 24 of 2007 concerning Disaster Management, disaster management is carried out in a targeted manner starting from pre-disaster, during emergency response, and post-disaster. Good management must be accompanied by good funding, procurement of goods, and distribution of aid.⁴

One of the emergency responses that must be available is disaster rescue. The APBN is an annual cycle consisting of planning and budgeting. The financing approach that has been taken by the government so far tends to be more relative to the post-disaster and emergency phases, even though funding should also be provided in the pre-disaster phase so that it can be said that there is a lot of disaster financing.³

The Central Sulawesi region has experienced at least 19 destructive earthquakes (destructive earthquakes) since 1910 to 2013.⁵ The earthquake disaster that occurred in Palu City on September 28, 2018, with a magnitude of 7.4 SR which shook Palu City, resulted in the destruction of facilities and Palu infrastructure in City and its surroundings, due to the earthquake, tsunami, and liquefaction. Communities in coastal areas are very vulnerable to various disasters, such as hurricanes, storms, tsunamis, and heavy rain.⁵ Based on disaster financing data at the Palu City BPBD, the amount of funds for 2019 disaster financing in was IDR 2020 IDR 2,621,069,310, in it was in 2021 it IDR 56,061,246,098, was 583,603,744,534, and in 2022 more than 823M. These funds are then distributed again for several disaster programs such as disaster management programs, services and evacuation of disaster victims, and so on. This disaster financing is used by the Planning Division and also the Preparedness Division at the Palu City BPBD.6

Based on the researcher's preliminary research, through interviews with the Head of the Palu City BPBD, the disaster financing in Palu City that is available is only the available

funds that are not sufficient so that several

disaster programs are not implemented optimally. From the disaster financing data attached to the Palu City BPBD, several financings have been implemented such as financing for pre-disasters, namely disaster prevention programs, disaster prevention, and disaster education have been implemented. For emergency disaster financing, namely when a disaster occurs, the programs funded in the form of services, rescue, and evacuation of disaster victims have also been implemented as well as the procurement of logistics. In post-disaster financing, namely rehabilitation and reconstruction at the Palu City BPBD, the financing available for rehabilitation such as community outreach, coordination, and several other rehabilitation programs. For pre-disaster financing itself, it is focused on disaster mitigation activities, but the allocation of funds for pre-disaster programs is still not optimal.

Based on the background, the researcher is interested in conducting research on Pre-Disaster Financing Readiness at the Palu City Regional Disaster Management Agency (BPBD). Specifically, this study aims to analyze pre-disaster financing readiness in disaster risk reduction programs, disaster prevention programs, and disaster education at the Palu City BPBD.

MATERIALS AND METHODS

This type of research is qualitative research with a case study approach that explains the readiness of pre-disaster financing at the Palu City BPBD. This research was conducted at the Palu City BPBD, in July 2024. The informants in this study were three informants, namely key informants, regular informants, and additional informants. In this study, the technique used to determine informants was the purposive sampling technique, which is a sampling technique based on certain objectives, this technique is carried out by selecting informants according to the research problem. To obtain data, a technique is needed, therefore in this qualitative research, the technique used is the triangulation technique. This study uses technical triangulation and source triangulation.

RESULTS AND DISCUSSION

Disaster Risk Reduction Program

The Disaster Risk Reduction Program is a program created to improve skills and knowledge in dealing with disasters. The development of skills and knowledge in dealing with disasters can be applied in the community, especially in the school environment as a means of education. Some of the programs developed are Disaster Preparedness Schools (SSB), School-Based Disaster Risk Reduction (PRBBS), and Child-Friendly Schools (SRA). The development of this disaster preparedness school was also created to develop safe schools.7

Based on interviews conducted by researchers regarding the question of how is the financing carried out by the Palu City BPBD during the pre-disaster. Pre-disaster financing sourced from the APBD, APBN,

grants, rehabilitation and reconstruction funds is used by BPBD in accordance with the RKA that has been prepared by each sub-sector of the Palu City BPBD. From the results of interviews with informants, it was found that the pre-disaster financing in the Palu City BPBD is more focused on disaster mitigation activities to reduce the risk of disaster when a disaster occurs. This pre-disaster financing will later be divided again for disaster risk reduction programs, disaster prevention and disaster education programs. For disaster risk reduction programs, warning signs or warning boards, evacuation routes, assembly points, and many other programs are funded by the APBD and APBN.

Pre-disaster financing at the Palu City BPBD is distributed on average annually. The disaster budget at the BPBD mostly comes from grants and the APBD. Usually funds sourced from the APBN are disbursed only during a disaster emergency or for rehabilitation and reconstruction funds.

This study is in line with pre-disaster financing is financing that is only focused on activities when there is no natural disaster. This financing is used for all activities or programs for disaster risk reduction, disaster prevention, and disaster education. Other funding comes from disaster risk transfer funds.⁹

In-depth interviews were also conducted with ordinary informants to find out what the disaster financing strategy is at the Palu City BPBD for disaster risk reduction programs. Disaster financing in the Palu City BPBD, especially for pre-disaster programs, comes from the APBN and APBD as well as from grants. All disaster financing in the Palu City BPBD is provided after recording disaster needs. In an in-depth interview conducted by the researcher, the informant said that the budget for pre-disaster programs in Palu City is allocated annually. All financing carried out in the Palu City BPBD, not only BPBD but all Palu City agencies are required and obliged to make a work budget plan in a year's budget, each sector in the Palu City BPBD makes a plan in a year regarding what activities they must do. Then an RKA is made, after the RKA is made, it is assisted by the assistance team and the finance team, whether the work programs in the RKA document can be covered in their entirety or not. The financing strategy for disaster risk reduction is made through a work plan by each sub-sector in the Palu City BPBD. Not all planned programs can be implemented or realized, this is because not all disaster prevention programs can be covered by BPBD. To prevent disruption of disaster prevention activities, BPBD can collaborate with surrounding sectors so that whether or not there is funding from BPBD, the program can still be run.

These results are in accordance with the theory one of the emergency responses that must be available is disaster financing, the APBN is an annual cycle consisting of planning and budgeting. The allocation of disaster management financing is usually managed by BNPB as an institution that focuses on disaster management. The financing approach that has been carried out by the government tends to be more relative to the post-disaster and emergency phases.¹⁰

The results of this study are also in accordance with the theory in emergency response conditions, the funds used are ready-to-use funds sourced from the State Revenue Budget (APBN) and Regional Revenue Budget (APBD). The problem that often arises regarding disaster funding is if the ready-to-use funds are insufficient so that funds outside the ready-to-use funds must be disbursed.¹¹

However, the results of this study are not in line with the disaster financing process still has weaknesses, namely the failure to realize disaster management and weak coordination between related agencies. Lack of funds or delays in funds can hamper the implementation of disaster management programs.¹²

Further interviews were conducted to find out the Program what disaster risk reduction has been budgeted in the Palu City BPBD and has been implemented. Based on statements from key informants and ordinary informants, the programs that have been implemented in the BPBD for disaster risk reduction are disaster-resilient schools. disaster-resilient sub-districts, and disaster training for each cadre in the sub-district. In addition, the Palu City BPBD has implemented a program in the sub-district, namely each sub-district proposes one of its members to be given training on disaster mitigation, then a program for socialization to schools about disaster management, and activities to install information signs regarding disaster management for the community.

Every program that has been planned and gone through the inspection stage of the supervisory and financial teams must be realized properly. If the program is not realized properly, the funds that have been given for the program must be returned. Funds that have been disbursed must be spent within one year of work.

The results of this study are in line with pre-disaster financing the research is financing intended for programs before a disaster occurs. Meanwhile, funding when a potential disaster occurs is used for preparedness activities, development of early warning systems, and disaster mitigation activities. Funding used for activities during the pre-disaster period has mostly been provided by the APBN in the form of allocation of funds from related K/L.9

The results of this study are also in accordance with prevention activities include making disaster-prone maps, developing regulations and disseminating information. Making a disaster map includes identifying types of disasters and community vulnerability maps. In making a community vulnerability map, public health and coverage for health services must be identified, such as immunization coverage, KIA and nutrition. Health financing also needs to be considered whether there is an allocation of funds for disaster management later.¹³

However, the results of this study are not in line with in disaster financing, especially in Indonesia. it is necessary to use Catastrophone Bonds in disaster financing. In this case, the Indonesian government still does not pay enough attention to the fact that all natural disasters ranging from earthquakes, tsunamis, landslides and so on are the result of limited resources and extreme events. Seeing this condition, Catastrophone Bonds can be explored as an alternative for disaster risk financing.14

Disaster Prevention Program

The Disaster Prevention Program is a program carried out to prevent disasters and even to eliminate the danger of disasters. This prevention program covers many things including mitigation and preparedness of an area in facing disasters. To find out the disaster prevention plan, the prevention or planning sector at BPBD needs to pay attention to annual activities in preventing disasters and what disasters often occur in the area.¹⁵

Based on interviews conducted by researchers regarding the question of how the disaster prevention program financing strategy is at the Palu City BPBD. The disaster financing strategy is a method used by the Palu City BPBD to regulate the financing of disaster prevention programs. Based on statements from several informants at the Palu City BPBD regarding the disaster prevention program financing strategy, the budget initially came from the APBD and APBN, the Palu City BPBD also planned for a disaster mitigation program, so that with or without a budget, the Palu City BPBD can continue to run its disaster program. This can be done by collaborating with related agencies, for example from education, every school certainly already has a program for disaster education, so that's where BPBD can participate in the program.

Not only from schools but the same thing is also done in the sub-districts in Palu City. Other disaster mitigation activities include training activities, disaster risk reduction socialization activities, disaster service information infrastructure procurement activities, then activities for the procurement of disaster equipment and logistics and the earthquake-resistant Palu building program.

The results of this study are in accordance with the budget available at the Regional Disaster Management Agency cannot be grouped into certain disaster subpriorities. So the existing budget is given to cover all disaster activities. When requesting funding for a particular disaster, each sector must make an activity plan.¹⁶

The results of this study are also in line with funding for disaster management programs at the pre-disaster stage is provided with a normal budget and comes from the APBD or APD and contingency funds by APBN. This pre-disaster funding is divided into two, namely funding for the non-disaster phase and when a potential disaster occurs. For all pre-disaster activities other than preparedness, funds budgeted by the APBN and APBD or funds allocated to BNPB or BPBD are used.¹⁷ However, the results of this study are not in line with a city can be said to be ready to face a disaster when all dimensions of the preparedness framework have been met to face a disaster. When all dimensions are met, a rapid response to a disaster can be carried out. Contingency plans every 3 years must be updated in order to run a structured program when a disaster occurs.¹⁸

Based on interviews conducted to find out how the implementation of the disaster prevention program carried out by the Palu City BPBD, the disaster prevention program focuses more on the planning sector, namely in sector one, but most of the activities they do are education or education about disasters so that disaster prevention and risk reduction programs are still lacking in the Palu City BPBD. for prevention programs that are often carried out in the Palu City BPBD is the placement of natural routes, where the preparedness sector checks each area that has a natural route, then after finding a natural route, an information board or warning board is installed in the area to prevent unwanted incidents, but in reality the natural route in Palu City is still quite a lot of points but there are no signs for the points.

In addition to the program for determining natural routes, there is also a disaster prevention program that has been implemented in the Palu City BPBD in the form of mapping disaster-prone areas, where this program collaborates with BMKG. Furthermore, the procurement of gathering points when a disaster occurs and also the determination of evacuation routes to prevent victims when a disaster occurs.

The results of this study are in accordance with the as one of the follow-ups to face the disaster in 2005 in Kobe-Japan, a World Disaster Reduction Conference was held which produced various basic substances to reduce losses due to disasters. There are 5 priorities in the activity, namely 1. Making disaster risk reduction a national or regional priority, 2. Identifying, assessing and monitoring disaster risks and implementing an early warning system, 3. Utilizing knowledge and innovation as well as education in building awareness and self-safety and resilience to disasters in the community, 4. Reducing the factors causing disaster risk, 5. Strengthening readiness in facing disasters at all levels of society.¹⁹

In-depth interviews were also conducted to find out whether the disaster prevention program carried out by BPBD was in accordance with the 2018 PARB of the Ministry of Finance. The disaster program at the Palu City BPBD must of course be in accordance with decisions or regulations from the government and parties related to disasters. Based on the results of interviews conducted at the Palu City BPBD, the disaster prevention program was in accordance with the PARB by the Ministry of Finance. This is reinforced by the statement of other ordinary informants that for pre-disaster programs or other disaster programs, the Palu City BPBD has referred to other laws and regulations that have been ratified, so that this prevention program is also in accordance with the PARB by the Ministry of Finance. The results of this study are in line with the theory every disaster prevention activity is carried out to prevent or even eliminate the threat of disaster. Every disaster activity carried out by BPBD or related parties regarding disasters must be based on laws and regulations by the central and regional governments.³

Disaster Education

Increasing knowledge to be aware of disaster preparedness can be done through socialization with the aim of educating. This is in line with the activities carried out by BNPB, that socialization of disaster awareness is very important to reduce the impact when a disaster occurs. The communication strategy carried out by BNPB is to carry out disaster education, such as providing material in the form of understanding disasters, the impacts caused by disasters, and efforts to mitigate the disaster. Children have a higher vulnerability to disasters compared to adults, this is because children are still unable to control and prepare themselves during disaster situations.20

Based on interviews conducted by researchers regarding the question How is the financing strategy carried out by the Palu City BPBD for disaster education programs. Based on the informant's statement regarding the financing strategy at the Palu City BPBD for the disaster education program, the disaster financing at the BPBD itself comes from the APBD and APBN funds. For disaster activities at the Palu City BPBD must first record what programs will be implemented. After that, the region will spend money on disaster programs at the Palu City BPBD. In addition to these funds, there are also unexpected funds, these funds are provided by the Regional Finance Agency. Most of the funds at the Palu City BPBD are focused on disaster mitigation activities, such as training activities, socialization of disaster risk reduction and procurement of disaster information and education infrastructure.

The results of this study are in accordance with the regional government is responsible and has the authority to organize disaster management in its region. The main person in charge in a region in providing support is the regent, mayor and governor. There are several responsibilities that must be fulfilled by the regional government, namely: allocating funds for disaster management, including disaster management in regional development, protecting its people from disasters, making emergency disaster responses and carrying out post-disaster rehabilitation.21

The results of this study are also in line with the enactment of Law Number 24 of 2007 concerning disaster management, the implementation of disaster management is expected to be better, because the central government and regional governments are responsible for implementing disaster management. This disaster management is carried out in a targeted manner starting from pre-disaster, disaster emergency to postdisaster. In terms of disaster management, of course, it must also be supported by budgeting, disbursement from the central government budget, as well as regional governments and the community.²²

However, the results of this study are not in line with disaster insurance is an alternative financing for damage to state buildings. Disaster financing through insurance can accelerate post-disaster recovery. In this insurance, not everything can be insured, only disaster threat factors, building resilience, and building functions can be a priority in disaster insurance.²³

The next interview was conducted to find out how the disaster education program was implemented at the Palu City BPBD. This disaster education program means a program created to provide knowledge about disasters to each individual or community. Based on the results of interviews with informants at the Palu City BPBD, the implementation of the disaster education program carried out in the form of disaster-resilient schools, socialization of disaster management such as disaster risk reduction. This socialization is carried out in the community as well as in schools. In addition to educational activities to the community and schools, there is also disaster training for BPBD staff which is routinely carried out every year. The results of the study are in line with the implementation of disaster preparedness education for students can be carried out through extracurricular activities by looking at the conditions and environment of the school. The implementation of Role

Playing carried out on students can form dramatization and develop students' imagination so that it becomes an interesting strategy for learning and educating students about disaster preparedness. In disaster education activities for students, the principles are followed in accordance with Ministerial Regulation No. 2 of 2014.²⁴

CONCLUSIONS

The conclusions of this study are as follows:

- Budgeting for pre-disaster programs in Palu City is allocated annually, while the allocation of funds for disaster risk reduction programs is also the same. Programs that have been implemented in BPBD for disaster risk reduction are disaster-resilient schools, disaster-resilient villages, and disaster training for each cadre in the village. The realization of funding for this disaster program did not meet the target because in the BPBD Renstra the budget for risk reduction for the last three years was not available.
- 2. The budget for disaster prevention comes from the Regional Revenue Budget (APBD) and the State Revenue Budget (APBN). With or without a budget, BPBD Palu City can still run its disaster program. Disaster prevention activities carried out by BPBD are education or education about disasters so that disaster prevention programs are still lacking in BPBD Palu City. The prevention programs that have been realized are the creation of earthquake-

resistant house designs, determination of earthquake-prone areas, and determination of natural routes.

3. Disaster financing for disaster education programs at BPBD Palu City comes from APBD and APBN funds. For disaster activities in the Palu City BPBD, they must first record what programs will be implemented. The implementation of disaster education programs carried out in the form of disaster-resilient schools, socialization of disaster management such as disaster risk reduction. The education program is too focused on the Palu City BPBD so that disaster prevention and risk reduction programs are less noticed.

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REFERENCES

 Sarapang, H. T., Rogi, O. H. A., & Hanny, P. (2019). Tsunami Disaster Vulnerability Analysis in Palu City. Spatial Journal, 6(2), 432–439.

http://repository.ub.ac.id/id/eprint/8056.

- Ekawati, J., Hardiman, G., & Pandelaki, E. E. (2020). Comparative Study of City Resilience After Natural Disasters. Arsitektura, 18(1), 129. https://doi.org/10.20961/arst.v18i1.28606.
- Ministry of Finance Indonesia. (2018). Disaster Risk Financing and Insurance Strategy. In Ministry of Finance of the Republic of Indonesia. https://fiskal.kemenkeu.go.id/files/parb/file /PARB2018_Revisi.pdf.
- 4. BPK. (2019). Funding for disaster management in the regions.

- Fauzi, M., & Mussadun. (2021). The Impact of the Earthquake and Tsunami Disasters in the Lere Coastal Area. Journal of Regional and City Development, 17(1), 16–24.
- 6. BPBD. (2023). Disaster Management, Palu City BPBD.
- Khanif, N. (2021). 'Evaluation of Community-Based Integrated Disaster Risk Reduction Programs', Journal of Educational Management, 8 No 1(April), pp. 49–66.
- Rosdiyani, T. (2020). 'Disaster preparedness education improves understanding of self-rescue procedures', ABDIKARAYA Journal, 2(1), pp. 1–7.
- Ash-shidiqqi, E.A. (2021). 'Alternative Natural Disaster Insurance Financing Strategies in Indonesia', Journal of Governance and Policy Innovation (JGPI), 1(2), pp. 111–119.
- 10. Ministry of Finance of the Republic of Indonesia. (2018). Disaster Risk Financing and Insurance Strategy, Ministry of Finance of the Republic of Indonesia.
- 11. BAPPENAS. (2007). Implementation of Good Governance. Jakarta: Secretariat of the National Policy Development Team for Good Governance.
- Carolina, M. (2018). Weaknesses in Natural Disaster Management in Indonesia. APBN Bulletin by the Budget Study Center of the DPR Expert Body.
- Ristrini. (2018). 'Analysis of the implementation of disaster preparedness policies in the health sector in West Sumatra Province', Health System Research Bulletin, 15(1), pp. 91–102.
- Firmansyah, A. (2019). Catasthrope bond as a government financing instrument in disaster management in Indonesia. Indonesian Treasury Review: Journal of Treasury, State Finance and Public Policy, 4(4), 339-349.
- 15. BPBD. (2022). Disaster Management, BPBD East Nusa Tenggara.
- BPBD. (2019). 'Duties, Functions and Organizational Structure of BPBD Bandung Regency', (23), pp. 1–16.
- 17. Rivani, E. (2018). Creative Industry, Fintech and MSMEs in the Digital Era.
- Hakim, Nurkhair, F.R. (2019)
 'Implementation of flood disaster risk reduction program at Medan City Regional

agement Agency' Unicu

- Disaster Management Agency', Unisu Journal, 2.
- BAKORNAS PB. (2007). Introduction to Disaster Characteristics and Mitigation Efforts in Indonesia. Central Jakarta: National Disaster Management Coordination Agency.
- Pahleviannur, M.R. (2019). 'Disaster awareness education through disaster socialization as an effort to increase students' knowledge of disaster mitigation', Journal of Education and Social Sciences, 29 No.1(p-ISSN: 1412-3835, e-ISSN: 2541-4569), pp. 49–55.
- 21. Heryanti, S. (2020). 'The Role of Local Government in Disaster Management', Journal of Government and Public

Security (JP and KP), 2(2), pp. 139–146.

- 22. Firdaus, F, Chaerul M, Gusty S. (2022). Analysis of vulnerability level of beach abrasion disaster in the District of North Galesong, Takalar Regency. ASTONJADRO. 11(3):576-87.
- 23. Marlina. (2020). Strategy For Determining Earthquake Disaster Financing And Insurance In State Buildings (Case Study at the Bengkulu Search and Rescue Office). Gadjah Mada University.
- 24. Tamil, N. (2020). Disaster Preparedness Education for Students Through Role Playing Methods in Extracurricular Activities at School. Amanah: Amanah Journal of Education and Teaching. Volume 1, Number 1: 10-19.