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Community Participation in Handling Coastal Abrasion in Bengkalis Regency, Indonesia

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ABSTRACT

Abrasion is a natural process of soil erosion caused by destructive waves and ocean currents in coastal areas, particularly in the Bengkalis Regency. Abrasion harms the environment and the economy of those who rely on plantation products. This study aims to discover how the community can help the Bengkalis Regency government prevent abrasion by managing the marine coastal environment. Methodology qualitative with a case study approach was used to respond to the problems observed in the regency area. It is required because the environment is a source of the community's economic, social, and cultural life. This study employed Oakley's community empowerment theory, which includes contribution, organization, and the community's role, action, motivation, and responsibility. This study's findings revealed a lack of full community participation in government programs addressing coastal abrasion in the Bengkalis Regency.

Keywords: Abrasion, Community Participation, Government

1. INTRODUCTION

Indonesia consists of five large islands and thousands of smaller islands stretching from Sabang to Merauke. Due to this, Indonesia's geographical environment maintains many natural possibilities not found in other countries. For example, Indonesia's natural marine potential includes abundant fish populations, coral reefs, aquatic plants, minerals, energy and other resources. The utilization of the potential of the sea is, unfortunately, not directly proportional to the management of the surrounding environment. Many coastal areas in Indonesia are experiencing soil erosion or what is more often called abrasion. Abrasion is a process where coastal erosion occurs caused by the power of ocean waves and ocean currents that are destructive, and shoreline damage

is caused by the disruption of the natural balance in the coastal area [1]

Various surveys have proven that there are at least 5 (five) factors that cause abrasion caused by human hands (anthropogenic) driving shoreline changes, namely [2]:

1. The capture of longshore sediment transport is caused by artificial structures such as groins, jetties, harbor breakwaters, and reclamation parallel to the shoreline.
2. In addition, there are buildings along the coastline that cause changes in currents.
3. The existence of sand mining activities and the construction of dams on the upstream and downstream sides of the river, namely the transfer of river currents.

4. Current patterns and breaking waves are due to sand mining activities around coastal waters.
5. Illegal activities include logging mangrove forests and taking coral reefs as natural coastal protection materials.

Society is also a significant factor in the occurrence of abrasion. It is characterized by activities by coastal settlements that do not consider the state of the coastal environment, fishing communities in coastal areas, and the construction of public facilities close to the coast. As a result, if coastal abrasion continues, it will have a reasonably worrying impact on the people living in the area around the coast.

Community participation is essential in saving environmental damage due to sea abrasion, as has been explained by Law Number 23 of 1997 Chapter III article 5 concerning the rights, obligations, and roles of the community in managing the environment:

1. Everyone has the same right to a good and healthy environment.
2. Furthermore, everyone has the right to environmental information about their role in environmental management.
3. Finally, everyone has the right to play a role in environmental management through applicable laws and regulations.

One area in Indonesia that requires community participation in handling the impact of abrasion on the sea coast is Bengkalis Island in Bengkalis Regency. It was recorded that in the last 2021, there had been abrasion on Bengkalis Island with an average abrasion rate of 59 ha/year. It shows that Bengkalis Island has experienced a significant reduction in land area, namely an average of 42.5 ha/year. Critical beaches with high abrasion rates should be

addressed immediately, so that abrasion events do not occur again.

However, unfortunately, the participation and active role of the surrounding community has not yet been felt in managing the coastal environment. It can be seen through the data obtained, namely the absence of initiatives from the community to handle abrasion independently.

2. RESEARCH METHOD

We used qualitative research with case study research that aims to explore a particular case in greater depth by collecting various sources of information. Creswell defines a case study as an exploration of bounded systems or issues. A point is interesting to study because of the distinctive features of the case that have meaning for other people, at least for the researcher.

3. LITERATURE STUDY

3.1 *Community Participation Concept*

Community participation can be interpreted as individual involvement without coercion and active participation in social interactions under certain conditions. With the same intention, a person can participate if he finds himself with or in a group through various processes of sharing with others regarding values, traditions, feelings, loyalty, obedience, and shared responsibility [3].

Participation is a significant point often used as the initial foundation for someone to take action. These actions will undoubtedly have consequences that impact the conditions around them. Community participation can be interpreted as each individual's involvement in creating an actual situation of his existence in his environment.

The community, as an essential part of environmental management, especially regarding

the problem of abrasion, will undoubtedly have an impact on the environment. The influence caused by the community can be direct or indirect. As a group of individuals who inhabit a territory, they will see, feel, and create an environmental atmosphere following their wishes. This desire concerns community action towards good environmental management.

Community participation is in identifying problems and potentials in the community, selecting and making decisions about alternative solutions to deal with issues, implementing efforts to overcome difficulties, and community involvement in evaluating problems that occur [4]. This thinking is why the community needs to be involved in environmental management.

There are five indicators of community participation according to Oakley [5]: (1) Contribution, (2) Organizing, (3) Community role and community action, (4) Community motivation, and (5) Community responsibility.

The community can provide several types of participation: material participation, property participation, labor participation, skills participation, brain participation, social participation, participation in decision-making processes, and representative participation [6]

Second, material donations are accepted as forms of participation. Third, there is support participation. Fourth, involvement in the decision-making process. Fourth, involvement in the decision-making process. Fifth representative participation by giving trust and mandate to representatives who sit in organizations or committees [7].

The opinion of Cohen and Uphoff in Dwiningrum provides differences in participation into four groups, namely involvement in decision-

making, participation in implementation, participation in benefit-taking, and participation in evaluation. First participation in decision making. This participation is related to making choices in mutual agreement with the community regarding ideas concerning common interests. The first form of community participation can be exemplified by various activities such as attendance at deliberation and discussions and providing constructive criticism and suggestions. Second, involvement in implementing a program includes mobilizing resources, funds, administrative actions, coordination, and program elaboration.

Third, participation in welfare programs. Participation involves a person, mentally and emotionally, responding to an activity from the outcome of program implementation in quantity and quality. Performance improvements were qualitatively evident and outweighed the importance of program success rates. Fourth, participation in evaluation. Community participation in this evaluation is related to the problem of implementing the program as a whole. This participation aims to determine the achievement of the previously planned program [8].

So overall, we concluded that community participation is a significant part of handling coastal sea abrasion in the Bengkalis Regency. Active community participation can help the government make better management decisions because the community comprises individuals closest to their environment.

3.2 Abrasion Concept

Abrasion is one of the environmental problems which, from year to year, continues to have an increasing ecological impact; therefore, research on the object of this abrasion is fundamental to do.

Abrasion or erosion damages the shoreline due to the release of coastal material, such as sand or clay, continuously being hit by ocean waves, changes in the balance of sediment transport in coastal waters, or loss of land in coastal areas. At the same time, accretion or sedimentation is the emergence of land [9].

Walters Bradley et al. (2008) and Nagelkerken et al. (2008), the Mangrove forest is an ecosystem that has essential ecological functions [10]. In addition, Lacerda (2002) states that ecologically, the parts and benefits of mangrove forests are as a buffer area for intrusion or seawater intrusion, as a wave barrier, preventing abrasion, and as a sediment trap and storm windbreak [11].

In managing coastal land for mangrove rehabilitation, it is directed to have a positive impact on activities and the continuity of community social interactions. Protecting coastal areas from the threat of abrasion and rehabilitating mangrove forest functions can provide business opportunities and economic opportunities for coastal communities so that people can carry out activities properly and social interaction can occur properly. Human relations occur in an ecological community; human ties can happen well in environmental conditions supporting human survival. Adequacy Space in coastal areas can be helpful in various community activities such as playing, exercising, developing businesses, and other community activities [12].

The natural and human factors above cause abrasion in the coastal area. Abrasion disasters cannot be allowed to continue by the government or the surrounding community because the impact of abrasion is very major, such as [13]:

1. There has been a decrease in the population in areas affected by abrasion caused by damage and even loss (permanent

inundation) of the original residential areas of the people on the coast.

2. The socio-economic changes of the people who used to make a living in the agricultural and aquaculture sectors to work in other fields decreased income.
3. The culture of the people thick with marine life changes with the occurrence of sea abrasion.
4. The surrounding community is forbidden from inhabiting the abrasion area, even though their lineage has been living there for a long time

And concluded that abrasion is a problem of environmental damage that has a significant impact on the natural environment of the sector. Continuous abrasion can cause a decrease in the land as a place for people to live. So massive handling of this problem is needed.

4. DISCUSSION

In this study, researchers used indicators of community participation according to Oakley, namely:

1. There is a contribution
2. There is organization
3. Community roles and community action
4. Community motivation
5. Community responsibility

Researchers use this indicator because it is considered the most appropriate to solve the problem of **community participation in handling coastal abrasion in the Bengkalis Regency**.

4.1 Contribution

Contributions in various forms, such as funds, programs, ideas, and energy given to other parties to achieve something better and more efficient.

Findings show that the coastal regency's contribution to coastal management is reflected in community participation in the activities of government organizations, such as planting mangrove seedlings along the coast. However, communities are not directly involved in mangrove management decision-making and cannot express their hopes or complaints about the effects of mangrove degradation. The impact of abrasion is alarming to the communities who depend on marine products for their livelihoods and many people who experience damage to agricultural land due to abrasion. Contribution indicators are related to management of marine coastal wear in Bengkalis regency.

4.2 There is an Organization

Organization or organizing is a collection of individual groups of people who work together in the role of their respective functions in achieving common goals.

Organizing in handling marine coastal abrasion in Bengkalis Regency Through the Environmental Agency, it has duties and functions in terms of socialization and guidance to provide understanding to the community in terms of tackling abrasion.

In conducting guidance and socialization to the community, the Environment Agency first collects data on community groups who care about the coastal environment so that the goals and objectives of the training are more precise and run well.

Mangrove management groups are provided with guidance regarding nurseries and nurseries to the process of planting mangrove seedlings in coastal locations both on the coastline and coastal borders. Equipment assistance is also offered to support community work motivation to increase awareness of the availability and

sustainability of natural resources (SDA) in the coastal environment.

The handling of coastal abrasion for the people of Bengkalis Regency has gone well with the guidance of the Bengkalis Regency government through the Environmental Service.

4.3 Community Roles and Community Action

Role Community participation is a type of active community participation in dealing with coastal abrasion. This participation is ongoing, from planning and implementation to supervision. However, the reality of the study sites suggests that community involvement cannot be fully characterized as positive, because local governments do not engage communities in abrasion management programs. In order to accelerate abrasion management, the local government Bengkalis regency should share its role in environmental management and monitoring with the community. Community concern is the primary capital required to voluntarily take specific steps or actions to maintain and preserve environmental functions directly related to their own business or the efforts of their fellow citizens.

4.4 Community Motivation

Motives are the desires and driving forces that a person needs, consciously or unconsciously, to act with a particular goal in mind. The motivation of Bengkalis people to clean up marine coastal debris is not seen in independent cleanup activities. Community participation in treatment programs is based solely on activities planned by the Benkali district government. When it came to contributing ideas and taking direct action, we didn't see much community enthusiasm for the effort. Community motivation is essential to enable people to manage their environment independently without government directives.

4.5 Community Responsibility

The awareness of a person performing an act and willingness to accept the risk associated with the show is defined as responsibility. Finally, responsibility entails recognizing those who are willing to take risks and remembering commitments that must be fulfilled. Responsibility, as opposed to motivation, is an obligation that is inherent in a person's actions. According to Article 67 of Law Number 32 of 2009 Environmental Protection and Management, every member of the community is required to participate in maintenance and conservation activities, as well as to control pollution and destruction through active monitoring of both the planning and implementation stages, as well as the life of the environmental assessment. With this participation, community members take on a strong responsibility to address ecological issues collaboratively and work towards the success of environmental management activities.

5. CONCLUSION

Community participation in handling coastal abrasion in Bengkalis Regency is related to the contribution, organization, community role, community action, community motivation, and community responsibility are very important for the abrasion management program's success in the local government program. For this reason, public awareness is needed independently by making the environment a unit of people's lives so that it needs to be monitored and maintained.

AUTHORS' CONTRIBUTIONS

This Article Can Be Used As Input Material For The Government Of Bengkalis Regency To Improve Community Participation In Abrasion Reduction.

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