

Flood Disaster Mitigation Policy Analysis (A Case Study In Pangkalpinang City)

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Abstract: Disaster mitigation in Pangkalpinang City is one of the concerns of the Pangkalpinang City Government after the major floods in 2016. This study aims to look at how disaster mitigation policies are carried out by the Pangkalpinang City Government, especially by the Disaster Management Agency of Pangkalpinang City. This study uses qualitative methods with exploratory models (case studies). Data collection techniques used are through in-depth interviews and FGDs, document studies, field observations.. The result of the study shows that several disaster mitigation policies that have had a positive impact on Disaster Management Agency include structural and non-structural mitigation. For example in terms of social, administrative, environmental, structural, legal, and economic aspects. While the obstacles faced by the Disaster Management Agency include the aspect of funding, social aspect, and political aspects. Suggestions that can be given to the Pangkalpinang City Government are the need for more serious attention from the City Government and House of Representatives on the existence of Disaster Management Agency because Pangkalpinang City is now prone to major floods, including stagnant water conditions (small floods).

1 INTRODUCTION

There are various problems that often hit urban areas. Starting from the problem of urbanization, the emergence of slums, to the problem of flooding. Various cities experience problems when they have to face flood problems that always occur repeatedly. The city of Pangkalpinang as the capital of Bangka Belitung Province also experienced a similar problem. A major flood occurred in February 2016. Previously, a major flood that had occurred in 1986. Floods and puddles are classic problems in this city. This is due to the concave morphology in which the city center has a lower position. In addition to natural factors, floods that occur have also been influenced by policy of settlement and building arrangement. The number of buildings is increasing and sacrificing many water catchment areas. Based on data, the decreasing number of water catchment areas in the last ten years as follows :

Table 1. The Decreasing Number of Water Catchment Areas

Areas	Before Decreasing	After Decreasing
Lake behind Restaurant Asui	1.7 hectares	0.8 hectares
Kolong Kepoh	5 hectares	2 hectares
Kolong Akik	5 hectares	2 hectares

Source: *Public Works Agency of Bangka Belitung*

After the big flood occurred in 1986, the City Government of Pangkalpinang actually has formulated a Detail Engineering Design (DED) to deal with flooding. It was formulated based on the regional spatial plan in 2010. Unfortunately, it cannot be realized due to budget constraints. At least 33 billion rupiahs is needed to realize the DED in terms of building a retention lake in the center of the city. Then disaster management also has not been tested. The regional disaster management agency has just established in 2016, only a few weeks before the second big flood. The establishment of the agency was very late because The Disaster management Law has been existing since 2007.

The slow handling of disasters by related parties, is also a problem. There is no clear grand design of the Pangkalpinang City Government in handling disasters and post-flood disasters. Based on this background, the problem that will be examined in this article is "how is the disaster mitigation policy implemented by the Pangkalpinang City Government?".

2 THEORETICAL

Disaster is a serious disruption to the functioning of a community that causes widespread harm to human life in terms of material, economic or environmental and which exceeds the ability of the community to cope by using their own resources. (UNISDR, 2004). Coppola (2015) suggests that one phase in disaster management is mitigation or mitigation which is often also referred to as Disaster Risk Reduction (DRR). This stage includes efforts to reduce or eliminate the possibility and consequences of disaster threats to the community to a minimum level. This mitigation can take the form of structural and non-structural mitigation. Coppola states that structural mitigation is shown through several things, namely: the construction or altering of the physical environment, and may include resistant construction; building codes and regulatory measures; relocation; structural modification; construction of community shelters; barrier, deflection, or retention systems; detection systems; physical modification; treatment systems; and redundancy in life safety infrastructure

While non-structural mitigation includes several things, namely: modification of human behavior or natural processes without requiring the use of engineered structures, and includes regulatory measures, community awareness and education, warning systems, nonstructural physical modifications, environmental control, and behavioral modification.

Coppola also added several factors that need to be considered when carrying out disaster mitigation, namely: Political support; Public support; Support from the business sector; Support from nonprofit and interest groups; Cost; and Long-term versus short-term benefits

Further information on disaster mitigation was suggested by Simonovi' (2011). According to him, mitigation is a long-term plan that involves the process of identifying the vulnerability of each region to certain types of threats. Mitigation also

contains identification of steps that need to be taken to minimize the risk of possible disasters.

Analysis of the mitigation policies in this study uses the STAPLEE Method. The method is used to analyze disaster structural and non-structural disaster mitigation policies chosen by stakeholders. It includes the following aspects: Social, Technical, Administrative, Political, Legal, Economic, and Environmental (Coppola, 2015).

3 METHOD

This study uses qualitative methods with exploratory models (case studies). Data collection techniques used are through in-depth interviews, document studies, field observations, and discussions with experts. The documents reviewed and analyzed are various laws and regulations relating to the implementation of disaster management such as Law No. 24 of 2007, Babel Province Regional Regulation no. 4 of 2014. Meanwhile in-depth interviews with key informants as follows: 1. In-depth interview with the Head of the Regional Disaster Management Agency

2. Environmental NGO/Walhi Babel

3. Samples of residents in areas affected by floods.

Qualitative data analysis is carried out to explore phenomena (Creswell, 2014). Data is taken through in-depth interviews with key informants, document studies, and literature studies. The collected data is categorized, mapped, then analyzed qualitatively descriptive until conclusions are drawn on concrete about disaster mitigation policies in Pangkalpinang City. In addition, an overview of the spatial planning policy in Pangkalpinang City was obtained. Verification of all types of data obtained are carried out through the triangulation method..

4 RESULT AND DISCUSSION

The findings show that there are not many massive flood mitigation policies issued by the Pangkalpinang City Government until 2017. The main obstacles experienced by the Pangkalpinang City Government, especially the agency of disaster management are related to funding. The analysis uses the STAPLEE method from Coppola on the flood mitigation policies carried out by the City Government of Pangkalpinang as follows:

4.1 Structural Mitigation

The structural mitigation efforts that have been carried out referring to the STAPLEE Method should include the Technical and Environmental aspects, including:

1. Relocation

There is no relocation policy carried out by the City Government towards residents in areas prone to flooding.

2. Infrastructure development

This infrastructure development effort is constrained by funding. Structural mitigation such as the construction of embankments has not been carried out due to the limitations of the Regional Budget. Submissions will be made to the national budget for physical development so that in areas prone to flooding will be made barriers. Funds for activities owned by the Provincial budget based on the 2017 Amendment Budget are only 1.6 billion. This is still intended to fulfill facilities and infrastructures.

3. Structural modifications

There are not many efforts that have been made by the government. For example, only one effort is done. It was the river dredging which is assisted by CSR funds from PT Timah Tbk because it requires very large funds. Then the mangrove planting as one of the structural mitigation efforts, and the activities of the river and estuary clean for one week in Sungai Rangku were participated by 120 members of the Rapid Reaction Unit from Disaster Management Agency, Timah Company, as well as Army members, school students, and the society.

As Coppola said, disaster mitigation policies require several considerations when implemented, namely public support, support from the business sector (support from the private sector), support from nonprofit and interest groups, and costs. In term of the effort of structural modification carried out by the government agency, there has been support from the public, the private sector (PT Timah Tbk/National Tin Company), and other interest groups.

4.2 Non Structural Mitigation

Non-structural mitigation that has been done referring to the STAPLEE method includes the following:

1. Social

Many efforts to increase public awareness and behavioral modification have been carried out. For example, socializing disaster management by the agency. Programs to clean the river are also carried out with the aim of arousing public awareness.

Anyway, this is still lack of people response because there are still many people who continue to dispose of garbage in the river.

2. Administration

The City Government Agency routinely conducts coordination meetings with Provincial Agency once a month, also with National Board for Disaster Management, and other agencies in the city. One of the activities carried out was, for example, the Pangkalpinang City Disaster Management Coordination Meeting at the beginning of November 2017. The coordination meeting was aimed at equalizing the perception so that the roles and functions of all relevant parties could run optimally. Coordination Meeting was attended by Working Units in the scope of the Pangkalpinang City Government related to disasters, mass organizations and vertical agencies. The coordination meeting also successfully created a contingency plan for disaster management in Pangkalpinang City, and the formation of a rapid response team for disaster management.

Theoretically, disaster management policies carried out by the City Government by implementing such coordination meeting will uniform different perceptions. Then administratively, the Coordination Meeting will put the actual agency position in disaster management, which is still related to other agencies. As stipulated in local regulation number 18 of 2016, the Head of the Regional Disaster Management Agency on behalf of the Regional Secretary can provide instructions to all relevant agencies in the event of a disaster emergency. This will prevent the occurrence of sectoral egos between agencies in terms of disaster management. Administratively, various policies taken by Pangkalpinang City for example conducting routine coordination with National Board for Disaster Management in Jakarta have produced results. At the end of November to the beginning of December 2017, The Regional Disaster Management Agency finally received two rubber boats from National Board for Disaster Management.

This coordination activity needs to be carried out continuously so that there is no overlapping in conducting disaster mitigation. For example, in terms of structural modifications. According to The Regional Agency, it only prepares personnel for several activities due to some activities of river normalization have been done by the Public Work Services Agency.

3. Political

Mitigation policies conducted by The Regional Agency often clash politically. For example, the budget proposals are often not fully approved by the regional House of Representatives.

4. Environmental

The Regional Agency conducted an initial mapping survey of flood-prone areas, followed by making maps of vulnerable areas affected by floods. As Coppola said, one aspect that needs to be considered when issuing disaster mitigation policies is long term benefits or short term benefits. Mapping disaster-prone areas were conducted by 120 members of the Rapid Response Unit. It may cost a lot, but this will bring many long term benefits.

5. Legal

Based on the legal aspect, Some policies have been carried out by the The Agency. For example, keep on making approaches so that the agency operational needs can be legally accommodated in the Regional Budget. At the end of November 2017, the Pangkalpinang City Government had signed a memorandum of understanding regarding the allocation of the 2018 Regional Budget by 20 percent for disaster management. Even so, the 20 percent fund allocation is not only for The Agency but also spread to other agencies. Then, in the Coordination Meeting held by The Agency on November 2017, legally disaster management procedures have been prepared legally.

6. Economic

One of the disaster mitigation efforts carried out by The Regional Agency in economic aspect is inviting people to clean waterways and rivers. If there is a flood, it will have an economic impact on the community, namely the loss of property (property) and some people lose their livelihood. Then economically, another policy is to plant mangroves around Pasir Padi Beach. The economic benefits of mangroves can be felt by fishermen, namely the increasing amount of fish and other species. Besides, the economic benefits for the City Government itself. The coastal area becomes more beautiful, protected from abrasion so that it attracts people to come to the area. The output is an increase of Government income.

The Agency's Constraints

The main obstacle is funding. It affects the provision of facilities and infrastructures. The equipment owned by the agency is not enough.

Furthermore, The Regional Disaster Management Agency doesn't have its own building. The construction of The Agency building in the future will be funded by National Board for Disaster Management. While the land is provided by the City Government. Then the dissemination and simulation of disaster management activities are still rarely done due to limited funds. The program that will be carried out in the future is the fulfillment of facilities and infrastructures, training for officers to understand their duties and functions, as well as purchasing operational tools.

Regarding the mitigation policy carried out by The Regional Disaster Management Agency, the NGO Wahana Lingkungan Hidup said that The City Government of Pangkalpinang had begun to make a move in mitigating the frequent floods in Pangkalpinang. The provincial government also began to conduct studies both in private and by collaborating with NGOs in Bangka Belitung Province by sharing damage data up to conducting Focus Group Discussions (FGD) with relevant agencies and NGOs that focus on moving towards paying attention to the environment. Declaring the government in terms of realignment of buildings around the downstream watershed will be one of the government's initial experiments in overcoming flood problems in Bangka Belitung, especially in the City of Pangkalpinang. However, it is not enough to pay attention to the downstream, the government should begin to pay more attention to the upstream area of the river. It began to be damaged due to tin mining and other mining activities. At present, the Provincial Government also seems to have begun to pay attention to the damage in Mangkol Hill due to deforestation, and began holding FGDs in response to this to determine the policy base within the scope of the initial Strategic Environmental Study.

The policy also does not involve the broad participation of affected communities in terms of disaster mitigation. The NGO assessed that the policies of the regional government were not yet effective. The progress of this policy was also considered not transparent in terms of accountability. Regarding the main causes of flooding in Pangkalpinang City, it said that the floods in Pangkalpinang City were mostly caused by damage to the watershed in the City of Pangkalpinang. There are a number of things that have caused the watershed to be damaged, starting from the wrong city arrangement where the construction of buildings is in the watershed which results in a lack of water catchment areas, to the rise of mining activities both upstream and downstream

which result in sedimentation disruption of river flow and absorption. The ideal policy to prevent repeated floods in Pangkalpinang City is that there must be comprehensive studies related to water catchment areas in Pangkalpinang. The city layout must be connected with this matter. Construction of facilities or buildings that only focus on business motives must also be reduced. Finally, in upstream areas, mining activities must be prohibited because they have caused systematic destruction such as flooding and siltation of river flows.

5. CONCLUSION

The conclusion of this study is that the disaster mitigation policy carried out by The Regional Disaster Management Agency in Pangkalpinang City includes structural and non-structural mitigation. Some positive things that have been implemented related to mitigation policies are social aspects, administration, environmental, structural modifications, legal aspect, economics aspect. Nevertheless, the various policies have not been maximally carried out due to budget, social, and political constraints.

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