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Power Relations and Challenges in Mangrove Ecosystem Management: The Case of the Tanjung Panjang Nature Reserve

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ABSTRACT

Mangrove ecosystems play a crucial role in maintaining coastal ecological balance, protecting shorelines from abrasion, supporting biodiversity, and sustaining the livelihoods of coastal communities. However, the Tanjung Panjang Nature Reserve in Gorontalo Province has experienced severe mangrove degradation due to the expansion of shrimp pond activities and weak environmental governance. This study aims to analyze the power relations and challenges among actors involved in mangrove ecosystem management in the Tanjung Panjang Nature Reserve. The research employed a qualitative exploratory approach using political ecology and access theory frameworks. Data were collected through in-depth interviews, field observations, and literature studies involving government agencies, shrimp farmers, NGOs, and local communities. The findings reveal that mangrove management is strongly influenced by unequal power relations between stakeholders. Shrimp pond entrepreneurs possess stronger structural and relational access through capital, political networks, social identity, and market control, enabling them to maintain illegal pond operations despite conservation policies. Meanwhile, the Natural Resources Conservation Agency (BKSDA) faces significant limitations in budget, personnel, technology, and institutional coordination, reducing its effectiveness in restoration and law enforcement efforts. NGOs and local communities contribute to advocacy and conservation initiatives, yet their influence remains constrained by limited resources and weak policy implementation. The study concludes that successful mangrove restoration requires stronger institutional collaboration, consistent law enforcement, and inclusive governance that balances ecological sustainability with the socioeconomic needs of local communities.

INTRODUCTION

Mangrove forests are ecosystem Which there is in part big line beach tropical and subtropical. Mangroves grow only in tidal zones, areas where saltwater and freshwater are inundated and circulate. This creates a natural process of continuous sediment exchange and deposition. The uniqueness of their habitat and ecological functions makes mangroves a crucial ecosystem in coastal areas (Alongi, 2014). Physically, mangrove forests play a role in protecting the coast from abrasion, dampening waves, retaining mud, trapping sediment, and as well as reduce impact storm Which come from sea to settlement resident.

Biologically, mangroves serve as nesting, feeding, and nursery grounds for various coastal animals. The relationship between mangroves and these animals is typically mutualistic. The presence of mangrove crabs, for example, not only helps accelerate the energy cycle through leaf processing but also improves soil quality through burrowing. Birds also function as natural pest control, play a role in flower pollination, and help disperse mangrove seeds. Furthermore, mangrove forests provide economic benefits to coastal communities, such as providing fuelwood, medicinal ingredients, and supporting the fisheries sector through fish and crab catches. Thus, mangroves are not only They function not only as natural protectors but also as a source of livelihood for coastal communities. Furthermore, despite occupying only a small portion of the global coastal area, mangroves have a high capacity to absorb carbon emissions (Hongxiao Liu et al., 2014). Therefore, No can deny that ecosystem mangrove believed play an important role in both adaptation and mitigation of climate change.

The International Union for Conservation of Nature (IUCN) assesses that more than half of the world's mangroves are currently at risk of collapse (IUCN, 2024). Threats to mangrove ecosystems are caused by pressures arising from natural changes and anthropogenic factors, or human activities. The Food and Agriculture Organization (FAO) (2023) reports that the rate of mangrove degradation has not shown a significant decline since 1980. Activities such as land conversion, urbanization, resource exploitation, and pollution are often the main factors triggering this decline. depreciation forest mangroves. Results studies Centre for International Forestry Research (CIFOR-ICRAF) on year 2015 show that rate degradation mangrove in Indonesia has reached up to 52,000 hectares per year, over the past 30 years. Through the National Mangrove Map (PMN), the Government itself confirms that more than 600,000 hectares of mangrove areas mangrove has switch function become area pond. Besides The reduction in environmental services is often underappreciated (Tussadiah, 2022). The loss of coastal buffer ecosystems also impacts the fauna in coastal areas. This impact is most obvious. felt by public coast, like decrease results coastal fishermen's catches (Haryanto, et. al., 2023), as well as the increasing risk of natural disasters and abrasion.

Although various efforts have been made, most mangrove forest restoration often fails completely or does not achieve the intended goals. set (Bosire et. al., 2008 in Thompson, 2018). Dale (2014) emphasizes that pressure and threat Which causes mangrove degradation as well as pressure and threat Which potential hampering rehabilitation. In 2020, the Indonesian government launched a national mangrove ecosystem restoration program covering 600,000 hectares. The mangrove areas selected for this program based on their potential for rehabilitation, many of which are located in former fishpond areas. However, as of February 2024, only 21 percent from target the who were successfully rehabilitated (Sinaga, 2024). Experts criticized that policy This implemented without careful planning, considering that the mangrove ecosystem has characteristics unique and highly vulnerable to changes in land use and climate, different with terrestrial area rehabilitation (Murdiyarso & Ambo-Rappe, 2022; Sasmito & Basyuni, 2023). The Indonesian Forum for the Environment (WALHI) (2023) has warned that these efforts will not be effective without a strong commitment from the government and other stakeholders to reduce the rate of mangrove degradation itself.

Vulnerability to land use changes is demonstrated through tenure conflicts. often happen in area forest mangroves. Conflict tenure This generally arising as a result overlapping overlap interest and right on land in region coast which has value strategic economically, socially, and culturally. Mangrove areas often become an arena of competition between various interests, such as environmental conservation, infrastructure development, economic activities like fish farming and tourism, and the needs of local communities dependent on coastal resources. Unclear land ownership status, weak law enforcement, and minimal coordination between stakeholders often exacerbate this situation.

From an institutional perspective, overlapping overlap in management ecosystem mangroves is seen through the involvement of many institutions, such as the Coordinating Ministry for Maritime Affairs and Investment (*Kemenkomarves*), *Bappenas*, Ministry of Environment and Forestry (*KLHK*), Ministry of Maritime Affairs and Fisheries (*Kemenkomarves*), Fishery (*KKP*), as well as Body The newly formed Peat and Mangrove Restoration (*BRGM*) (Murdiyarso et. al., 2022). The operational complexity of management often arises because each institution has its own approach and concept regarding protected or conservation areas, which are adjusted to their respective mandates (Mursyid et al., 2021). Besides That, the involvement of other actors, such as technical implementation units under these institutions, local governments, the private sector, village community institutions, and local community groups, further adds to the complexity of mangrove resource management. What emerged was the existence of certain groups who took advantage of this institutional ambiguity. For profit personal or group, often through method illegal which exploits tenure uncertainty in mangrove areas.

This issue is an important aspect in understanding the massive degradation of mangrove ecosystems in various regions. region Indonesia. In Island Java, pressure consequence Urbanization and infrastructure development, such as the port in Semarang, have exacerbated coastal erosion due to the loss of the natural protective function of mangroves. That, in coastal areas of Sumatra, mangrove forests face significant degradation. Febryano et al. (2015) reported that in Lampung, mangrove ecosystem damage is caused by irresponsible shrimp farming practices and minimal commitment from local governments to their management. Land use changes and the conversion of forests to monoculture oil palm plantations or intensive aquaculture ponds are the main causes of mangrove forest loss in coastal areas of Sumatra (Avril, 2022). The impact of this damage very felt by public coast, like in Langkat, North Sumatra. Mangrove damage in the area has complicated the lives of traditional fishermen who previously depended on the mangrove ecosystem for their livelihood. Currently, many coastal fishermen were forced to switch profession Because results catch, they decrease drastic. Similar things are happening in Kalimantan and Sulawesi, where the conversion of mangrove land for mining and fish farming is increasingly rampant. Meanwhile, elsewhere, mangrove destruction is not only caused by powerful actors with capital not only by large-scale development, but also by local communities who depend on mangroves for their daily livelihoods. For example, in Batu Ampar, mangrove forests are at risk of being lost due to charcoal production activities. In this region, mangrove charcoal is the primary source of livelihood for the community known as "charcoal farmers." Research conducted in the area indicates that this activity has been ongoing since 1909, long before Indonesia's independence (Lubis, 2023). These various

cases illustrate that restoration and protection efforts mangrove face challenge big, which influenced by level depth and complexity problem degradation mangrove in accordance with specific context in each region.

In Gorontalo, data from the Gorontalo Province Forest Area Stabilization Center (BPKH) shows that 67 percent of mangrove areas have been damaged. This damage is largely due to land conversion for agricultural activities. ponds, even in area Which should become area forest conservation. For understanding the barriers to ecosystem restoration and protection mangroves, study This takes the case in the conservation forest area Reserve Natural Cape Long Which located in Gorontalo Province. This area is designated as reserve natural on year 1995 with covering an area of approximately 3,174.10 hectares. Located on the coast of Tomini Bay, Indonesia's largest bay rich in natural resources, the Tanjung Panjang Nature Reserve boasts a mangrove ecosystem rich in biodiversity. This ecosystem also provides various important environmental services to the surrounding community. However, the area's biodiversity faces serious threats due to land conversion. Based on the latest mapping results in 2020, approximately 85 percent of the mangrove forests in this area have been lost, primarily due to conversion to fish ponds. This data is even thought to not fully reflect actual conditions on the ground, considering that degradation forest mangroves continue to grow.

Case degradation in Reserve Natural Tanjung Panjang has been ongoing since the 1990s and continues to this day. Recovery and protection efforts actually began in 2009, but to date have not shown significant results. Syamsuddin Hadju (2023), Head of the Conservation Area Section (SKW-II), which manages the area, stated that this problem is caused by a lack of law enforcement, weak coordination between authorized institutions, and criminal sanctions. Inadequate resources, and low commitment from field officers. A study by the NGO Japesda Gorontalo also revealed that the problems in the Tanjung Panjang Nature Reserve are complex, with social, economic, and political issues interacting dynamically (Massa et al., 2014; Dako, Paino et al., 2018).

Efforts to restore and protect the area have been undertaken, including building inclusivity among stakeholders (see Table 1). However, as research findings show, this co-management approach often fails to equitably transfer access to communities. The success of its implementation remains dependent on government or officials' country Which own authority bigger in allocating access. To date, these efforts have not brought about significant change, while the decline of the mangrove ecosystem continues as if left unchecked.

In ecological studies, resources are closely related to the actors involved in their management. ecology political focus on analysis relation power This study aims to understand how the interests and positions of actors influence natural resource management. In the context of the Tanjung Panjang Nature Reserve, this study explores the roles of key actors. in management area mangrove as well as strength and their capacity to face challenges in efforts to restore and protect mangrove ecosystems. The study of actors and power relations is very important, because it can reveal how injustice in resource utilization between actors contributes to degradation source Power And marginalization group certain (Febryano, et. al., 2015). Based on this understanding, this study aims to complete previous

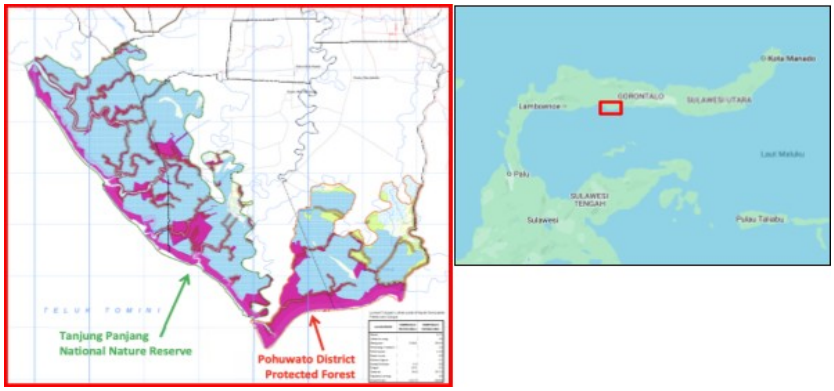
studies while also providing contributions Which relevant for effort mangrove conservation in the future.

METHOD

This study aims to map the key actors who have a significant influence on mangrove ecosystem management in the Tanjung Panjang Nature Reserve. Therefore, a conceptual framework is needed that can explore the roles, interests, and actions of individuals. or group in management environment. Bryant & Bailey (1997) presents an important perspective framework in the field of ecological studies. The proposed political ecology approach attempts to examine the social and political aspects of environmental management, with the main assumption that environmental change is not merely a technical problem, but rather a political issue involving various actors with different interests at the local, regional, and global levels. After adopting this actor-oriented approach to understand the position of each actor, Ribot & Peluso (2003) used for deepening the analysis of the use of power and power relations as depicted through dynamic interactions between actors. In other words, power can emerge as a result of interactions, actions, or relationships. in between individual or group man, not always permanently owned or attached to certain people. In this conception, power can shift, change, or even exist outside of individuals, for example in certain systems, institutions, or social structures. Access analysis views power relations between actors as a dynamic process in which each actor uses their abilities to gain benefits from various resources, including material objects, individuals, institutions, and certain symbols. This ability can be described through several aspects including, but not limited to, control over technology, capital, markets, labor, knowledge, authority, social identity, and social relations, which constitute a " *bundle of power*." These mechanisms play a role important in determine level access somebody or group to these resources. The greater the power an actor has, the greater their access to mangrove resources (Febryano, et. al., 2015). Access analysis is relevant for use in research because it can help understand why some individuals or institutions can or no can utilize source power, regardless of whether they have rights or not.

Time And Location Study

This research was conducted over three months, from October to December 2024. Data collection took place in October and November, while analysis and report preparation took place in December. To provide bias-free results, the authors present data from multiple sources and perspectives. This is important because the research was conducted close to the Regional Head Election (Pilkada) period in 2019. 2024, Where factor social and political own potential in influence public perception and response. Taking into account this sensitive time context, the authors are committed to ensuring that the data collected and the analysis the results remain objective and reliable.



Picture 1. Two jurisdiction main area forest in Cape Long.
(Source IUCN, (2018)

The research location was the Tanjung Panjang Nature Reserve, Randangan District, Pohuwato Regency, Gorontalo Province. Reaching Tanjung Panjang requires a land journey of approximately 1,000 miles. 6 O'clock from City Gorontalo and around 40 minutes from Marisa City, the capital of Pohuwato. It should be understood that the Tanjung Panjang Nature Reserve is part of the Tanjung Panjang area, which is divided into two jurisdictions: the Tanjung Panjang Nature Reserve, managed by the North Sulawesi Natural Resources Conservation Agency (BKSDA) under the coordination of the Ministry of Environment and Forestry; and the Pohuwato Regency Protected Forest, which is under the authority of the Management Unit. Forest Integrated Conservation (KPH-L) Province Gorontalo (Look Figure 1). This research was conducted in the Tanjung Panjang Nature Reserve area, to maintain relevance in the context problem Which brought. Election case in Reserve Natural Tanjung Panjang because the conflict that emerged was most visible in this area, where the management status is stricter and less flexible when compared to the Integrated Conservation Forest (KPH-L) area of Gorontalo Province (IUCN, 2018).

Data Collection and Analysis

To understand the roles and power relations between actors, this study uses a qualitative research approach through an exploratory research strategy. This exploratory research strategy is used to understand a problem or phenomenon that is still little known or lack of source data, like in context Reserve Natural Cape Long.

The research method will utilize a combination of interview techniques, literature studies, and direct observation. Qualitative data sources will be determined purposively and using the snowball technique, data analysis will be inductive, and the research results will emphasize meaning rather than generalization (Sugiyono, 2015).

Based on the source, the data used in this study is grouped into primary and secondary data. As initial data, this study will... use the most recent secondary data, with the primary reference being 2018 data. Secondary data was obtained through literature studies from book publications, journals, previous research, related documents, and internet news sources. To complete and update this data and information, the researcher collected primary data. directly by researchers through in-depth interviews with key informants, and direct observation in the field. Informants who participated in the research included, and no limited on, Head SKW-II Gorontalo as representatives from BKSDA, Chairman of the Shrimp Farmers Union as a

representative of the shrimp farmers, Chairman of Japesda Gorontalo, Head of Aquaculture at the Fisheries Service of Pohuwato Regency Government and Also public local. After through process interview, field studies done for get understanding Which more comprehensive about actual conditions in the field. On this occasion, the author attended the socialization of the Ministerial Regulation No. 14 of 2023 in Siduwonge Village. Key actors attending the meeting were Syamsuddin Hadju, Head of SKW-II Gorontalo, and Irfan Tonjie, Chairman of the Shrimp Farmers Union. Thus, the physical observations strengthened the interview results and provided deeper context for the research findings.

The preparation of the report and research framework is based on research by Febryano et al. (2015), especially in terms of taking data and channel writing. For strengthen Based on the results of the data analysis, this study focused on the period from 2018 to 2024. By focusing on this period, the research is expected to be more focused in analyzing the relationship between changes in actor behavior and the dynamics of power relations in mangrove ecosystem management. This also aims to strengthen the relevance of the research findings so that they can complement and enrich previous studies.

RESULTS AND DISCUSSION

Biodiversity in Area Reserve Natural Cape Long

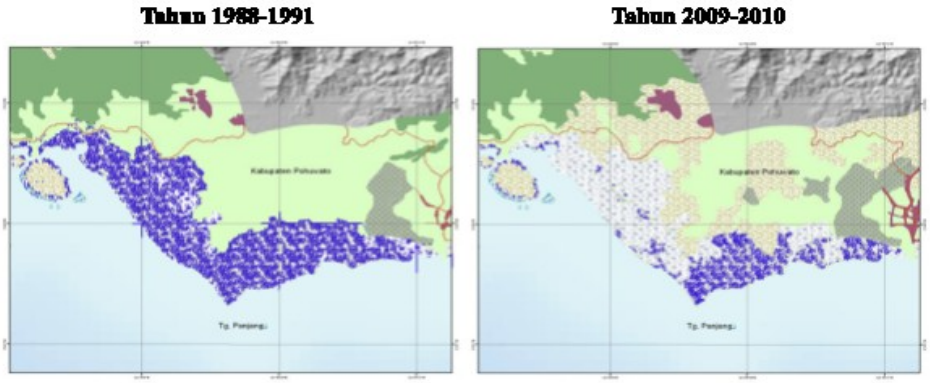
Based on the Decree of the Minister of Environment and Forestry in 2015, the area of mangrove forest in the Tanjung Panjang Nature Reserve area is 3,174.10 hectares. Administratively, the Tanjung Panjang Nature Reserve area is located in Randangan District, Pohuwato Regency, Gorontalo Province. In the division of its blocks, the location of the Tanjung Panjang Nature Reserve with sensitive and less sensitive classes that are within the animal's roaming area is designated as a protection block, while those in the critical level of very critical to critical land and very poor to moderate land cover are designated as rehabilitation blocks. The protection block in the Tanjung Panjang Nature Reserve is 943.10 ha in area which is intended to protect the habitat of several animals, provide protection for areas vulnerable to damage such as coastal abrasion, provide protection for the habitat and home range of key species.

As a conservation area, the Tanjung Panjang Nature Reserve serves a variety of functions, including protecting the community's life support system. in Pohuwato district, the area is home to a conservation area diversity of plant and animal species, as well as fair and sustainable utilization. Through report Plan Management Term Long Reserve Natural Cape Long (RPJP, (2020), the area boasts a high level of biodiversity. The Tanjung Panjang Nature Reserve is dominated by rich flora in the form of mangrove forests, home to 25 species of mangroves. Furthermore, the Tanjung Panjang Nature Reserve is known to Long is House from various animals, start These include reptiles, crustaceans, and birds. Some reptiles found in the area include estuarine crocodiles, snakes, and monitor lizards. Additionally, there are 22 species of crabs and 64 species of birds, some of which are endemic, protected, or endangered.

Apart from being a reason for protecting species, the establishment of a protected area in the Tanjung Panjang Nature Reserve is also intended to... For protect some coastal areas from threats abrasion beach and danger Tsunami for public Which live in Randangan District. The area also has high hydrological potential. The forest area in the Tanjung

Panjang Nature Reserve is part of the Randangan River Basin (DAS), one of the largest in Gorontalo Province. The Randangan River is a source of irrigation for rice fields, influencing the irrigation system in Pohuwato Regency. In addition to contributing to ecosystem balance, the above potential is also beneficial. For interest knowledge, education and culture in supporting regional development. These potentials become the basis for government considerations in efforts to restore and protect the Tanjung Panjang Nature Reserve area.

However, over time, the mangrove forests in the Tanjung Panjang Nature Reserve have experienced significant degradation, peaking in the 2000s (Dako, Paino, et al., 2018). Data from the Pohuwato Regency Environmental Agency shows that only 15 percent of the mangroves remain intact. temporary 85 percent (or Around 2,800 hectares of mangrove forest have been converted into fish ponds (Halid, 2024). The clearing and construction of fish ponds not only disrupts mangrove growth in the pond area but also puts pressure on the surrounding mangrove vegetation (Massa et al., 2014). Another impact of mangrove forest destruction is abrasion and the disruption of the survival of rare animals such as the male bird (which has been No can Again found in around area). No only That, activity ponds have also been change pattern livelihood public local Which in the past profession as coastal fishermen. This encroachment on mangrove land has resulted in a reduction in the existence of mangrove crabs in the Tanjung Panjang Nature Reserve area (Lapolo, 2018). As a result, some people have changed their profession to become corn farmers, and only a small number are involved in fish farming activities.



Picture 2. Map Trend Forest Mangrove in Reserve Natural Cape Long.
(Source: SUSCLAM, 2011 in Dako, R., 2014)

Activity Fishpond in Reserve Natural Cape Long

The opening of fish ponds in the Tanjung Panjang Nature Reserve area began in 1993, with the arrival of a fish farmer named Haji Nompo (Dako, Paino, et. al., 2018). Haji Nompo came with a number of workers from the village. the page in South Sulawesi. He entered the area on the grounds that the land considered very potential to be developed as a location pond. After Hajj Nompo get After obtaining a land use permit in the area, local residents, witnessing the incident, began flocking to the hamlet and village heads to seek land parcels. They then submitted requests to the hamlet and village heads to issue a Land Ownership Certificate (SKPT) for the parceled land. with wide on average, about 2 hectares per person.

Some families even claim up to 6-10 hectares of land, listing the names of their wives and children. they. However, along walking Over time, many residents have sold or rented their land due to difficulties managing it. According to a 2020 government report, the number of pond owners in the Tanjung Panjang Nature Reserve was recorded at 270.

Fish farming activities in the Nature Reserve area Cape Long involving cultivation Milkfish and shrimp. According to the statements of the fish farmers, most of whom are from South Sulawesi, the milkfish and shrimp produced in Pohuwato Regency, particularly in the Nature Reserve area, are Cape Long, enough known Because own the best quality in Indonesia (Massa et al., 2014). Fish and shrimp from ponds in this region has the advantage in terms of taste. In addition, both do not have the aroma of grass or mud, so that produce mark sell Which very tall, specifically in market South Sulawesi. During the productive period, ponds can be harvested in just 70 working days, and a 2-hectare area can generate around 100 million rupiah.

Furthermore, pond production in this area still uses the traditional pond model. This system was chosen because of its relatively lower costs. cheap compared to with an intensive pond model. Traditional ponds generally require a large area, with an average size of around 2 to 5 hectares. However, some ponds can reach up to 10 hectares in size. The construction process begins by clearing the mangroves around the area to be used as a pond. form wall embankment and pond embankments. Initially, this process was done manually, involving local communities. Building one hectare of pond required approximately 20 workers. However, over time, the process This start use machine excavator in the field. After construction wall embankment finished, trees Which remaining in the central highlands will die, and the area will be submerged in water for several weeks, thus forming pool pond. Based on data final, recorded a number of 473 fishpond area located in the Tanjung Panjang Nature Reserve area.

Actors and Power Relations

The actors directly involved in mangrove management in the Tanjung Panjang Nature Reserve are: the central and regional governments, shrimp farmers, local communities, NGOs, and village governments. Each actor has different interests in the resources in the Tanjung Panjang Nature Reserve, both in a way ecology, social, economy until political. Difference of interests and power between actor is source conflict in management mangrove Because each actor try utilize power Which owned for his own interests (Febryano, et. al., 2015).

Table 2. Role And Position Actor in Management Area Reserve Natural Cape Length.

No.	Actor	Position	Role	Interest	Power Relations
1.	**Ministry**	Level manager	Set	Protecting the area	**Control full**
	Environment	national	policy,	conservation according to	**to the policy**
	and Forestry		regulations, and	statutory mandate	**and regulations.**

No.	Actor	Position	Role	Interest	Power Relations
	(KLHK)		conservation zone		Have authority
					for enforcement
					law against
					activities.
2.	**Conservation Center**	Level manager	Implementation	Maintaining integrity	**Management**
	Natural resources	regional	management	appropriate area	**operational**. Can
	(BKSDA)		conservation,	government policy	conduct patrols and
			monitoring, and		legal action but
			enforcement of regulations		resource constraints
					Power.
3.	**Local Community**	Users	Manage in a	Protecting resources	**Influence**
		traditional	traditional and	livelihood, access	**socio- cultural**
			utilize	against crabs	through local wisdom.
			regional results	mangroves, as well as preventing	Sometimes
			in a way	abrasion and threats	touch or
			sustainable.	climate change	stressed by activity
				other	ponds.
4.	**NGO (Japesda)**	Advocate, partner	Campaign	Support	**Formation**
	Gorontalo)	conservation	advocacy, research,	area protection	deep **network**
			education, and	and social justice	ecosystem management
			training		mangrove. Doing
			alternative		public advocacy and
			livelihood		opinion formation
			public		to delete
			around the		activities.

No.	Actor	Position	Role	Interest	Power Relations
			area		
5.	**Fish Pond Entrepreneur**	Economic actors	Converting	Get	**Structural access and**
		illegal in the area	land becomes	financial gain	**relational Which strong**
		conservation	ponds for	short -term	so that it is capable
			interest		hinder efforts
			personal economics		enforcement.
6.	**Village Government /**	Local actors	Bridge	Maintain	**Influenced by**
	Subdistrict	with influence	aspirations	social stability and	**relationship with**
		administrative and	society, as well as	economy in	**fish pond entrepreneurs**
		social	implement-	its territory, often	through social assistance
			implement policies	consider	or economy,
			at the village level	pressure from various	so that sometimes
				parties, including	be permissive
				fish pond entrepreneurs	to activities
					illegal.

(Source: Secondary data and interview results with informants)

Based on the table above, it can be seen that each stakeholder has their respective roles and interests are crucial for the management of the mangrove ecosystem in the Tanjung Panjang Nature Reserve area. The following discussion will explain in more depth the relationship and relation power in between these actors using Ribot & Peluso's (2003) access theory.

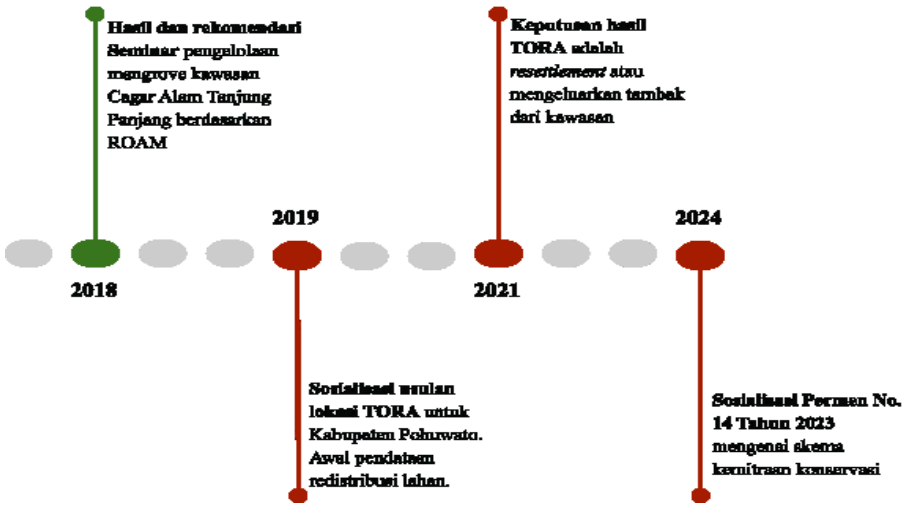
Partial Steps by the Central Government in Area Management

Despite significant mangrove degradation, the Central Government, supported by regional government policies, continues to strive to maintain the status of the Tanjung Panjang Nature Reserve. In 2010, the Tanjung Panjang Nature Reserve was declared a protected area. was included in the Gorontalo Provincial Forest area (previously part of North Sulawesi) through a Decree of the Minister of Forestry. Subsequently, the government further strengthened the status of this area through Regional Regulation Number 4 of 2011 concerning the Gorontalo Provincial Spatial Planning Plan for 2010-2030. The Gorontalo Provincial DPRD has also issued a recommendation for settlement problem This includes

law enforcement against perpetrators of environmental damage, legal processing of the involvement of local officials and apparatus, the formation of regional regulations for mangrove management and the re-arrangement of boundaries. area. A number of recommendations These cases have been able to be followed up (See Table 1), but law enforcement measures have often not been able to be implemented. The informant stated:

> "So far, the problem in following up on the findings (of violations) has been the incomplete investigation by the National Police investigators... once the investigation warrant is issued, it gets stuck there. The investigation warrant is a notification... (through) prosecutor's office and etc, Thus, they keep asking for this case, why is this investigation being carried out? No continue, owed So, what's the problem? So there's a bit of a conflict between the investigators (Police) and the prosecutor's office.

In addition to the police, law enforcement efforts can be carried out by the Natural Resources Conservation Agency (BKSDA) following the establishment of the Directorate General of Law Enforcement (Gakkum). Law enforcement in the Tanjung Panjang Nature Reserve area began to become more visible in 2017. The Directorate General of Law Enforcement and the Environment (Ditjen Gakkum) deployed an Integrated Team to enforce the law in the area. While there, field, Team Law Enforcement executed a fish farmer's hut in the Tanjung Panjang Nature Reserve, specifically in Siduwonge Village. Footage of the incident circulated widely, sparking anger among the fish farmers against the Natural Resources Conservation Agency (BKSDA), the area's management. One BKSDA member was even reported to the National Commission on Human Rights (*Komnas HAM*) for alleged human rights violations. Ultimately, the conflict was resolved by bringing together the various stakeholders. A coordination meeting was held between stakeholders.



Picture 3. Timeline Policy Government During 5 Year Final.
(Source: Data secondary and the results of interviews with sources) –gan, including the government, shrimp farmers, NGOs, and the community.

Through NGO facilitation, Restoration Opportunity Assessment mapping was also carried out. Methodology (ROAM). One of the initial solutions is to carry out rehabilitation in the green belt area, especially in the 200 area. meters flow river or channel water in the area to improve the entry and exit of sea water into the area mangrove areas. However, this

effort is highly dependent on the consistency of the government and shrimp farmers as the most crucial stakeholders in the region (Dako, Paino, et. al., 2018), because the most prominent obstacle is the high opportunity cost of restoration for shrimp farmers who require investment in sustainable alternative livelihoods and compensation (IUCN, 2018).

Ultimately, there was no concrete progress or follow-up from the government in implementing these recommendations. Instead, the central government provided direction to include the Tanjung Panjang Nature Reserve as one of the areas to be verified through the TORA scheme or land acquisition, thereby canceling the recommendations that had been made. In 2019, the Forest Area Determination Agency (BPKH) conducted mapping of the Tanjung Panjang Nature Reserve area as part of the from policy Land Object Reform Agrarian (TORA). TORA and Social Forestry are two flagship government programs under President Joko Widodo, focusing on land redistribution to communities, particularly small farmers and vulnerable groups, with the aim of improving community welfare. had time visit local government offices to collect documents required for the TORA scheme. They believe that the TORA scheme will allow the issuance of certificates that can legalize their farming activities. However, the results of the TORA scheme mapping resulted in recommendations for done resettlement (settlement return) activity pond to in area.

Effort This at least show existence change approach Which carried out by the government. The informant revealed:

> "Even though the tora scheme is for natural reserve areas, the solution is or The recommendation that will be issued is certainly resettlement, but in order to achieve the maximum effort or solution in terms of resolving this conflict, various mechanisms are being tried, because it is not only limited to law enforcement that is considered the final limit in this action... we need to provide guarantees to the community (fishpond entrepreneurs) we have tried this with any mechanism."

In fact, the implementation of the resettlement decision was not carried out as it should have been. Obstacles This seen from lack of action carry on from government area to ensure the implementation of resettlement decisions complies with established provisions. Finally, in 2023, the Ministry of Environment and Forestry issued Ministerial Regulation (Permen) No. 14 of 2023. about Settlement Business and/or Activity Woke up in Nature Reserves, Nature Conservation Areas, and Hunting Parks. This regulation introduces a partnership scheme that allows shrimp farmers to continue operating in nature reserves for a period of time agreed upon between the two parties. government and shrimp farmers. However, shrimp farmers are still required to operate their shrimp farming activities with environmentally conscious principles. This scheme aims to provide a compromise solution between the need for environmental preservation and the need for sustainable development. the livelihoods of local communities, despite reaping pros and cons from various parties.

Previous research noted that efforts to restore and protect the Tanjung Panjang Nature Reserve faced various challenges. obstacle Which caused by by poor area management (Massa et al., 2014). Using Ribot & Peluso's (2003) analysis, this suboptimal management can be seen from the weak ability of the BKSDA to obtain benefits. from source Power, which influenced by mechanisms determined by a particular political-economic and cultural framework. This study highlights the influence of these mechanisms access structural and relational Which form the power of actors, and found that various limitations, such as

mastery of technology, availability of capital, labor, knowledge, identity social, and connection social, has marginalized the BKSDA in its efforts to access and manage mangrove resources optimally.

The most glaring limitation is the BKSDA's access to capital (budget) for managing the Tanjung Panjang Nature Reserve. Budgetary limitations are the main obstacle for the BKSDA in its restoration and protection efforts. Several efforts, such as outreach and community empowerment, have been implemented. through activity planting Although some initiatives have been implemented, their impact has been minimal due to their small-scale implementation. Furthermore, the Tanjung Panjang Nature Reserve, located at the farthest point of Gorontalo Province, faces challenges such as difficult accessibility and a lack of facilities and infrastructure. This limited access to capital influential also on BKSDA's limitations in terms of adequate technology and workforce. The personnel in the area consist of one State Civil Apparatus (ASN), One officer honorary, two animal breeders, and three partners from the local community. However, the intensity of the officers' presence in the field they tend low, even No seldom they doing activities in cities or districts. This of course affects the BKSDA's ability to optimally monitor the area. Furthermore, there are no specialized personnel who understand the mangrove ecosystem (Massa et al., 2014). However, expert status is obtained through access to privileged information, education, and tall, and training or apprenticeship special, or even from ability for use marker status.

These resources (titles, positions) can give people privileged access to job opportunities, group or network membership, or privileged physical access to resources. Limited access to knowledge is also indicated by limited data. and information regarding land cover in the area. Process For emit This also hampers the efforts of fish farmers, law enforcement, and others. Access to knowledge is crucial, especially in conservation areas, to promote management potential and the benefits of restoration and protection efforts. In fact, the Management Plan was only developed in 2020, despite being planned since 2016 (See Figure 1).

Social relations between the BKSDA and other stakeholders in the region often show a less than harmonious relationship. This is evident in the limited communication between the two parties, particularly between the BKSDA and the shrimp farmers. At the meeting, recommendations were made. Seminar Management year 2018, agreement the resulting meeting was attended only by representatives from the shrimp farmers (Dako, Paino, et al., 2018). Furthermore, the socialization of Ministerial Regulation No. 14 of 2023 in Siduwonge Village was also attended by only three representatives from the shrimp farmers' group. The implied conflict between shrimp farmers and the BKSDA (National Natural Resources Conservation Agency) presents a significant obstacle to the implementation of various actions. One informant stated:

> "...we (BKSDA) are often avoided because it seems like there is intimidation (against shrimp farmers)."

In addition, regarding several recommendation like rehabilitation mangrove in area track the green belt was also not implemented in such a way due to the lack of trust of the shrimp pond entrepreneurs. The mangrove planting precisely considered threaten productivity ponds. The informant revealed:

"Mangrove rehabilitation efforts are actually feasible, but there haven't been any pilot projects in Pohuwato Regency. The public (fishpond owners) have always believed that mangroves must be clean, with no trees or shade, as they say it impacts the growth of the fish in the ponds. But because we haven't had any successful implementations in our area, it seems the public (fishpond owners) need to see what it's like first. They won't be convinced if we just talk about it."

The BKSDA also maintains relationships with several surrounding communities in Randangan sub-district, particularly in monitoring the Tanjung Panjang Nature Reserve. For example, information about excavators entering the area several times was based on reports from local residents. However, this frequency remains low. and basically, public knowledge regarding the benefits of the mangrove ecosystem itself is still very minimal.

The Strategic Role of NGOs and Local Communities

Throughout its development, stakeholders are involved at every stage of the management process, from planning to implementation. This step aims to ensure that the perspectives, knowledge, and support of each stakeholder contribute to ecosystem restoration and protection efforts. At a minimum, all parties receive clear information regarding the management processes to be implemented in an area.

One important step is evident in the formation of the Gorontalo Regional Mangrove Working Group (KKMD). The KKMD serves as a collaborative forum for its members, including local government organizations, vertical government agencies such as the Natural Resources Conservation Agency (BKSDA), the Watershed Management Agency (BPDAS), and the Forestry and Forestry Development Agency (BPKH), academics, NGOs, and representatives from media mass. Besides that element related enforcement law enforcement is also involved, such as the Gorontalo High Prosecutor's Office, Kodim 1304 Gorontalo, And Gorontalo Regional Police (Polda). Although administratively established in 2015, the KKMD has been involved in various efforts, such as facilitating coordination meetings between the BKSDA and other stakeholders, resulting in several recommendations since 2011 (see Table 1). This strategic role is inseparable from the contribution of the Gorontalo Japesda NGO. During this period, Chairman KKMD is Rahman Dako, which comes from the NGO Japesda Gorontalo. This NGO's access to capital, technology, knowledge, social identity, and social connections allows it to mobilize forces to support efforts to restore and protect the mangrove ecosystem in the Tanjung Panjang Nature Reserve. Therefore, KKMD activities often depends on Japesda Gorontalo's active contribution. The informant revealed:

"… he (KKMD) doesn't have a salary, he only does activities, for example, he will hold a coordination meeting per six monthly … so Because No There is funds Which bound so, Yes, they work in a simple way, but when there is a mangrove program, " Previously, there was the Gorontalo Japesda, (KKMD) carried out planting, the operational funds came from the Japesda, so they (the government) had a report, but actually, we were the ones who funded the activities."

This NGO group has successfully leveraged its various access points to support a number of activities, such as public education, the formation of community networks with academics, and other environmental activist groups to create alternative livelihoods. Furthermore, Japesda also collaborates with the community, the government, and related institutions to push implementation More measurable policies. The ROAM mapping

conducted in 2017 was also conducted through a conservation partner, the Blue Forest Foundation. In the technology sector, Japesda supported the first area mapping in the Tanjung Lesung Nature Reserve. Long through The SUSCLAM program (2008–2012) also focused on empowering local communities. Although community participation was still limited, several individuals were committed to restoring and protecting the mangrove ecosystem in the Tanjung Panjang Nature Reserve. In 2020, Japesda together public formed the "Civil Society Alliance for the Rescue of the Tanjung Panjang Nature Reserve" (Paino, 2019). This alliance emerged in response to the planned land use change through the TORA scheme. As a form of protest, alliance the submit letter objection to the Ministry of Environment and Forestry.

However, Japesda also has limitations in utilise access Which they have, because this access is highly dependent on funding received from donors. In reality, many of the results of coordination meetings or proposals submitted by Japesda are not followed up by action real or commitment from government. Condition This making it difficult for them to account for the results of the funding they have received. The informant revealed:

> "(the government says) legal action must be taken, but (in reality) it only ends up in forum, (recommendation and policy) That finished in forum only, for execution in field That Which We Look Still very minimal very, maybe there isn't even one."

In 2020, the government, as the area's manager, reached an agreement with shrimp pond operators to prohibit the entry of heavy equipment such as excavators into the area. However, a member of the Forest Police Partner Community (MMP) during a routine patrol still encountered an excavator in operation. used for repair pond in in area Reserve Natural (Ivan, 2021). Ultimately, the relationship between the NGO and the managing government began to strain. This situation also coincided with the change in leadership of the Gorontalo KKMD by the government in 2022.

Self-Organization of Entrepreneurs and Shrimp Farmers

The implementation of mangrove restoration and protection policies in the Tanjung Panjang Nature Reserve is often not optimal and effective. This is due to the influence of powerful actors. the biggest in area, that is businessman pond. Entrepreneurs utilize the structural and relational access they have so that their farming activities and conversion mangrove can happen until moment This. Strength This is demonstrated through the ability of shrimp farmers to master technology, capital, markets, labor, job opportunities, knowledge, social identity, and social relations.

The strong capabilities of these shrimp farmers are demonstrated by their ability to control significant amounts of capital. It has been explained that managing shrimp farming activities requires significant capital. Compared to the BKSDA, as area managers, the ability of shrimp farmers to generate income or acquire capital significantly influences land use in the area. For example, they are able to contribute significantly to the local government's regional revenue (PAD). Furthermore, the Pohuwato government has also uncovered several illegal tax collections from shrimp farmers. This strongly suggests that the shrimp farmers' ability to pay local officials to carry out their shrimp farming activities is crucial.

The strongest factor influencing the ability to access the area is also the access to relations and access to social identity that the shrimp farmers have. The brief history of the introduction of shrimp farming activities in this area began with Haji Nompo, a prominent

figure from South Sulawesi, assisted by representatives from several relevant agencies. These agencies included the Regional Development Planning Agency (Bappeda), the Forestry Service, the Fisheries Service, the Land Agency (Agraria), and the Transmigration Service of the Gorontalo Regency Government. North Sulawesi Province. With the involvement of these agencies, Haji Nompo successfully obtained a Right to Cultivate (HGU) certificate for a 100-hectare fishpond. (Dako, Paino, et. al., 2018). In its development, majority businessman ponds originating from South Sulawesi get a lot convenience. They facilitated in managing administrative matters regarding pond permits, obtaining land certificates for controlled mangrove areas, and obtaining support from local government officials to continue pond activities in the area. This social and political influence is not only demonstrated through their relationships with local governments, but also through advocacy through lobbying strategies within the central government. In recent years, it has been discovered that shrimp farmers have borrowed excavators and other equipment to carry out their activities. An informant revealed:

> "... I (the SPT chairman) am a politician from the Golkar Party. There is a fund for cooperation with agriculture and fisheries in Commission IV. We were assisted by equipment; the excavator came out yesterday (in 2023). three, Then There is factory ice, that there are several of those units. Every year there's assistance; (every time) we ask, it's always given (by the central government).”

The Shrimp Farmers Union (SPT) was first formed when a law enforcement operation was carried out by Law Enforcement on year 2017. Businessman pond which feels Disappointed by these actions, they formed the SPT as a forum to advocate for the rejection of operations deemed not to reflect the principles of justice. They sought assistance from the Jakarta-based Agrarian Reform Consortium (KPA) to report the actions by Gakkum as a violation of Human Rights to the National Commission on Human Rights (Komnas HAM) (Dako, Paino, et. al., 2018). KPA itself is an organization engaged in advocacy for fair and pro-people agrarian policies and systems. In addition, the SPT also proposed to President Joko Widodo to convert the Tanjung Panjang Nature Reserve area into a community fishpond area by including it in the TORA Scheme. The informant revealed:

> "... the one who facilitated me (a representative of the shrimp farming entrepreneurs) to meet with the staff at the Presidential Staff Office was from the KPA, who entered the National Commission HAM from KPA. Thus, this issue (the conflict between the government and shrimp pond entrepreneurs) was already brought to the palace at that time, in 2017. From then until now, forestry from the BKSDA, there is no more intimidation, it's just that we are playing cat and mouse (avoiding supervision), when we use equipment (excavators) there to repair the embankments until now."

The various strengths possessed by shrimp farmers are also based on their strong social identity. The influx of shrimp farmers into the region is believed to have peaked during the administration of Regent Hi. Zainuddin Hasan. (2005-2010 period), who came from South Sulawesi (Massa, et. al., 2014). The position of Regional Secretary of Pohuwato in 2013 was also held by an individual from the "South". It is known that the apparatus and officials local Which originate from Sulawesi South Sulawesi also has aquaculture areas in the Tanjung Panjang Nature Reserve. These fish farmers, most of whom come from South Sulawesi, have an association known as the South Sulawesi Family Association (KKSS).

KKSS is a community network originating from South Sulawesi, with a number of members involved. in pond activities. It is known that access to capital and markets for pond entrepreneurs is strengthened through the existence of these groups. If someone wants to start a pond business but Not yet own capital, power Work, or knowledge Which adequate, they can enter this sector by leveraging social connections with experienced entrepreneurs. For example, providing capital loans among the people of South Sulawesi is one way to ensure access capital for pond entrepreneurs (Amin, B., 2018 in Dako, Paino, et. al., 2018).

The influence of shrimp farmers on the welfare of the surrounding community is reflected in their contribution to employment access. This is evident in the role of local intermediaries who ensure the security of transactions, including land sales in the Tanjung Panjang area (Amin, B., 2018 in Dako & Paino, 2018). Furthermore, during the shrimp pond opening process, entrepreneurs employ local residents, creating significant employment opportunities in the area. Shrimp pond entrepreneurs also participate in various social activities in surrounding villages and hamlets, particularly in the Tanjung Panjang Nature Reserve. An informant revealed:

> "... if for example Again harvest That right divided up in their fish The same people there. There is party for example need fish, need This, or right There is activity in village, That Always coordinate with us. That's all it really is. For example, if there's an activity in the sub-district, just contact us. we, cannot help with This shrimp Whatever it is, or any kind of proposal, we participate in it."

Participation this strengthen connection social between businessman pond and local communities, thus creating mutually supportive relationships.

CONCLUSION

Mangrove ecosystem management at Tanjung Panjang Nature Reserve in Gorontalo Province involves a complex web of actors including the central and regional governments, BKSDA, shrimp farmers, local communities, NGOs, and village governments each with competing ecological, social, economic, and political interests. BKSDA's capacity to manage and restore the reserve has been severely undermined by limited capital, technology, knowledge, and weak social networks, pushing the agency into a marginalized position despite its coordination efforts since 2012. Meanwhile, shrimp pond entrepreneurs have emerged as the most dominant actors, leveraging strong structural and relational access, capital, market networks, and political lobbying most notably their successful resistance against the 2017 Gakkum enforcement operation to sustain operations that obstruct mangrove restoration. Agrarian reform considerations such as TORA have further complicated BKSDA's legal standing, leaving conservation efforts largely unresolved. For future research, a comparative study examining mangrove governance in similarly contested conservation areas across Indonesia would be valuable, as it could reveal transferable conflict resolution mechanisms and identify governance models that more effectively balance conservation mandates with the socioeconomic realities of local resource-dependent communities.

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