

COLLABORATIVE GOVERNANCE IN HANDLING COASTAL ABRASION BASED ON BLUE ECONOMY

COLLABORATIVE GOVERNANCE DALAM PENANGANAN ABRASI PANTAI BERBASIS BLUE ECONOMY

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ABSTRACT

Indonesia is a country that has thousands of islands stretching from west to east. This causes the wealth of marine resources owned by the State of Indonesia. Unfortunately, many islands in Indonesia have experienced environmental damage due to abrasion. Abrasion has a destructive impact on the coastal environment where people live. The impacts felt are not only from an ecological perspective but also impact the economy and socio-culture of the surrounding community. This study aims to analyze and describe the implementation of collaborative governance based on the dynamics of collaboration, collaborative actions, and the impact of adaptation on the collaboration process in handling coastal abrasion on Bengkalis Island. The method used in this study is a qualitative method with a descriptive type, meaning that the research conducted describes the entirety of the phenomena found and involves several people as informants. The data sources used in this method are observation, interviews, and research documentation. This study found that collaborative governance in handling abrasion still has various dynamics between collaborators, which makes the handling process slow.

Key words: Abrasion; Blue Economy; Collaborative Governance; Coastal Abrasion; Government

ABSTRAK

Indonesia merupakan negara yang memiliki ribuan pulau yang membentang dari barat hingga timur. Hal tersebut menyebabkan kekayaan sumber daya laut yang dimiliki oleh Negara Indonesia. Sayangnya, banyak pulau di Indonesia yang mengalami kerusakan lingkungan akibat abrasi. Abrasi memberikan dampak yang merusak bagi lingkungan pesisir tempat tinggal masyarakat. Dampak yang dirasakan tidak hanya dari segi ekologi tetapi juga berdampak pada ekonomi dan sosial budaya masyarakat sekitar. Penelitian ini bertujuan untuk menganalisis dan mendeskripsikan implementasi tata kelola kolaboratif berbasis dinamika kolaborasi, aksi kolaboratif, dan dampak adaptasi terhadap proses kolaborasi dalam penanganan abrasi pantai di Pulau Bengkalis. Metode yang digunakan dalam penelitian ini adalah metode kualitatif dengan tipe deskriptif, artinya penelitian yang dilakukan menggambarkan keseluruhan fenomena yang ditemukan dan melibatkan beberapa orang sebagai informan. Sumber data yang digunakan dalam metode ini adalah observasi, wawancara, dan dokumentasi penelitian. Penelitian ini menemukan bahwa tata kelola kolaboratif dalam penanganan abrasi masih memiliki berbagai dinamika antar kolaborator, yang membuat proses penanganan menjadi lambat.

Kata Kunci: Collaborative Governance; Abrasi; Abrasi pantai; Pemerintah; Ekonomi Baru

INTRODUCTION

Indonesia consists of five large islands and thousands of small islands from Sabang to Merauke along the territory. This is what causes the geographical environment of Indonesia to store many natural potentials that are not possessed by other countries. The natural marine potential possessed by Indonesia includes the wealth of fish population species, coral reefs, marine plants, minerals, energy, and so on.

The biological wealth of Indonesia must be developed systematically and in synergy with the central government, local governments, the community, and the private sector so that it can be utilized optimally. The potential of the sea is a special attraction for Indonesia that is not possessed by other countries. The vastness of the Indonesian ocean causes the existing marine potentials to have their own uniqueness. Most coastal communities utilize the potential of the sea to support their economic life through marine products. Even this marine potential is also utilized in export activities abroad, which, of course, have a high selling price.

The utilization of marine potential is unfortunately not directly proportional to the management of the surrounding environment, which is indicated by the fact that many coastal areas in Indonesia experience land erosion or what is more often called abrasion. (Purbani et al., 2019) said that abrasion is a process in which coastal erosion occurs due to the impact of destructive ocean waves and ocean currents and damage to the coastline due to disruption of the natural balance in the coastal area.

Abrasion is an event of land erosion due to the continuous impact of ocean waves. The factors causing abrasion can be natural and human. Natural factors are caused by hydromania or wave movement patterns (Seva et al., 2022), coastal morphology (Mutmainah, 2022), current patterns often changing, and wind and tidal phenomena. Human factors are caused by sand mining (Asmal et al., 2024), the destruction of mangrove forests, the illegal mining of coral reefs, illegal ponds, etc. The impacts caused by abrasion are very numerous and detrimental to humans, such as the loss of coastal

settlements of residents (Kurnia & Nugroho, 2018), damage to community plantations, and reduced catches of local fishermen. One of the efforts that can be made is through mangrove conservation (Indarsih & Masruri, 2019), making wave breaker stones (Kurnia & Nugroho, 2018), and no less important is government collaboration through good environmental governance.

The idea of collaborative governance for public services involving government and the public sector has been a policy and academic concern for decades (Ansell & Gash, 2008; Boyer et al., 2016; Cheng, 2019; Emerson et al., 2012; Maiolini et al., 2023; Mosley & Wong, 2021). This means that collaborative governance is a big idea that can be implemented to increase the involvement of many parties in solving government problems. One of them is supporting world policies adopted by maritime countries such as our country, Indonesia, namely the blue economy. The blue economy emerged as a new concept for sustainable development in the marine sector along with the green economy, leading up to and since the Rio+20 Sustainable Development Conference in 2012 (Keen et al., 2018; Silver et al., 2015; Winder & Le Heron, 2017). This is particularly championed by Small Island Developing States (SIDS), which have increased attention to the contribution of coastal areas and oceans to sustainable development (Voyer et al., 2022). Although the definition and scope of the blue economy have been the subject of debate among policymakers and experts (Barbesgaard, 2018; Bennett & Satterfield, 2018; Croft et al., 2024; Ehlers, 2016; Foley & Mather, 2019; Jentoft et al., 2022; Keen et al., 2018; Knol-Kauffman et al., 2023; Knott & Neis, 2017; Owusu et al., 2023; Silver et al., 2015; Voyer et al., 2022), the growing interest in the blue economy as a framework for ocean governance and investment is attracting new actors to engage in development and the environment (Sumaila et al., 2021; Wabnitz & Blasiak, 2019). This causes the Sustainable Development Goals (SDGs) to be achieved (Benzaken et al., 2024).

Bengkalis Island is one of the islands included in the category of small and outermost islands in Indonesia. This is because Bengkalis Island's position is quite strategic. After all, it faces Malaysia directly.

For this reason, the abrasion conditions that occur on this island should receive serious attention from all government sectors. Bengkalis Regency has a very diverse vulnerability regarding the level of damage to the coastline, which can be seen from 3 (three) levels: low, medium, and high. Low level is marked by an abrasion rate of less than 3 meters per year, medium level for an abrasion rate of 3 meters to less than 5 meters per year, and a high level for an abrasion rate per year above 5 meters per year. This level of damage determines the priority areas that the local government must act on the most quickly so that the damage does not have a more significant impact on the coastal environment. The north coast of Bengkalis is the coastline that has experienced the most damage because, geographically, it is directly opposite the Malacca Strait, which is the outermost border coastline that borders directly with neighboring Malaysia.

For more clarity regarding the potential for high-level abrasion vulnerability, see the following table:

Table 1. Abrasion conditions in Bengkalis district

N o	Location	Sub district	Long coastline affected by abrasion (m)	Abrasion Rate per year (m)
1	Muntai Village	Bantan	7.0 00	7
2	Simpang Ayam Village	Bengkalis	6.0 00	7
3	Pambang Village	Bantan	4.0 00	7
4	Sepahat Village	Bukit Batu	4.5 00	6
5	Tenggayun Village	Bukit Batu	3.0 00	5,5
6	Tengah Village	Rupat	2.0 00	5,5
7	Sungai Injap	Rupat	500	5,5
8	Jangkang Village	Bantan	5.0 00	5
9	Pasir Putih Village	Rupat Utara	4.0 00	5

Source : Bengkalis Regency Environmental Service, 2024

The problem of this study is how the implementation of collaborative governance is seen from the dynamics of collaboration, collaborative actions, and the impact of adaptation on the collaboration process in handling abrasion on Bengkalis Island. In answering the formulation of the problem above, the proposer uses a problem-solving approach using the theory of (Emerson et al., 2012), namely using indicators of collaboration dynamics, collaborative actions, and the impact of adaptation on the collaboration process in handling coastal abrasion on Bengkalis Island.

Sudi Fahmi (2011), with a study entitled "The Principle of State Responsibility as the Basis for Implementing Environmental Protection and Management," tried to describe the research theme through a juridical-normative method. The study results show that the principle of state responsibility is a basis for implementing environmental protection and management, and it has three meanings. First, from the present generation to future generations, it is justified to make maximum use of the natural resources owned to achieve the welfare and quality of life of the people guaranteed by the state. Second, the state has guaranteed a healthy and suitable living environment for citizens. Third, the state will prevent all forms of resource exploitation activities that can create pollution and/or environmental damage.

The study is entitled "Abrasion Problems in Coastal Areas of Indramayu Regency." This study successfully concluded that two types of handling can be done to overcome abrasion: structural and non-structural. Structural handling can be done by vegetative abrasion handling, namely by planting coastal protection trees such as Waru mangroves and pandan plants. The physical handling of abrasion by building abrasion control structures, retaining or breaking sea waves, and directing flow. The next step through non-structural handling is to create and use various blood regulations regarding coastal boundaries and, no less importantly, provide counseling and socializing to the community, especially those on the coast, to maintain environmental sustainability (Prawiradisastra, 2003).

Journal title "Disaster Governance: Abrasion Disaster in Rangsang Pesisir District, Meranti Islands Regency". Conducting research using qualitative methods and obtaining results, namely that several obstacles are problems in the management of abrasion disasters in Rangsang Pesisir District which cannot run optimally, namely the limited funds for disaster risk reduction investment, authority, regional conditions, and lack of planning in disaster mitigation (fitriani 2021).

MATERIALS AND METHODS

The method used in this study is a qualitative method with a descriptive type, meaning it is a research design used to answer questions such as who, what, and when a phenomenon or experience occurs. The informants in this study were the head of the Bengkalis Regency Environmental Service, the Bengkalis Regency Regional Disaster Management Agency and the Bengkalis Regency Coastal Community. This method uses several stages, namely the pre-introduction stage, the field stage, and the data processing stage. The pre-introduction stage is carried out through the first step, namely ensuring that the theme follows the field conditions by identifying the problem. The second step is to conduct an exploration so that researchers can assess the feasibility of the field in terms of circumstances, situations, backgrounds, and contexts to prepare the required instruments.

The field stage begins by selecting and using informants/sources/participants. Informants or participants are people who participate in the research setting. These informants will later help researchers integrate with the community and become sources of information. The fourth step is collecting data in the field by conducting triangulation. This means checking data from various sources found in the field. The fifth step is recording data in the field. While in the field, researchers will look for data or information in various ways, such as interviews, observations, and document studies. Thus, researchers must always record information so that it is not lost. The output of this stage is primary data and secondary data with indicators of primary

data achievement, and secondary data can be used as research instruments.

The data processing stage begins with the first step, namely reducing the data that has been collected, which must be written in the form of a detailed report. The written report is arranged according to the data obtained, reduced, summarized, and the main points selected, and it is focused on the important things. The data obtained will be sorted and selected based on similarities in concepts, themes, and categories, providing a more concentrated description of the results of their observations. It will also make it easier for researchers to find data again in addition to the previous data obtained if needed. The second step is data display. The data obtained by researchers is grouped according to the formulation of the problem and arranged in a matrix form so that it is easier for researchers to see the patterns of relationships between existing data. The third step is data analysis to obtain the research the researchers conducted. Data analysis is an effort to describe the form of research conducted into parts so that the composition or form of something described is visible and its meaning can be captured.

The fourth step is the description and results of the research. Description of research results is an exposition or description that is structured based on data obtained from the field that has been processed in advance. Research results are made systematically and rationally in narratives by involving the perspective of knowledge possessed by researchers that are based on experience, expertise/profession, and views related to their beliefs in life.

The fifth step is conclusion and verification. Data conclusion is a follow-up activity after data reduction and presentation activities. The conclusions obtained in the initial stage are less clear. In order to be more precise and more definite, the next stage will be carried out. Temporary conclusions need to be verified. This verification technique is called testing the validity of the research. The sixth step is the conclusion. The conclusion is obtained based on the temporary conclusions that have been verified. The conclusion is obtained after data collection is complete.

RESULTS AND DISCUSSION

In this section, the answers to the research questions regarding Collaborative Governance in Handling Coastal Abrasion Based on the Blue Economy on Bengkalis Island will be explained in full. The study's results were collected based on observations by researchers and interviews with informants related to the study linked to the theory of governance. The elements are Collaboration dynamics, Collaborative actions, The impact of adaptation on the collaboration process in handling coastal abrasion on Bengkalis Island.

3.1. Collaboration dynamics

The dynamics of collaboration in handling abrasion on Bengkalis Island can be seen based on the involvement of various elements in handling abrasion, from the central to the village level. Institutions and institutions that collaborate in handling abrasion in Bengkalis Regency consist of:

1. The Environmental Service with its role and policies in managing policies
2. The Public Works and Spatial Planning Service in its role in making breakwater stone structures
3. The Regional Disaster Management Agency in its role in implementing policies regarding abrasion disasters
4. Village government
5. Non-governmental institutions, namely Walhi (Wahana Lingkungan Hidup) of Riau Province, as environmental observers.

From this, the authority regarding handling abrasion is our shared authority, from the Bengkalis Regency government, the Riau Provincial government, to the central government. A clear division is needed so that there is no overlapping authority. Regarding handling abrasion, the authority can be seen from the handling side. Planting mangroves is the authority of the Bengkalis Regency government and the Riau Provincial government through the Environmental and Forestry Service. For environmental permits that have now changed to environmental

approvals through Law Number 11 of 2020 concerning Job Creation, the authority to issue permits lies with the central government. The position of Bengkalis Island as an area that receives special attention from the central government based on the Presidential Decree of the Republic of Indonesia Number 6 of 2017 concerning the Determination of Outermost Small Islands. Then, it is the authority of the central government to pay attention to Bengkalis Island as a border area with neighboring Malaysia through the Malacca Strait border with the assistance of APBN funds.

The government must increase participation in every collaboration stage, from dialogue to program implementation. The government must also open more expansive communication space with the community and the private sector. Second, investment in abrasion mitigation technology must be a priority. Modern technology, such as breakwaters and early warning systems, can reduce damage from abrasion. Mangrove forest rehabilitation must also be carried out massively to strengthen coastal ecosystems. Third, local governments must allocate a unique budget for handling abrasion and establish partnerships with the private sector. Private sector involvement can be funded through incentives, such as tax deductions for companies contributing to abrasion mitigation programs.

The success of abrasion management in Bengkalis depends on the desire and consistency in implementing these steps. Therefore, it is important for each party involved to maintain commitment and support each other in efforts to save the coastal environment. With an integrated approach, it is hoped that the abrasion problem in Bengkalis can be resolved effectively, thereby providing long-term benefits for the coastal ecosystem and the welfare of the local community.

3.2 Collaborative actions

The abrasion that has eroded Bengkalis Island has reached an impactful level, threatening the sustainability of the island and the welfare of coastal communities. The significant rate of abrasion, exacerbated by climate change and land conversion, has

caused the loss of productive land, infrastructure damage, and ecosystem disruption. The handling efforts that have been carried out, such as planting mangroves and building breakwaters, require stronger collaboration from various parties.

Multi-stakeholder collaborative actions are the primary key to overcoming abrasion on Bengkalis Island. The government, community, private sector, and ideas must synergize in planning, implementing, and supervising program handling. The government is central in formulating policies and providing budgets, while coastal communities must be actively involved in environmental conservation efforts. The private sector can contribute through funding and technology, and academics can provide support through research and development of innovative solutions. By building effective partnerships, it is hoped that Bengkalis Island can be protected from the threat of abrasion and coastal communities can live more prosperously.

Concrete steps need to be implemented immediately to strengthen collaborative action. Local governments can form cross-sector coordination teams involving all stakeholders tasked with developing integrated action plans and monitoring their implementation periodically. Communities need to be provided with training and assistance in planting and maintaining mangroves and given incentives to switch to sustainable agricultural and fisheries practices. The private sector can be involved in CSR programs focusing on coastal ecosystem rehabilitation. At the same time, investors can conduct applied research to develop more effective and environmentally friendly coastal protection technologies.

3.3 The impact of adaptation on the collaboration process in handling coastal abrasion Based on Blue Economy in Bengkalis Island

Adaptation in the collaborative process of handling coastal abrasion based on the blue economy on Bengkalis Island has had a transformative impact. This approach focuses on the physical protection of the coast and improving community welfare through the sustainable use of coastal resources.

Applying local innovations such as "Trimba" (mangrove barrier triangle) shows how adaptation to the specific conditions of muddy beaches can produce practical solutions while providing economic opportunities for communities in their creation and maintenance.

Adaptation to local needs and wisdom has strengthened active community participation in coastal protection programs. Training and mentoring tailored to community conditions improve their skills in maintaining and caring for mangroves and open up new business opportunities in ecotourism and processed mangrove products. Partnerships with the private sector in CSR programs focusing on coastal ecosystem rehabilitation also have a significant economic impact, creating jobs and increasing community income.

Integrating abrasion management with sustainable development programs, such as developing mangrove-based ecotourism and environmentally friendly fisheries, ensures long-term viability. This blue economy approach protects the coast from abrasion and increases the added value of coastal resources, creates a sustainable economic cycle, and improves the quality of life of the people of Bengkalis Island.

CONCLUSIONS AND IMPLICATIONS

Based on the research results, handling abrasion on Bengkalis Island requires a strong and integrated collaborative approach, emphasizing adaptation and utilization of the blue economy concept. First, the dynamics of effective collaboration involve various levels of government and institutions, from the center to the village, as well as the participation of NGOs. Clear division of authority and increased community and private sector participation are key. The government must open more expansive communication spaces and channel modern abrasion mitigation technology. Second, concrete collaborative actions, such as forming cross-sector coordination teams, community training, and private-sector involvement through CSR, are needed to strengthen handling efforts. Adaptation to local conditions and the application of

innovations, such as "Trimba," prove the effectiveness of customized solutions. Third, adaptation in blue economy-based collaboration produces transformative impacts. This approach protects the coast and improves community welfare through the sustainable use of coastal resources. Integrating abrasion handling programs with the development of ecotourism and environmentally friendly fisheries creates a sustainable economic cycle, increases the added value of resources, and improves the quality of life of the Bengkalis Island community. Integrating abrasion management with sustainable development programs, such as developing mangrove-based ecotourism and environmentally friendly fisheries, ensures long-term viability. This blue economy approach protects the coast from abrasion and increases the added value of coastal resources, creates a sustainable economic cycle, and improves the quality of life of the people of Bengkalis Island.

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