Fisheries Journal, 15 (3), 1380-1387 (2025)
http://doi.org/10.29303/jp.v15i3.1536

THE ROLE OF STAKEHOLDERS IN THE MANAGEMENT OF MANGROVE AND CRAB CONSERVATION AREAS (KKMK) IN TARAKAN CITY

Peran Stakeholder Dalam Pengelolaan Kawasan Konservasi Mangrove Dan Kepiting (KKMK) Kota Tarakan

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(Received May 3th 2025; Accepted June 20th 2025)

ABSTRACT

Mangrove ecosystem management in the Mangrove and Crab Conservation Area (KKMK) requires active collaboration from various stakeholders to achieve ecological and socio-economic sustainability. The research objective is to identify and explain the role of each stakeholder in the sustainability of KKMK management. The method used in this research is descriptive quantitative by collecting data and information through observation, interviews, and documentation. The results showed that there are 15 parties involved in the management of KKMK, and the role of each stakeholder is divided into four quadrants, namely the subject quadrant occupied by community groups consisting of Baya Damo Laid (BDL), fish fishermen, and crab fishermen, the key players quadrant occupied by the City Government, DPRKKP, DLH, PUPR, BPN, and Polres, the context setter quadrant occupied by Pertamina, PLN, and BPKIM, and the crowd quadrant occupied by Tarakan Tengah Village, KPH, and DKP.

Key words: Collaborative management, Conservation, Stakeholder, Tarakan

ABSTRAK

Pengelolaan ekosistem mangrove di Kawasan Konservasi Mangrove dan Kepiting (KKMK) memerlukan kolaborasi aktif dari berbagai *stakeholders* untuk mencapai keberlanjutan ekologis dan sosial ekonomi. Tujuan penelitian adalah untuk mengidentifikasi dan menjelaskan peran setiap *stakeholders* dalam keberlanjutan pengelolaan KKMK. Metode yang digunakan dalam penelitian ini adalah deskriptif kuantitatif dengan melakukan pengumpulan data dan informasi melalui observasi, wawancara dan dokumentasi. Hasil penelitian menunjukkan bahwa terdapat 15 pihak yang terlibat dalam pengelolaan KKMK dan peran masing-masing *stakeholders* terbagi menjadi empat kuadran yaitu kuadran s*ubject* ditempati oleh kelompok

masyarakat yang terdiri dari Baya Damo Laid (BDL), nelayan ikan dan nelayan kepiting, kuadran *key players* ditempati oleh Pemkot, DPRKKP, DLH, PUPR, BPN, dan Polres, kuadran *context setter* ditempati oleh Pertamina, PLN, dan BPKIM dan kuadran *crowd* ditempati oleh Kelurahan Tarakan Tengah, KPH dan DKP. Peran masing-masing s*takeholders* di KKMK sangat menentukan kebijakan dan strategi dalam keberlanjutan pengelolaan ekosistem mangrove.

Kata Kunci: Konservasi, Pengelolaan kolaboratif, Stakeholder, Tarakan

INTRODUCTION

The mangrove ecosystem on Tarakan Island plays an important role in maintaining the stability of coastal areas, namely as a natural fortress in reducing erosion and seawater intrusion. Mangrove forests are able to protect the island from erosion and seawater intrusion, increase soil stability and can prevent damage to agricultural land and coastal community settlements (Fiqriansyah *et al.,* 2020). In addition, the existence of the mangrove ecosystem on Tarakan Island also greatly determines the productivity of waters and catches so that this is correlated with fishery production and community welfare. Mangroves support the livelihoods of communities that depend on fisheries by providing a nursery and spawning ground for fish and other important invertebrates (Arfan *et al.,* 2023). Furthermore, the mangrove ecosystem can also contribute to increasing marine fisheries productivity and is able to create economic opportunities for coastal communities through sustainable fishery resources (Salma *et al.,* 2022).

Tarakan Island has a mangrove area of around 1,587 ha and continues to experience a decrease in area to 766 ha which has the potential to cause abrasion and reduced land area (Siahaya *et al.,* 2016). One of the mangrove forests that has experienced a significant decrease in area is the Boom Panjang Mangrove and Crab Conservation Area (KKMK). This mangrove degradation is caused by the conversion of mangrove forests into traditional ponds and settlements, this also has an impact on changes in the structure of the mangrove community (Yulma & Wijayanti, 2024). Efforts to reduce mangrove damage in KKMK are by carrying out collaborative management by involving the roles of various parties including local governments, the private sector and local communities. Mwamuye *et al.* (2021), stated that from a sustainability perspective, mangrove forest management needs to utilize a multi-stakeholder approach consisting of collaboration between the government, local communities, and private organizations in managing natural resources so that a shared commitment is created in protecting the mangrove ecosystem through inclusive and sustainable policies. The purpose of this study is to identify and explain the role of each stakeholder in the sustainability of KKMK management.

RESEARCH METHODS

Time and Place of Research

The research was conducted in the Mangrove and Crab Conservation Area (KKMK) of Tarakan City from June to August 2024 (Figure 1).

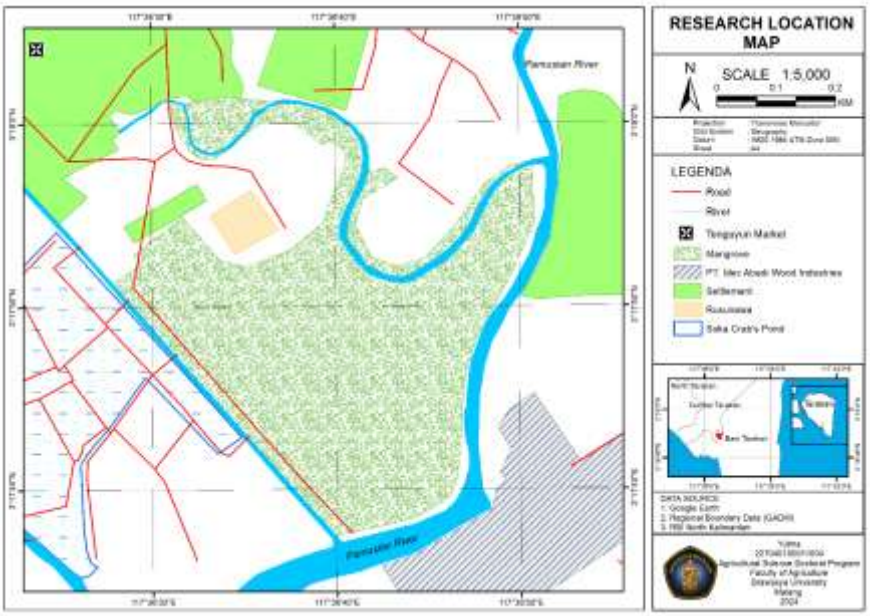

Figure 1. Research Location Map

Research methods

The method used in this study is quantitative descriptive by explaining the characteristics of the phenomenon or condition of mangrove management in KKMK. This study will focus on the role of stakeholders in the management of KKMK consisting of 15 parties, namely the Tarakan City Regional Government (Pemkot), Tarakan City Environmental Service (DLH), Tarakan City Public Housing and Settlement Area and Land Service (DPRKPP), Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN), Public Works and Spatial Planning Service (PUPR), Tarakan Police (Polres), Pertamina, State Electricity Company (PLN), Tarakan City Fish Quarantine and Quality Control Center (BKIPM), Tarakan Tengah Village, Tarakan City KPH UPTD, Tarakan City Fisheries and Marine Service (DKP), Baya Damo Laid (BDL), Crab fishermen, Fish fishermen. This study uses a sampling technique with certain considerations or purposive sampling based on the level of respondent's understanding of mangrove management and utilization in KKMK. Respondents used in this study consisted of: 5 community leaders, 11 fishermen groups, and 9 stakeholders. Data and information collection related to the role of stakeholders in KKMK by conducting observations, interviews and documentation.

Data Analysis

The analysis of stakeholder roles was conducted by interpreting the matrix of interests and influence of stakeholders on the management of KKMK using a stakeholder grid consisting of four quadrants as key players, context setters, subjects, and crowds, where the quadrant position can illustrate the position and role played by each stakeholder (Reed *et al.,* 2009). The stages of data analysis and interpretation obtained in the study were data reduction, data presentation, and verification. Furthermore, the data obtained will be tabulated in the form of a table and described according to their respective roles in the management of KKMK.

RESULT

Stakeholders involved in the management of the KKMK mangrove ecosystem consist of 15 parties, namely the Tarakan City Regional Government (Pemkot), Tarakan City Environmental Service (DLH), Tarakan City Public Housing and Settlement Areas and Land Service (DPRKPP), Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN), Public Works and Spatial Planning Service (PUPR), Tarakan Police (Polres), Pertamina, State Electricity Company (PLN), Tarakan City Fish Quarantine and Quality Control Center (BKIPM), Tarakan Tengah Village, Tarakan City KPH UPTD, Tarakan City Fisheries and Marine Service (DKP), Baya Damo Laid (BDL), Crab fishermen, Fish fishermen (Table 1).

Table 1. Role of stakeholders involved in KKMK mangrove management

No.	*Stakeholders*	Background	Role
1.	Tarakan City Regional Government (Pemkot)	Government	Land acquisition and establishment of conservation areas
2.	Tarakan City Environmental Service (DLH)	Government	Responsible for conservation areas and environmental permits
3.	Tarakan City Public Housing and Settlement Area and Land Agency (DPRKPP)	Government	Responsible for conservation areas
4.	Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN)	Government	Responsible for conservation areas
5.	Department of Public Works and Spatial Planning (PUPR)	Government	Responsible for conservation areas
6.	Tarakan Police Station (Polres)	Government	Responsible for monitoring conservation areas
7.	Pertamina	Government	Cooperating with the government in preserving the mangrove ecosystem
8.	State Electricity Company (PLN)	Government	Cooperating with the government in preserving the mangrove ecosystem
9.	Tarakan City Fish Quarantine and Quality Control Center (BKIPM)	Government	Cooperating with the government in preserving the mangrove ecosystem
10.	Central Tarakan Subdistrict	Government	Cooperate with the government in
11.	UPTD KPH Tarakan City	Government	Cooperating with the government in preserving the mangrove ecosystem
12.	Tarakan City Fisheries and Marine Service (DKP)	Government	Cooperating with the government in preserving the mangrove ecosystem
13.	Baya Damo Laid (BDL)	Public	Utilization of mangrove ecosystems
14.	Crab Fisherman	Public	Utilization of mangrove ecosystems
15.	Fisherman	Public	Utilization of mangrove ecosystems

DISCUSSION

Identification of Stakeholders Roles

Identify the role of stakeholders in KKMK to ensure individuals and entities involved in managing the area. Detailed identification of stakeholder roles is essential to guide the design of effective management programs involving community participation (Aulia & Agustrisno, 2022). Stakeholders involved in the management of KKMK are different from stakeholders who play a role in managing the Mangrove and Bekantan Conservation Area (KKMB), which totals 13 stakeholders. This is because KKMB has officially become an ecotourism area so that it receives a lot of support through cooperation in the form of written agreements and also through Corporate Social Responsibility (CSR) programs from various parties (Herlangga & Basuni, 2019).

Stakeholders Categorization

Stakeholders in mangrove management can be categorized based on their roles, interests, and influence in managing the mangrove ecosystem. Interest is the magnitude of stakeholders' needs for the existence of KKMK, while influence is the magnitude of stakeholders' power to impact KKMK. The magnitude of stakeholders' interests in KKMK is assessed from their involvement in the area, the benefits obtained, and the role they play in the area. Stakeholders consisting of government, community groups, NGOs, and the private sector have different motivations and levels of involvement in mangrove ecosystem management (Lhosupasirirat *et al.,* 2023; Suswadi *et al.,* 2023). The magnitude of stakeholders' interests and influence on KKMK are then mapped into a stakeholder matrix (Figure 2).

The subject quadrant is occupied by community groups consisting of Baya Damo Laid (BDL), fish fishermen and crab fishermen. These stakeholders have a high interest in the existence of KKMK but have low influence so that empowerment efforts are needed for KKMK management. Community groups can be involved in planning, implementation and decision-making activities. However, based on field observations, the ecological pressure on the KKMK mangrove ecosystem increases along with the increasing number of members of the Baya Damo Laid (BDL) fishermen group who cut down mangrove forests and turn them into settlements. In addition, fish and crab fishermen use KKMK as a fishing ground so that this profession can increase their income and improve their welfare. Conflicts over the use of mangrove resources require a proportional management approach involving all stakeholders including fishermen, this aims to reduce resource reduction and environmental degradation (Bidayani *et al.,* 2024).

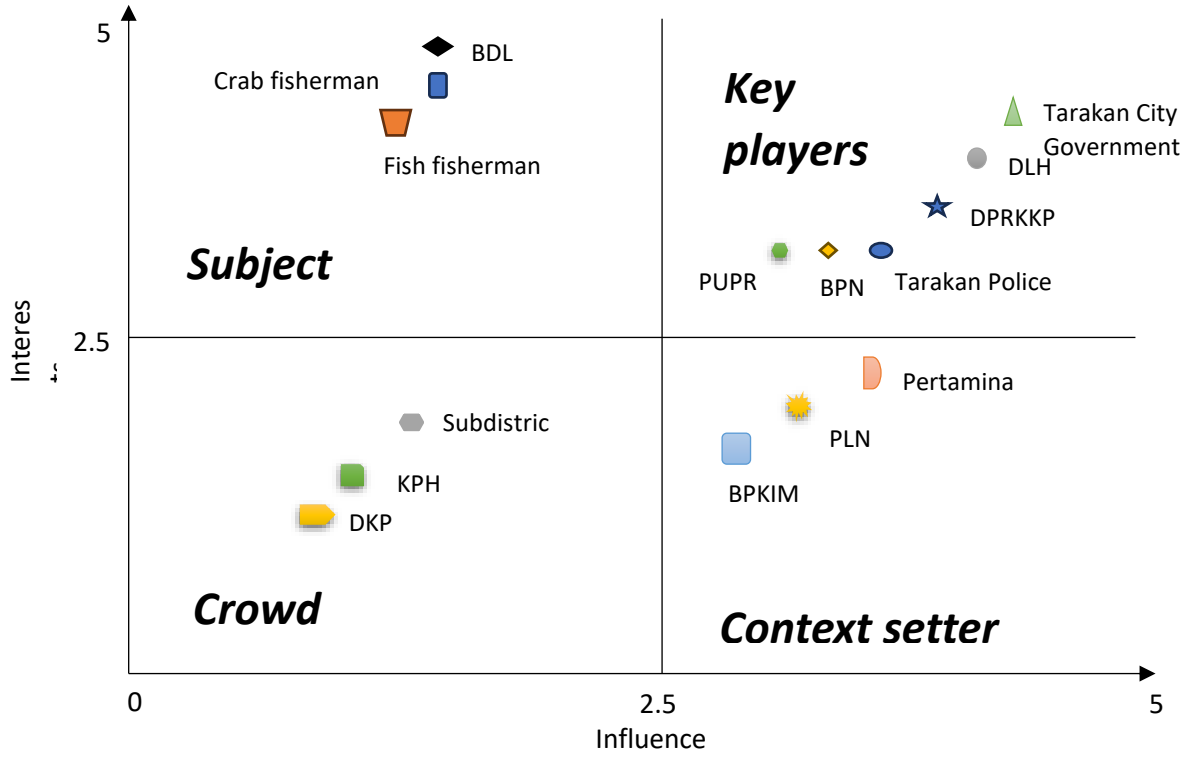

Figure 2. Matrix of stakeholder interests and influence

Stakeholders who act as key players are the City Government, DPRKKP, DLH, PUPR, BPN, and Polres. Key players are the most critical group because they have high interests and influence in the success of mangrove ecosystem management. The City Government has an important role in land acquisition and the determination of mangrove conservation areas. The City Government has high interests and influence because it has the authority to manage KKMK. Stakeholders with legal responsibilities, especially in policy making, have an important position in determining the formulation and implementation of management strategies (Yuwafi *et al.,* 2023). In addition to the City Government, stakeholders from the DPRKKP, DLH, PUPR, BPN, and Polres also have an important role because they are responsible for the KKMK mangrove ecosystem related to legality, spatial planning, development and supervision of the area. Collaborative mangrove ecosystem management activities by facilitating local stakeholders and the government at every stage of conservation activities will create an effective and efficient work plan (Golebie *et al.,* 2022).

Pertamina, PLN, and BPKIM act as context setters because they have high influence but low interests. These stakeholders collaborate with Tarakan City Government agencies in preserving the mangrove ecosystem. Efforts to preserve the KKMK mangrove ecosystem include building seed houses, mangrove ringworm (*Rhizophora mucronata*) nurseries, planting and releasing mangrove crab (*Scylla serrata*) seeds. Stakeholders in this quadrant can provide information related to planting techniques, selection of types and provision of seeds and marketing of products that can support improving community welfare (Garsetiasih & Alikodra, 2015). Although these stakeholders have a positive influence, the effectiveness of the role of context setter actors can be hampered by economic pressures because government policies prioritize activities such as cultivation rather than mangrove forest conservation (Heck *et al.,* 2024). Furthermore, interaction is needed between key players and context setters in facilitating

comprehensive stakeholder involvement so as to enable a better response to community needs during rehabilitation activities (Migliorini et al., 2025).

The role of the crowd in the management of the KKMK mangrove ecosystem is very small because these stakeholders only help and carry out tasks ordered by the Tarakan City Government. Participation in activities carried out at KKMK is an activity that synergizes with the City Government, Pertamina, PLN, and BPKIM in planting mangrove seedlings and releasing crab seeds. This quadrant is occupied by the Tarakan Tengah Village, KPH and DKP, where the existence of these stakeholders is characterized by low interests and influence so that they have not been able to play a large role in the management of the KKMK mangrove ecosystem. Integration of key players in making policies can encourage the success of mangrove ecosystem management strategies supported by the role of the crowd (Warningsih *et al.,* 2020).

CONCLUSION

Stakeholders involved in the management of KKMK consist of 15 parties and the roles of these stakeholders are divided into four quadrants, namely the subject quadrant is occupied by community groups consisting of Baya Damo Laid (BDL), fish fishermen and crab fishermen, the key players quadrant is occupied by the City Government, DPRKKP, DLH, PUPR, BPN, and Polres, the context setter quadrant is occupied by Pertamina, PLN, and BPKIM and the crowd quadrant is occupied by Tarakan Tengah Village, KPH and DKP.

ACKNOWLEDGEMENTS

Thanks are addressed to the Indonesian Education Scholarship (BPI), the Center for Higher Education Financing and Assessment Services and the Education Fund Management Institution which have helped fund the 2024 research activities and all parties who assisted in this research activity.

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