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Mangrove Forest Rehabilitation Strategy in Ponelo Kepulauan District, North Gorontalo Regency

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ABSTRACT

Mangrove forests provide essential ecological, economic, and social benefits, including coastal protection, habitat provision, and support for local livelihoods. However, mangrove ecosystems in Ponelo Kepulauan District, North Gorontalo Regency, have experienced significant degradation due to land conversion, illegal logging, coastal abrasion, climate change, and inadequate management. This study aimed to formulate an appropriate mangrove forest rehabilitation strategy based on internal and external factors affecting rehabilitation efforts. A descriptive quantitative approach supported by qualitative data was employed through field observations, interviews with coastal communities and village government officials, and SWOT analysis using the Internal Factor Analysis Summary (IFAS) and External Factor Analysis Summary (EFAS) matrices. The results indicate that the rehabilitation strategy is positioned in Quadrant I (Strengths–Opportunities), with an IFAS score of 0.95 and an EFAS score of 1.15, indicating strong internal conditions supported by favorable external opportunities. The recommended strategy emphasizes optimizing the ecological and economic potential of mangroves, strengthening collaboration among local communities, government agencies, universities, and non-governmental organizations, promoting community-based ecotourism, enhancing environmental education, and improving post-planting management and institutional capacity. These integrated strategies are expected to enhance the effectiveness and sustainability of mangrove rehabilitation while supporting environmental conservation and improving the welfare of coastal communities in Ponelo Kepulauan District.

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1. INTRODUCTION

Mangrove forests are among the most productive ecosystems in the world and have vital biological functions because they provide goods and services that are highly needed by humans, fisheries, and the oceans. They are the most productive ecosystems with vital biological functions because they provide goods and services that are highly needed by humans, fisheries, and the oceans. (Rahmadi et al., 2022). The mangrove ecosystem is formed from mangrove species that are able to grow and develop in coastal areas consisting of mud and tidal zones, forming plant communities in these areas. The mangrove ecosystem plays a very important role in the economic and ecological aspects of surrounding ecosystems, whether used as a water source or as a protective barrier. The ecosystem plays a very important role in economic and ecological aspects. The surrounding ecosystems, whether they are used as a water source or as a protective barrier. Melo and Lukman (2023)

Sustainable mangrove management requires the involvement of various stakeholders as well as the strengthening of local institutions as the foundation for planning and implementing programs at the field level. Melo et al. (2019) emphasize that the success of mangrove management is greatly influenced by coordination among stakeholders, clarity regarding the roles of each actor,

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and the participation of local communities as those directly affected. Stakeholder mapping based on levels of interest and influence is used to design appropriate participation strategies, enabling mangrove management programs to be implemented effectively and sustainably.

In addition to serving as coastal protection and habitat for coastal biota, mangroves also have economic value through the utilization of forest products, fisheries, and the potential for ecotourism development. Unplanned mangrove management can lead to a decline in ecological and socioeconomic functions in coastal areas. Therefore, mangrove rehabilitation needs to be carried out in an integrated manner, involving the community and the government as key stakeholders in coastal resource management (Melo et al., 2019).

SWOT analysis is a strategic management tool used to identify strengths, a strategic management tool used to identify strengths, weaknesses, opportunities, and threats of an organization, project, or business. Weaknesses, opportunities, and threats of an organization, project, or business. Project, organization, or business. SWOT analysis helps organizations develop their strategies by identifying relevant internal and external factors. Strategies by identifying relevant internal and external factors. And external factors (Kotler P and Armstrong G, 2017). An analytical tool that helps organizations understand the challenges and opportunities in their business environment (Pearce, JA and Robinson RB, 2019).

According to Ferrell, SWOT analysis is an evaluation process that helps organizations understand their relative position in the market and identify appropriate strategies (Ferrell, OC and Hartline, M, 2018). According to Thompson (Thompson AA et al, 2019), SWOT analysis is a research technique that enables organizations to understand the key factors that can influence strategic outcomes. According to David (2019), SWOT analysis is a tool used in strategic planning that integrates internal factors (strengths and weaknesses) and external factors (opportunities and threats) within an organization. A tool used in strategic planning that integrates internal factors (strengths and weaknesses) and external factors (opportunities and threats) within an organization. According to Wheelen TL and Hunger JD (2017), SWOT analysis is a methodical approach to identifying strengths, weaknesses, opportunities, and threats that can affect organizational objectives. According to Grant (2016), SWOT analysis is a type of job analysis that classifies strategic factors as internal factors such as strengths and weaknesses, as well as external factors such as opportunities and threats.

SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) is a method for analyzing the internal and external conditions of an organization, which is then used as a foundation for the development of strategies and work programs. The analysis includes an assessment of strengths and weaknesses. In other cases, external analysis is used to identify opportunities and threats. It is used to identify opportunities and threats. According to Saraswati and Emanuel (2022), this study uses a normative approach that evaluates the law not only in terms of the articles of legislation but also in terms of clearer aspects that can be analyzed from an economic perspective. This study uses a normative approach that evaluates the law not only in terms of legislative articles but also in terms of clearer aspects that can be analyzed from the economic perspective.

Strategy is an essential part of future-oriented company growth and constitutes the fundamental pattern of interaction between resources, organizational placement, and existing and planned objectives, including market resources and other environmental factors. Another expert view states that strategy is a means used to achieve objectives and encompasses the characteristics of competition. In other words, companies attempt to carry out activities that go beyond improving employee skills and other resource capabilities. Competitive advantage: A specific activity developed by the company to enhance cost management and differentiation techniques (Riyanto and Achmad, 2021).

Mangrove forests serve as coastal protection against erosion, provide habitat for coastal biota, and support the livelihoods of coastal communities. In Ponelo Kepulauan District, mangroves are crucial for environmental sustainability and the local economy. However, land conversion, mangrove logging, and poor supervision have led to mangrove degradation in this area.

Mangrove rehabilitation efforts need to be planned and sustainable, taking into account both biophysical conditions and the social context of the community. Therefore, this study focuses on formulating mangrove rehabilitation strategies using a SWOT analysis approach to ensure that the resulting strategies can be implemented and adapted to local conditions.

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Changes in the condition of these mangrove forests indicate damage that requires serious attention from the government and local communities. If this continues, the ecological functions of mangroves as barriers against abrasion and as natural habitats for marine biota will further decline. Therefore, this research is highly important (with high urgency) to carry out in order to determine the condition and distribution of mangroves in Ponelo Kepulauan District in greater detail through spatial analysis using Landsat imagery. The results of this study are expected to provide accurate information regarding the extent, distribution, and density of mangroves from year to year so that they can be used as a basis for formulating sustainable mangrove management policies and rehabilitation strategies. Thus, this research not only holds scientific value but also provides tangible benefits for environmental conservation and the welfare of coastal communities in Ponelo Kepulauan District.

Mangrove forests in Ponelo Kepulauan District, North Gorontalo Regency, currently face various challenges each year. Mangrove cover is steadily declining due to various human activities, including land conversion, mangrove damage caused by trunk rot, illegal logging, and excessive exploitation. In addition, climate change and increased economic activity by local communities around Ponelo Kepulauan District are further exacerbating mangrove forest degradation.

Based on these conditions, an analytical approach is required that not only describes changes in mangrove forests but is also able to formulate appropriate and sustainable management directions. Therefore, this study employs SWOT analysis to evaluate internal and external factors influencing mangrove forest rehabilitation efforts in Ponelo Kepulauan District. Internal factors, which include strengths and weaknesses, are analyzed using the IFAS matrix, while external factors, including opportunities and threats, are analyzed through the EFAS matrix. This approach is chosen because it is capable of providing a comprehensive overview of the actual condition of mangrove forests as well as the challenges in their management. Accordingly, the results of this analysis can serve as the basis for formulating directions for rehabilitation plans and strategies that are tailored to the ecological, social, and economic conditions of the local community.

2. METHOD

This study employs a descriptive quantitative approach supported by qualitative data. The qualitative approach is used as supporting data through field observations and interviews with coastal communities, village officials, and relevant stakeholders to obtain information regarding mangrove conditions and the rehabilitation efforts undertaken. This study is descriptive in nature to depict the condition and dynamics of the mangrove forest, and explanatory in nature to explain the internal and external factors influencing mangrove rehabilitation. SWOT analysis is used to formulate mangrove forest rehabilitation strategies, which are then further elaborated using the IFAS and EFAS matrices.

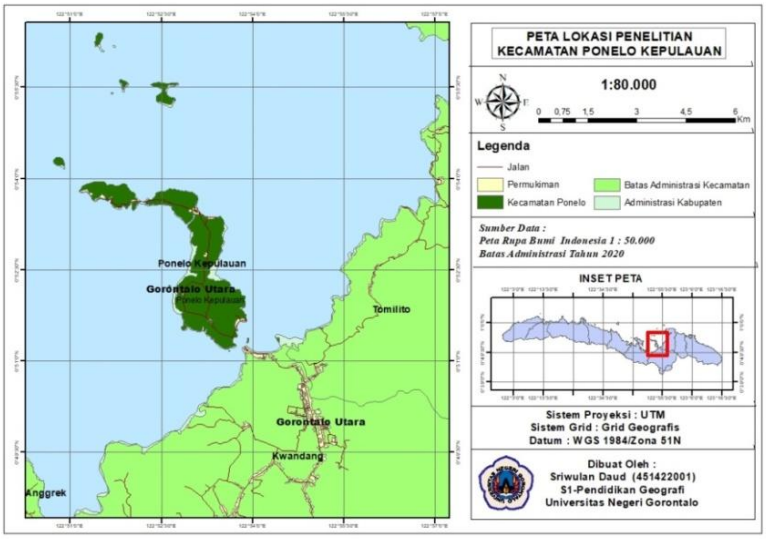


Figure 1. Research location map

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3. RESULTS AND DISCUSSION

The results of interviews with coastal communities and village government officials in Ponelo Kepulauan District indicate that the condition of mangrove forests has declined both in terms of area and ecosystem quality during the period 2010–2024. This decline is marked by the reduction of mangrove cover in several coastal areas and the diminished function of mangroves as natural coastal barriers and marine biota habitats.

This damage is caused by natural factors such as coastal abrasion, ocean waves, and the impact of climate change, as well as human activities such as land conversion into residential areas and fish ponds, illegal logging, and weak area monitoring. This is consistent with the results of spatial analysis, which indicate a decline in mangrove area.

The village government stated that rehabilitation efforts have been carried out through mangrove planting programs; however, these have not been optimal due to budget constraints, lack of technical assistance, weak post-planting maintenance, and community involvement that remains temporary and not yet sustainable. This condition indicates that the success of rehabilitation is not determined solely by planting activities, but is highly dependent on long-term management, post-planting maintenance, and the active participation of coastal communities. As emphasized by Melo et al. (2019), sustainable mangrove management is influenced by the strengthening of local institutions and community involvement.

Based on SWOT analysis, the strategy for mangrove rehabilitation in this area is influenced by internal factors consisting of strengths and weaknesses, as well as external factors encompassing opportunities and threats. The main strengths include the significant ecological and economic potential of mangroves, support from the community and government, and previous experience in planting. On the other hand, the existing weaknesses include the lack of sustainability in rehabilitation activities, inadequate post-planting maintenance, limited facilities and infrastructure, and low public knowledge regarding mangrove conservation. In addition, there are opportunities that can be utilized, such as collaboration with the government, NGOs, and universities, the development of ecotourism and environmental education, as well as the improvement of coastal community economies. However, the threats faced include land conversion, abrasion, climate change, illegal logging, and environmentally unfriendly coastal development.

The results of the IFAS–EFAS calculation show that the total internal factor score (IFAS) is 0.95, derived from the difference between strengths (1.65) and weaknesses (0.70). Meanwhile, the external factor score (EFAS) is 1.15, obtained from the difference between opportunities (1.80) and threats (0.65). These scores are then plotted at coordinates X = 0.95 and Y = 1.15, placing the mangrove rehabilitation strategy in Quadrant I. This position indicates that internal conditions are relatively strong and supported by significant external opportunities, so the appropriate strategy is the Strengths-Opportunities (SO) Strategy, which leverages strengths to optimize opportunities. These findings are consistent with the results of the study by Melo et al. (2020) in Kwandang District, which emphasized that the sustainability of mangrove management is determined not only by ecological aspects but also influences theOleh karena itu, diperlukan strategi pengelolaan yang terintegrasi. Thus, the SO strategy in mangrove rehabilitation can be implemented through optimization of the ecological and economic potential of mangroves, as well as strengthening collaboration with the government, NGOs, and universities.

3.1. SWOT Matrix

The results of the identification of internal and external factors are then compiled into a SWOT Matrix and a SWOT Strategy Matrix to formulate the appropriate mangrove rehabilitation strategy.

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Table 1. SWOT Matrix of Mangrove Forest Rehabilitation Strategy in Ponelo Kepulauan Subdistrict, North Gorontalo Regency

Internal Factor	**Strengths (Strengths – S)**	**Weaknesses (Weaknesses – W)**
	Mangrove forests have significant ecological and economic potential.	Mangrove rehabilitation has not yet been carried out sustainably.
	Community support for mangrove rehabilitation activities is quite good.	Lack of post-planting mangrove maintenance.
	The village government and relevant agencies support the mangrove rehabilitation program	Public knowledge about mangroves and ecotourism remains limited
	Mangrove planting activities have previously been carried out in the research area	Supporting facilities and infrastructure for mangrove rehabilitation are still inadequate.
	Mangroves provide benefits for coastal area protection and the environment	Promotion and outreach regarding the importance of mangroves remain limited.
External Factor	**(Opportunities – O)**	**(Threats – T)**
	There are opportunities for collaboration on mangrove rehabilitation with the government, NGOs, and universities.	Conversion of mangrove land into residential areas
	Mangroves have the potential to be developed as ecotourism and environmental education facilities.	Coastal abrasion and climate change that accelerate mangrove degradation.
	Mangrove rehabilitation has the potential to improve the coastal community economy	Mangrove damage due to age/natural factors
	The opening of new employment opportunities for coastal communities.	Environmentally unfriendly coastal development activities.

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Table 2. SWOT Strategy Matrix

	Opportunity (O)	**Threat(T)**
Strength(S)	1. Optimizing the potential of mangroves as community-based ecotourism. 2. Strengthening collaboration between the community, village government, and related institutions in mangrove rehabilitation. 3. Developing mangroves as a means of environmental education.	1. Utilizing support from the village government and the community to prevent the conversion of mangrove land. 2. Strengthening the monitoring of mangrove areas to reduce illegal logging and mangrove degradation.
Weakness (W)	1. Enhancing community knowledge and capacity through mangrove rehabilitation and management training. 2. Provision of mangrove rehabilitation facilities and infrastructure through collaboration with external parties. 3. Increasing promotion and outreach on the importance of mangroves to the community.	1. Promoting sustainable mangrove rehabilitation through post-planting maintenance. 2. Reducing pressure on mangrove areas through educational and participatory approaches with the community.

Table 3. Results of Ifas-Efas Calculation for Mangrove Forest Rehabilitation Strategy in Ponelo Kepulauan Subdistrict, North Gorontalo Regency

NO	**Internal factor**	**Weight**	**ranting**	**Score Weight**
	Strength (S)			
1	Ecological and economic potential of mangroves	0,15	4	0,6
2	Community support	0,1	3	0,3
3	Village government support	0,1	3	0,3
4	Mangrove planting experience	0,08	3	0,24
5	The benefits of mangroves for coastal protection	0,07	3	0,21

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	Total Strength (S)			**1,65**
	Weakness (W)			
1	Rehabilitation is not yet sustainable	0,15	1	0,15
2	Lack of post-planting care	0,15	1	0,15
3	Public knowledge remains low	0,1	2	0,2
4	Limited facilities and infrastructure	0,06	2	0,12
5	Promosi dan sosialisasi minim	0,04	2	0,08
	Total weaknesses(w)	**1**		**0,7**
	Total Skor IFAS			**0,95**
	Opportunity (O)			
1	Collaboration with government, NGOs, universities	0,15	4	0,6
2	Mangrove ecotourism potential	0,15	3	0,6
3	Improvement of community economy	0,1	3	0,3
4	New job opportunities	0,1	3	0,3
	Total Opportunity (O)	0,5		1,8
	Threat (T)			
1	Land use conversion	0,2	1	0,2
2	Abrasion and climate change	0,15	1	0,15
3	Illegal logging	0,1	2	0 ,2
4	Environmentally unfriendly coastal development	0,05	2	0,1
	Total Threat (T)	**0,5**		**0,65**
	Total Score EFAS	**1**		**1,15**

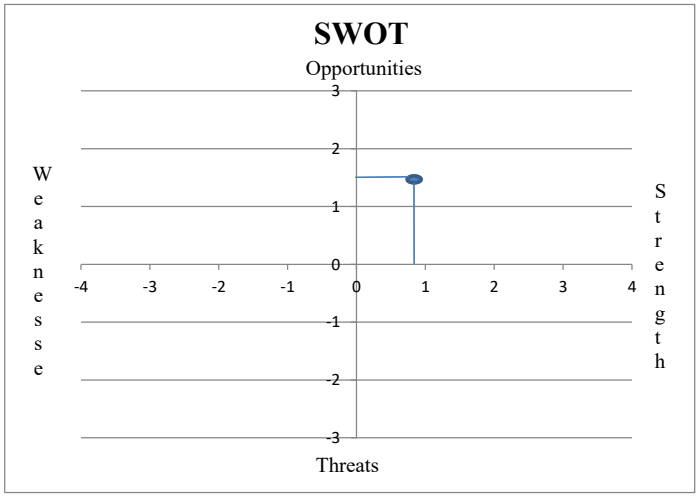


Figure 2. Ifas-Efas Diagram for Mangrove Forest Rehabilitation Strategy

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4. CONCLUSION

Based on the research results, it can be concluded that the mangrove forest condition in Ponelo Kepulauan District is experiencing degradation influenced by natural factors and human activities. Nevertheless, this area still has significant ecological and economic potential and is supported by the role of the community and village government in mangrove rehabilitation efforts.

The results of the SWOT analysis indicate that the mangrove rehabilitation strategy falls within Quadrant I (Opportunities), showing that internal and external strengths are similar in magnitude. The results of the SWOT analysis indicate that the mangrove rehabilitation strategy is positioned in Quadrant I (Strengths – Opportunities), which suggests that internal and external strengths are nearly equal. Based on this, the most effective rehabilitation strategy is to leverage the potential of mangroves and stakeholder support to optimize collaboration, ecological development, and community capacity building.

Mangrove rehabilitation in Ponelo Kepulauan District needs to be directed toward an ecologically based and community participatory rehabilitation approach, not only through planting activities, but also through post-planting maintenance, institutional strengthening, and raising environmental awareness. This strategy is expected to support the sustainability of the mangrove ecosystem while also improving the welfare of coastal communities.

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6. REFERENSI

Bayraktarov, E., Saunders, M. L., Abdullah, S., Mills, M., Beher, J., Possingham, H. P., Mumby, P. J., & Lovelock, C. E. (2016). The cost and feasibility of marine coastal restoration. *Ecological Applications*, 26(4), 1055–1074.

Datta, D., Chattopadhyay, R. N., & Guha, P. (2017). Community-based mangrove management: A review on status and sustainability. *Ocean & Coastal Management*, 144, 34–43.

David, F. R. (2019). *Strategic Management: Concepts and Cases*. Pearson.

Ferrell, O. C., & Hartline, M. (2018). *Marketing Strategy*. Cengage Learning.

Friess, D. A., Rogers, K., Lovelock, C. E., Krauss, K. W., Hamilton, S. E., Lee, S. Y., Lucas, R., Primavera, J., Rajkaran, A., & Shi, S. (2019). The state of the world's mangrove forests: Past, present, and future. *Annual Review of Environment and Resources*, 44, 89–115. https://doi.org/10.1146/annurev-environ-101718-033302

Grant, R. M. (2016). *Contemporary Strategy Analysis: Text and Cases* (9th ed.). John Wiley & Sons.

Melo, R. H., & Samatowa, L. (2023). Analisis vegetasi mangrove di Desa Katialada, Bulalo, Leboto, Botungobungo, Kecamatan Kwandang Gorontalo Utara. *Jurnal Normalita*, 11(2), 375–381.

Melo, R. H., Kusmana, C., Eriyatno, & Nurrochmat, D. R. (2019). A stakeholder analysis of sustainable mangrove management in Kwandang, sub-district of North Gorontalo district. *IOP Conference Series: Earth and Environmental Science*, 399, 012071. https://doi.org/10.1088/1755-1315/399/1/012071

Melo, R. H., Kusmana, C., Eriyatno, & Nurrochmat, D. R. (2020). Pengelolaan hutan mangrove berbasis multidimensional scaling (RAP-Mforest) di Kecamatan Kwandang, Indonesia. *Biodiversitas Journal of Biological Diversity*, 21(4), 1352–1357. https://doi.org/10.13057/biodiv/d210411

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doi: 10.37905/jage.v5i1.38598 ejurnal.ung.ac.id/index.php/jage

Melo, R. H., Niode, A. S., & Popoi, I. (2023). Valuasi nilai ekonomi langsung sumber daya hutan mangrove di Kecamatan Tilamuta Kabupaten Boalemo. *Jurnal Normalita*, 11(2), 395–403.

Melo, R. H., Niode, A. S., Pambudi, M. R., Layaa, N., Masruro, M. I. L. P., & Ninasafitri. (2024). Strategic model for mangrove forest resource management in Boalemo District, Gorontalo Province. *Jambura Geoscience Review*, 6(2), 85–95.

Pearce, J. A., & Robinson, R. B. (2019). *Strategic Management: Planning for Domestic & Global Competition*. McGraw-Hill Education.

Riyanto, D. Y., & Fianto, A. Y. A. (2021). Strategi analisis SWOT sebagai pengembangan wisata ekowisata Clungup Mangrove Conservation Malang. *Jurnal Universitas Dinamika*, 104–105.

Romañach, S. S., DeAngelis, D. L., Koh, H. L., Li, Y., Teh, S. Y., Raja Barizan, R. S., & Zhai, L. (2018). Conservation and restoration of mangroves: Global status, perspectives, and prognosis. *Biological Conservation*, 220, 108–115.

Saraswati, M. K., & Adi, E. A. W. (2022). Pemindahan ibu kota negara ke Provinsi Kalimantan Timur berdasarkan analisis SWOT. *Jurnal Ilmu Sosial dan Pendidikan (JISIP)*, 6(2), 4044–4045.

Spalding, M., McIvor, A., Tonneijck, F. H., Tol, S., & van Eijk, P. (2016). *Mangroves for coastal defence and ecosystem services*. Wetlands International & The Nature Conservancy.

Thompson, A. A., Strickland, A. J., & Gamble, J. E. (2019). *Crafting & Executing Strategy: The Quest for Competitive Advantage: Concepts and Cases*. McGraw-Hill Education.

Wheelen, T. L., & Hunger, J. D. (2017). *Strategic Management and Business Policy: Globalization, Innovation and Sustainability*. Pearson.

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