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Flood Management Strategy Based on Community Perception in Rajabasa Area, Bandar Lampung City

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ABSTRACTS

A flood is an event that occurs when an excessive volume of water flow submerges land. Bandar Lampung is one area that has the potential for flooding. Floods that occur in the Rajabasa area are caused by disturbances to the balance of nature due to human activities. In this case, this study aims to determine the coping strategy before the flood occurred in the Rajabasa area, to find out the coping strategy when a flood occurs in the Rajabasa area and the last is to find out the disaster management strategy after the flood in the Rajabasa area. The research method used was literature review such as journals and articles about flooding as a source of research carried out by collecting data and information about flooding and survey activities by distributing questionnaires to the public using the Google form as well as short and focused interviews with flood-affected communities. The results of this study indicate that the flood management strategy in the Rajabasa area of Bandar Lampung City, based on the community's point of view, is in the medium category, that is, the community already understands the coping strategy before the flood occurs, during the flood and after the flood occurs.

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INTRODUCTION

Flood is a natural phenomenon caused by water that is not accommodated by the drainage network in an area, causing inundation which is detrimental. Losses caused by floods are often difficult to overcome, both by the community and related agencies. Floods are caused by various factors, namely the condition of the rain catchment area, the duration and intensity of rain, land cover, topographical conditions, and the capacity of the drainage network. Flood in popular language is usually interpreted as a flow or pool of water that causes economic losses or even causes loss of life, whereas in technical terms 'flood' is the flow of river water that flows beyond the capacity of the river (Asdak, 2007).

There are five important factors that cause flooding, namely the rain factor, the watershed retention (DAS) destruction factor, the river channel development planning error factor, the river silting factor and the regional planning error factor and the construction of facilities and infrastructure (Maryono, 2005).

Floods according to (Haryono & Erdianto, 2008) are divided into three types based on their main causes, including:

a) Flood shipments

Sending floods are floods caused by rainwater runoff from the upstream to the downstream areas so that the burden of water storage that must be borne by the downstream areas is getting bigger.

b) Inundation/local flood

Inundation/local floods are floods caused by inundation originating from local rainwater that occurs in the area.

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c) Tidal flood/ROB

Tidal floods/ROB are floods that usually occur in coastal areas that have elevations lower than sea level.

Bandar Lampung City is one of the 15 major regions in Indonesia that are prone to disasters due to its geographical, topographical and climatological conditions. In addition, Bandar Lampung is a flood-prone area in Lampung Province. Based on BPBD data throughout 2023 there were 6 floods that hit the city of Bandar Lampung, namely in the sub-districts of Way Lunik, Teluk Betung Barat, Way Halim, Rajabasa, Sukarame and Jagabaya with heights varying between 25 cm to 1 meter. Floods in the area are caused by the low geographical conditions of the area, relatively high rain intensity, littering in the river, silting of the river, and narrowing of the river flow (BPBD Kota Bandar Lampung, 2023).

For settlements that have a high population density, such as in the Rajabasa, Nunyai, Kedaton, and Way Kandis areas, floods often occur due to a lack of water catchment areas and inadequate land management. Therefore, infiltration wells are needed which are useful for minimizing the occurrence of floods by absorbing rainwater into the ground (Rachmawati, et al., 2018).

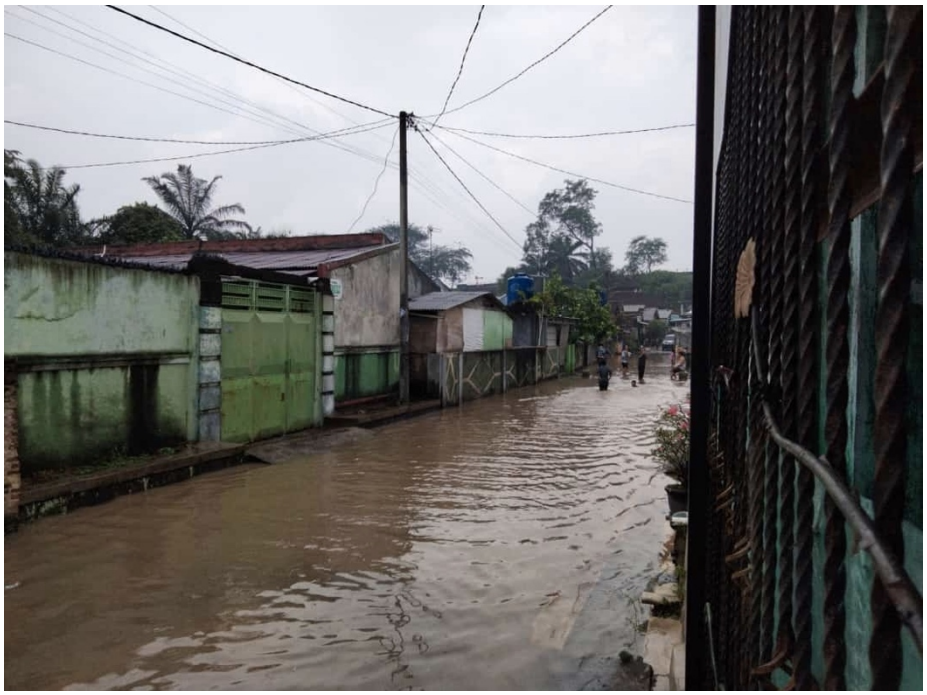

Figure 1. Flooding that occurred on Jalan Marga Anak Tuha, Rajabasa District, Bandar Lampung City.

The causes of flooding in the Rajabasa area, Bandar Lampung City are the lack of water catchment areas, residents constructing buildings or settlements near the river flow which causes narrowing of the river flow coupled with a drainage system that is still bad and poorly cared for by the government and by the surrounding community and the lack of public awareness of the importance of disposing of garbage in its place because often there is still a lot of garbage that fills rivers and clogs sewers (Aswadi dkk, 2022; Nawir dkk, 2022).

Efforts to deal with the flood disaster in the Rajabasa area have been carried out in coordination with the government, namely the Lampung Provincial Bappeda in his presentation. The Lampung Province Bappeda stated that the efforts that could be made were physical efforts and non-physical efforts. Physical efforts, namely the construction of flood control infrastructure, are carried out by increasing the capacity of rivers, embankments, flood overflows and/or pumps, dams, and urban drainage improvements. While the non-physical or non-structural efforts that will be carried out are by preparing policies that are administrative in nature (strengthening the legal framework for disaster management and increasing multi-stakeholder partnerships/pentahelix synergy in disaster management) and policies that are technical in nature (increasing preparedness and handling of disaster emergencies), carrying out coordination activities, regulation/ordering, coaching/counseling, public education, supervision, monitoring & evaluation (monev). Apart from that, it is also by improving

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aspects of management, institutions & resources (including HR capacity and funding) as well as changing paradigms (Bappeda Lampung, 2022).

In this case, this study aims to find out the coping strategies before floods occur in the Rajabasa area, to find out the coping strategies when floods occur in the Rajabasa area and the last is to find out the post-flood disaster management strategies in the Rajabasa area which are useful for finding suitable strategies to be used in Rajabasa area, Bandar Lampung City.

METHODS

Survey activities and literature review carried out by collecting data and information about flooding in the Rajabasa area, namely by conducting short and targeted interviews with local communities affected by floods and distributing questionnaires to surrounding communities through the Google Form which contains questions about mitigation measures floods.

Research sites

This research was conducted in the Rajabasa area, Rajabasa District, Lampung Province because this area often floods during heavy rains.

The types of data obtained from this research are:

Primary data, namely data obtained from the field through distributing questionnaires in the form of a Google Form containing questions about community knowledge on mitigation before a flood occurs, during a flood, and after a flood occurs to flood-affected communities in the Rajabasa area and interviews conducted with affected residents flooding in the Rajabasa area. Secondary data is data obtained through literature studies from various journals and articles from the internet.

Data analysis

The data analysis required is qualitative analysis and quantitative analysis. Researchers include questionnaires to the surrounding communities affected by the floods as a reference for obtaining strategies that are appropriate to the research area. In addition, researchers also use literature studies as a research source that can be used to obtain flood control strategies based on the perspective of the community in the Rajabasa area, Bandar Lampung City.

RESULTS AND DISCUSSION

Mitigation Strategies Before Flood Occurs

This strategy is carried out to reduce damage before the flood occurs. According to the results of the questionnaires and interviews with the community, there were 3 people in the low category, 7 people in the medium category and 10 people who were included in the high category. This shows that the community's knowledge of pre-flood countermeasures is in the high category. The majority of people already know what strategies can be used for countermeasures before floods occur, but there are still many people who are still ignorant of the surrounding environment, such as throwing garbage carelessly into rivers and waterways which causes siltation of rivers and blockage of waterways, causing flooding. To overcome this, the pre-flood disaster management strategy that can be carried out is to educate the local community about flood risk, preparedness measures, and appropriate responses during flood events. This could include training programmes, workshops and awareness campaigns to ensure that residents are well informed and ready to take the necessary action in the event of a flood. Careful land use planning is essential to prevent inappropriate development in flood prone areas. Implementing zoning regulations and building codes that restrict development in high-risk areas can help reduce a community's exposure to flooding.

Mitigation Strategies When a Flood Occurs

Community knowledge about countermeasures when a flood occurs in the low category is 4 people, the medium category is 10 people and the high category is 6 people. This shows that people's knowledge about disaster mitigation when a flood occurs is still relatively moderate because there is still a lack of infrastructure provided by the government and facilities when a flood occurs. The strategy that can be carried out when a flood occurs is if the flood is still relatively shallow, the community should move valuables to a higher place where the flood cannot reach them. Then if the flood is classified as high, the community needs to evacuate to a higher or safer place.

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Response Strategies After a Flood Occurs

Community knowledge about mitigation after a flood occurs, there are 2 people in the low category, 9 people in the medium category and 9 people in the high category. this happens regularly in the Rajabasa area, especially when there is very heavy rain with a long intensity of time. The strategy that can be implemented after a flood disaster is to build physical structures such as flood retaining walls, and drainage canals that can help retain flood water and divert it away from vulnerable areas. These structures must be designed to accommodate the expected water flow during heavy rain events. The Rajabasa area in Bandar Lampung, Indonesia, is prone to flooding due to its low-lying geography and heavy rainfall. Improving the existing drainage system in the Rajabasa area is essential for efficient water management. This can include cleaning and draining existing drains, constructing new drains, and ensuring proper maintenance. Making green open spaces is also very important to be able to help the water absorption process because without green open areas water absorption wells are not functioning optimally. Then, with the cooperation between the government and the community, they can help each other to get maximum results and can reduce the risk of flood disasters in the Rajabasa area of Bandar Lampung City and reduce losses caused by the flood.

Strategy Based on Community Perspective

Based on the community's perspective on flood disaster mitigation that was carried out before the flood disaster, when the flood disaster occurred, and after the flood disaster occurred, it was in the moderate category because in the Rajabasa area, Bandar Lampung City there was still a lack of outreach related to flood disaster mitigation and a lack of infrastructure and facilities. in the Rajabasa area, Bandar Lampung City. Therefore, repairing infrastructure such as waterways and socializing flood disaster management mitigation is very important to reduce the impact or risk of flooding.

CONCLUSION

Knowledge of flood disaster management in the Rajabasa area, Bandar Lampung City is in the medium category and it can be concluded that:

1. Prior to the floods that occurred in the Rajabasa area there was still a lack of socialization to the surrounding community, and the community was still ignorant of the surrounding environment, so that it had not been well coordinated in that environment and the lack of the role of the local government.
2. When a flood occurred in the Rajabasa area, the government immediately sent aid to the flood-affected areas.
3. After the flood in Rajabasa carried out a flood emergency response process and looked for the causes of the flood.
4. Based on the community's point of view, there are still many people who are not concerned with cleanliness around such as by throwing garbage into the river or into the waterways, and in the Rajabasa area there are also many people who build buildings in the area around the river, there are suggestions submitted by the community, namely dredging rivers, cleaning waterways, and enlarging the dimensions of waterways.

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