

## ***Sub Theme: Disaster Mitigation in the Society 5.0***

# **The Complexity of Abrasion Disaster Mitigation on Rupert Island**

**Dadang Mashur, Geovani Meiwanda<sup>1</sup>, Khairul Amri, Mayarni**

<sup>1</sup>Study Program Public Administration, Faculty of Social and Political Sciences, Universitas Riau

(email: geovani.meiwanda@lecturer.unri.ac.id)

### **Abstract**

Abrasion disasters and environmental issues are strategic issues that are widely studied from various study perspectives, this article is the result of research conducted by researchers from the perspective of public administration. The Abrasion Disaster on Rupert Island is a disaster that can cause various social and economic impacts on the community. In 2019, the abrasion rate on Rupert Island reached 6-8 meters. Rupert Island is also one of the outer islands of Indonesia which borders with neighbouring countries, namely Malaysia and is included in the National Tourism Strategic Area (KSPN). Therefore, the abrasion disaster that occurred on Rupert Island, Bengkalis Regency must be managed in order to minimize the impact of the abrasion disaster that occurred. Abrasion disaster management can be done one of them by means of abrasion disaster management or efforts made to regulate the reduction of abrasion disaster risk. The purpose research is to know abrasion disaster management actors in Rupert Bengkalis and determine what course the limitations in disaster management abrasion in Rupert Bengkalis. This type of research is qualitative research using data collection methods through interviews and documentation. The findings in this study is that the management effort abrasion disaster in Rupert actor countermeasures abrasion in Rupert not maximized This is caused by things still are limitations in disaster management is done. The value in this study is that disaster management actors at the regional and central levels cooperate with each other in order to maximize disaster management efforts

### **Keywords:**

disaster mitigation; abrasion disaster; disaster management; risk reduction

### **Introduction**

Rupert Island is the outermost island in Riau Province, with a strategic coastal area because it is directly opposite neighboring Malaysia. On the other hand, Rupert Island forces the local government and the central government to have extra attention, this is because, it is a critical coastal area because it is eroded by abrasion every year. (Rahmat Hidayat, 2014). The uniqueness of Rupert Island is the National Coastal Strategic Area (KSPN) which

experiences severe abrasion every year, but quantitatively in 2019 the length of abrasion on Rupert Island reached 6 -8 meters. (BWSS III Pekanbaru, 2021).

Abrasion is a natural disaster that requires special, serious and appropriate attention by the local government and also the central government because the abrasion disaster on Rupert Island has a socio-economic impact on the community. (Rahmat Hidayat, 2014). The social and economic impact of abrasion, ideally, requires special attention from the local government by seeking appropriate abrasion disaster management according to the characteristics of the abrasion that occurred on Rupert Island.

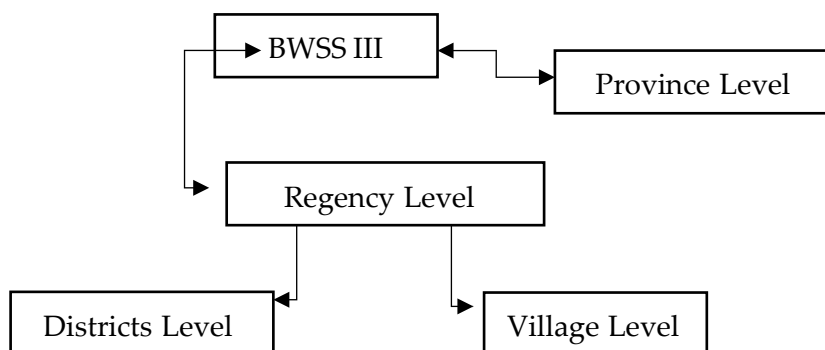
Disaster management is an effort to minimize the impact of a disaster that is supported by planning before the disaster occurs, when a disaster occurs or after a disaster (Soehatman, Ramli 2010). This impact reduction is carried out by disaster management actors starting before the disaster occurs, is happening and after the disaster occurs. Disaster management is carried out with a pattern of structural development and non-structural development. The construction of structures and non-structural developments is the result of the coordination process between actors in the management of abrasion disasters. (Soehatman, Ramli 2010).

Rupert Island is included in the Strategic Development Area (WPS). Ensuring regional-based infrastructure with strategic development is the task of the Ministry of Public Works and Public Housing (PUPR) through the Regional Infrastructure Agency (BPIW) regulated in Presidential Regulation No. 15 of 2015.

The Sumatra River Region III (BWSS III) Pekanbaru City is a representative of the Ministry of Public Works and Public Housing (PUPR) at the provincial level, tasked with handling abrasion disasters on Rupert Island. BWSS III carries out abrasion disaster management, through coordination between actors in the Village to related Regional Apparatus Organizations.

Figure 1.

**Roles of coordination of actors for Abrasion in Rupert Island**



Based on Figure I, it can be seen that the ideal coordination pattern must be carried out in the abrasion disaster coordination pattern. however, the complexity of planning and realization as well as the focus of development needs are limitations. collaboration at the district government level, namely the Bengkalis Regency BAPPEDA, the Bengkalis Regency Environmental Service and the PUPR Office. At the district government level, it is also acknowledged that currently the Bengkalis Regency, especially on Rupert Island, Bengkalis Island and several sub-districts located in mainland Riau, are under construction, and it is impossible to focus solely on abrasion. high-cost abrasion management, while the district is still fixing its infrastructure, personnel expenditures and other development sectors. This article will show the complexity of abrasion disaster management on Rupert Island. Abrasion disasters are different from disasters in Riau Province such as the Haze. The complexity that arises between development priorities, communication between actors and classic problems in the budget becomes the grassroots in the abrasion disaster. on the other hand, the higher the abrasion especially the peat soil structure.

**Methods**

Through qualitative research methods, by examining the condition of objects naturally and emphasizing research results on the meaning of the actual data (Sugiyono, 2014). Primary and secondary data were obtained through interviews, observation and documentation. The primary and secondary data were analyzed using the Interactive Analysis Model system. This analysis system starts from data collection, data reduction, data presentation and conclusion drawing.

The author involves all the actors in Figure I, as the primary data source and a number of secondary data obtained from the actors in the abrasion disaster management. there are some limitations of the author in terms of analysis, a number of invalid data because the budget posture of each actor is different. and the non-disclosure of the exposure of each actor related to their respective functions, this has not yet reached the pattern of coordination carried out.

## **Results and Discussion**

The complexity of abrasion disaster management is of particular concern, in this article. This article is the result of research related to abrasion disaster management in Bengkalis Regency, namely Rupat Island. begins by looking at the abrasion disaster mitigation that has been carried out. Usually, if a disaster occurs, it will be the responsibility of the regional disaster management agency (BPBD Bengkalis Regency). Abrasion disaster, is not a disaster with human victims, but human life in the future will be very influential. and BPBD is not the central actor for Abrasion Disasters like disasters in general.

There are three stages in disaster management that should be fulfilled, such as the first stage, namely before a disaster occurs in the form of preparedness, mitigation and early warning. The second stage is when a disaster occurs and the third stage is post-disaster by conducting rehabilitation and reconstruction (Soehatman, Ramli 2010). The ideal disaster management is to prepare a layout for these three stages, but as in the previous paragraph, abrasion disaster management is different from other disasters. regardless of the stage of a disaster, interpreting an abrasion event is certainly very difficult to interpret because it occurs naturally.

The number of agencies which means multi-actor plays a very important role here, and the key point in the management of abrasion disaster is very heavy on the disaster mitigation department. In the pre-disaster stage, BWSS III mostly carried out preparedness actions. Preparedness stages such as collecting secondary data by BWSS III in coordination with the sub-district and village parties, related to the abrasion that occurred. Community characteristics certainly affect the rate of abrasion, especially if Mangrove plants do not support it naturally.

In general, coastal structures in Riau have the characteristics of peatlands. Abrasion

that occurs on peatlands is much faster than on non-peat soils. Based on the data, the eastern coast of Rupert Island is directly opposite the Malacca Strait. Every year there is an abrasion of 2-3 meters per year (BWSSS III, 2021). Geographically, it is also facing the South China Sea, which allows currents for natural abrasion to occur.

Abrasion disaster mitigation, carried out to minimize the impact of abrasion disaster. Abrasion Disaster Mitigation is carried out by BWSSS III Pekanbaru City, the most basic stage is protecting the coast. Coastal protection is carried out by, based on recommendations from the sub-district and village government. The form of coordination carried out in mitigating the abrasion disaster was carried out by BWSSS III Pekanbaru City through Vertical coordination with the Ministry of Public Works and Public Housing (PUPR). Horizontal communication is carried out with local government to village levels.

Budget-based planning is very important and has the power to be carried out with a pattern of vertical coordination between actors. Coordination is carried out vertically between the central and regional governments, this is because it is realized that in carrying out abrasion disaster mitigation it requires large costs. for the last eight years for the prevention or mitigation of abrasion disasters that have been carried out have spent Rp. 326,575,506,736,. Rupert Island administratively has two sub-districts, from these two sub-districts there are 9 coasts with critical categories for abrasion achievement.

The construction that has been built in an effort to mitigate the disaster, which also indirectly becomes the rehabilitation stage for the abrasion disaster in Rupert Island and Bengkalis Regency as a whole. the following data obtained from BWSSS III Pekanbaru City.

**Table 1.**

**Construction Abrasion Disaster Mitigation**

<b>No</b>	<b>Construction</b>	<b>Description</b>
1	Break Water from Stones	1. As a breakwater. Naturally helps in strengthening Mangrove plants. Because Mangroves are natural plants that are able to prevent or slowdown abrasion
2	Sedimentation	2. Sedimentation is carried out in the form of planting mangroves, planting that is carried out intentionally to fill breakwaters and form natural mitigation patterns from coastal plants.

*Source: Bengkalis Regency Government, 2021*

The first construction, namely the breakwater, is very expensive. especially abrasion occurs almost along the coast.

Horizontal coordination carried out by local governments is realized in the form of preventive activities only. Because, abrasion disaster mitigation requires action with careful planning and preparation in line with regional development. The limitations of the regional budget and indeed the situation in the area in Bengkalis Regency is in dire need of attention.

Horizontal coordination carried out by local governments is realized in the form of preventive activities only. Because, abrasion disaster mitigation requires action with careful planning and preparation in line with regional development. The limitations of the regional budget and indeed the situation in the area in Bengkalis Regency is in dire need of attention. The abrasion disaster mitigation pattern that is carried out is by bit by bit. A number of proposals submitted cannot be carried out directly, so they are carried out partially. the effect is that the abrasion continues, but of course it is not in accordance with the current planning and abrasion conditions.

## **Conclusion**

Abrasion Disaster Mitigation, in Bengkalis Island is very complex in terms of the need for critical land that has been eroded very widely. The dependence of the vertical coordination pattern is very high, but of course Rupa Island is not the main focus of the central government. The local government does not make abrasion disaster mitigation the main focus, because the district government's development priority is in infrastructure development. the mitigation efforts carried out require high costs, and have not presented the right mitigation pattern because they are carried out partially while the rate of abrasion increases every year.

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