

# The Transition of Co-management Practices in a Marine Protected Area: A View from the Bajau Seafaring Nomadic Community in Indonesia

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## ABSTRACT

Customary communities with nature-based livelihoods have ways of knowing and living with their environment that they are best situated to manage. One example of such a group that lives in coastal and small island areas is the semi-nomadic Bajau people. At present, most of them have been sedentary in coastal areas and several Marine Protected Areas (MPA) such as Wakatobi National Park (WNP). They are rarely incorporated into the MPA management system. This research aims to investigate the transitional pattern of co-management in MPA from the view of the Bajau as a maritime-oriented people. This ethnographic study was carried out in five Bajau villages in WNP, Southeast Sulawesi, Indonesia. Interviews and participatory mapping were employed as research methods among related stakeholders to explore the many perspectives on these issues. WNP is starting to put the concept of co-management into practice, yet they face several challenges. However, Bajau communities there face cultural degradation and institutional complexities in inter- and intragroup relations, especially in promoting coastal and marine management. The documented pillars of the Bajau community indicate socio-ecological constraints on their involvement in the co-management transition of WNP. Administration, governance, sustainable resource management, capacity building, locality, and other issues can be addressed via a participatory model, but there will be difficulties to resolve on many levels for this model to prove optimally effective. To justify the need for WNP, Bajau sacred areas as part of traditional ecological knowledge have the prospect of being incorporated into marine co-management schemes.

**Key words :** *Co-management, Bajau, Seafaring Nomads, Marine Protected Areas, Wakatobi National Park*

## Introduction

For decades, there has been a gradual shift from state control of natural resources to community-based stewardship (Foxon *et al.*, 2009; Kelly *et al.*, 2018). This paradigm can undoubtedly help distribute power and shared responsibility for sustainable

natural resources management (Wolff, 2015). As the main resource user, the community is expected to have a crucial role from upstream to downstream in the management system. The state, in this context, is the regulator and partner in retaining the continuity of the program. One program often used to connect the needs of these two actors is found in the model

and practice of co-management (Plummer and Fitzgibbon, 2004; Voorberg and Van der Veer, 2020), especially for protected areas such as Marine Protected Areas (MPA).

Co-management is usually defined as sharing responsibilities for managing specified natural resources between the local community and the state as represented by a particular institution (Carlsson and Berkes, 2005). It is found that in MPAs, co-management improves coastal zone management by enriching biodiversity, conservation targets, monitoring, and evaluation, supporting local ecological practices, and providing means for conflict resolution. The groups that have been involved in this co-management are indigenous peoples and local communities (IPLCs) who nurture nature over generations (von der Porten *et al.*, 2019). Despite its favorable outcome, co-management often faces social and organizational barriers preventing smooth implementation. These include governmental structure and operations, planning and administrative processes, organized opposition from special interests, and obstacles in consensus-building processes (Ayers *et al.*, 2017).

Nevertheless, national parks in Indonesia have activated the co-management practice as outlined in ten new ways of conservation management (Shepherd and Terry, 2004; Wiratno, 2018). This initiative positions communities as subjects and uses a rights-based approach to sustainable resource management. One of the programs carried out by the government through the Ministry of Environment and Forestry of the Republic of Indonesia is the Conservation Partnership Scheme (*Kemitraan Konservasi*). This program involves the community as partners within a group cooperation scheme or village administration area. This program is designed to resolve the potential of tenurial conflict in forest-protected areas (Prayitno, 2020) and meets the expectations and needs of the community around MPAs in Indonesia (Loli *et al.*, 2022).

Co-management is widely practiced in MPAs throughout Asia Pacific countries, where there is a great diversity of ecosystems and social systems. Specifically, there is a high diversity of coral reefs, so much so that this area is often referred to as the "coral triangle." This area covers 200,881 km<sup>2</sup> in the Philippines, Malaysia, Indonesia, Timor-Leste, Papua New Guinea, and the Solomon Islands (White *et al.*, 2014). Several initiatives by international consortiums, non-government organizations,

country hubs, and national and sub-national programs aim to preserve coral diversity and sustain IPLCs and fisheries sectors. This unique marine ecosystem is a significant asset for coastal IPLC communities. In Indonesia, one of the MPAs situated in the coral triangle is Wakatobi National Park (WNP) in Southeast Sulawesi Province. This MPA is the home of customary communities (Indonesian terms for IPLCs) and maritime-oriented communities that are ethnically Bajau (Elliott *et al.*, 2001).

In Wakatobi, a conservation partnership program has been carried out with several community groups, including the Bajau community. As a program under the WNP, a conservation partnership has been implemented for a mangrove planting program in vulnerable coastal areas in Wakatobi (Setyaningrum *et al.*, 2022). However, this program has to date, faced several issues in its implementation, including social change, power relations, and environmental flux. For instance, there have been varying rates of participation, difficulties in identifying local champions, and complications with working through the attitudes and social relations of the Bajau community in Wakatobi. The conflicts and interests of the Bajau in the WNP zonation management have proven difficult in several regards (Clifton and Majors, 2012; Elliott *et al.*, 2001; Helanda and Clifton, 2015). This is a result of the degradation of Bajau customary institutions and the lack of participation and prior consent in the decision-making processes of prior WNP management (Adimu *et al.*, 2017; Clifton, 2013).

As an IPLC, the Bajau have extensive knowledge of marine areas and practices that can be translated to conservation. One example is their relationship with sea spirits, which inform their customary practices, taboos, and sacred areas (Ariando *et al.*, 2022; Basri, 2018). Bajau relations with the sea were not previously considered to be an opportunity for co-management in MPA in the existing WNP management system. Although the Bajau are subject to Community Conserved Areas (CCA) practice, they are not well incorporated into such conservation programs (Lynch and Turner, 2021). Since the Bajau sedentary pattern changed from boathouses to stilt houses, their livelihood has also changed as they have settled in WNP areas. Several Bajau villages are accused of adding more complexity to the WNP management program. This research investigates the deliberation of co-management practices in the MPA related to Bajau communities. From the per-

spectives of the Bajau, socio-ecological values are key attributes in developing a co-management program in the WNP.

## Materials and Methods

### The Bajau in Wakatobi National Park

The Bajau are known as seafaring nomads and have migrated throughout Southeast Asia, including the Philippines, Malaysia, and Indonesia. The large group is now separated by national boundaries, but all Bajau groups speak languages of the same family (*Sinama*), and all groups possess maritime knowledge. The sea is not only a place to make a living but also a socio-cultural space from which their customs and spiritual beliefs arise. The relationship between the Bajau and the sea is expressed in a holistic system of corpus, praxis, and cosmos. Not surprisingly, their marine distributions and settlements are in the world's coral triangle areas, such as around MPAs (marine national parks). In Indonesia, five of the seven marine national parks are inhabited by Bajau communities, one of which is the WNP.

The estimated period of initial Bajau migration from South Sulawesi to the Wakatobi island chain was in the late 1850s (Stacey, 2007). They sailed to Wakatobi in a customary institutional system called *Kepunggawaan*. Initially, Bajau groups arrived in the territory of the Barata Kahedupa customary group on the west coast of the island of Kaledupa called Mantigola or *Menanti Gula* (waiting for palm sugar). Their arrival was welcomed, and their existence was appreciated during that period because they were responsible for guarding the marine areas and bartering fish and other marine products with cassava from Kaledupa communities.

However, cultural conflict arose in 1953 and lasted until the early 1960s. An Islamic separatist movement permeated the Mantigola Bajau, which was growing massively during that period across Sulawesi Island and the small eastern islands of Indonesia. This movement, called *Darul Islam/Tentara Islam Indonesia* (DI/TII) or the Indonesian Islamic Army, aimed to spread religious messages and make an Islamic state in Indonesia (Harvey, 1974). The Bajau in the Mantigola were accused of helping this movement, although the Bajau themselves claimed to perceive the DI/TII groups only as trading partners. In 1957, the Bajau village in Mantigola was burned down by the people of Kaledupa Island.

Afterwards, the Bajau Mantigola community spread out, looking for safer areas and new shelters. Therefore, new villages were founded around and outside of Wakatobi's waters.

In 1963, the conflict ended as the DI/TII movement began to move away from Wakatobi. The Bajau were then asked to return to Mantigola by the people from Kaledupa Island. Some Bajau families have returned to Mantigola, but some did not return as they decided to remain in their new villages of Mola, Sampela, or Lohoa.

In the 1970s, there was a new wave of Bajau migration from Mola to Lamanggau, Tolandono Island, and Tomia Island. This migration was due to the preference for living closer to the Tomia and Kaledupa atolls, as they became the main fishing areas for the Bajau communities. There are currently five Bajau villages in Wakatobi: Mola, Mantigola, Sampela, Lohoa, and Lamanggau (see Figure 1). These Bajau communities constitute 80% of the resource users in WNP, and they depend significantly on marine resources (Wakatobi National Park, 2020).

The Bajau's social and cultural life relies on the proposition of their exposure to the economic system and intercultural relations with the customary communities around them. Meanwhile, customary institutions within the Bajau community system in Wakatobi have vanished. Their customary *Kepunggawaan* system has been entirely assimilated into a village administrative system. Also, their wisdom and comprehensive knowledge, oriented toward the sea, have gradually been lost, and their mindset transformed to become like that of land communities. The desire to own properties and assets in the coastal and marine areas and to have access to capital security is becoming noticeable in the current socio-economic dynamics of Bajau communities in Wakatobi. Bajau villages have turned into fishing and trading centers, and there is a high economic turnover in Wakatobi. Unfair trading and patron-clientship are spreading rapidly due to the conducive environment for executing this capitalist economic system.

Besides the transformation of the socio-economic system, rapid population growth without proper family planning is a challenge for the Wakatobi government. This demographic change is regarded as a threat and a leading factor to other problems such as poverty, early marriage, school dropouts, waste management, and related human-environment de-

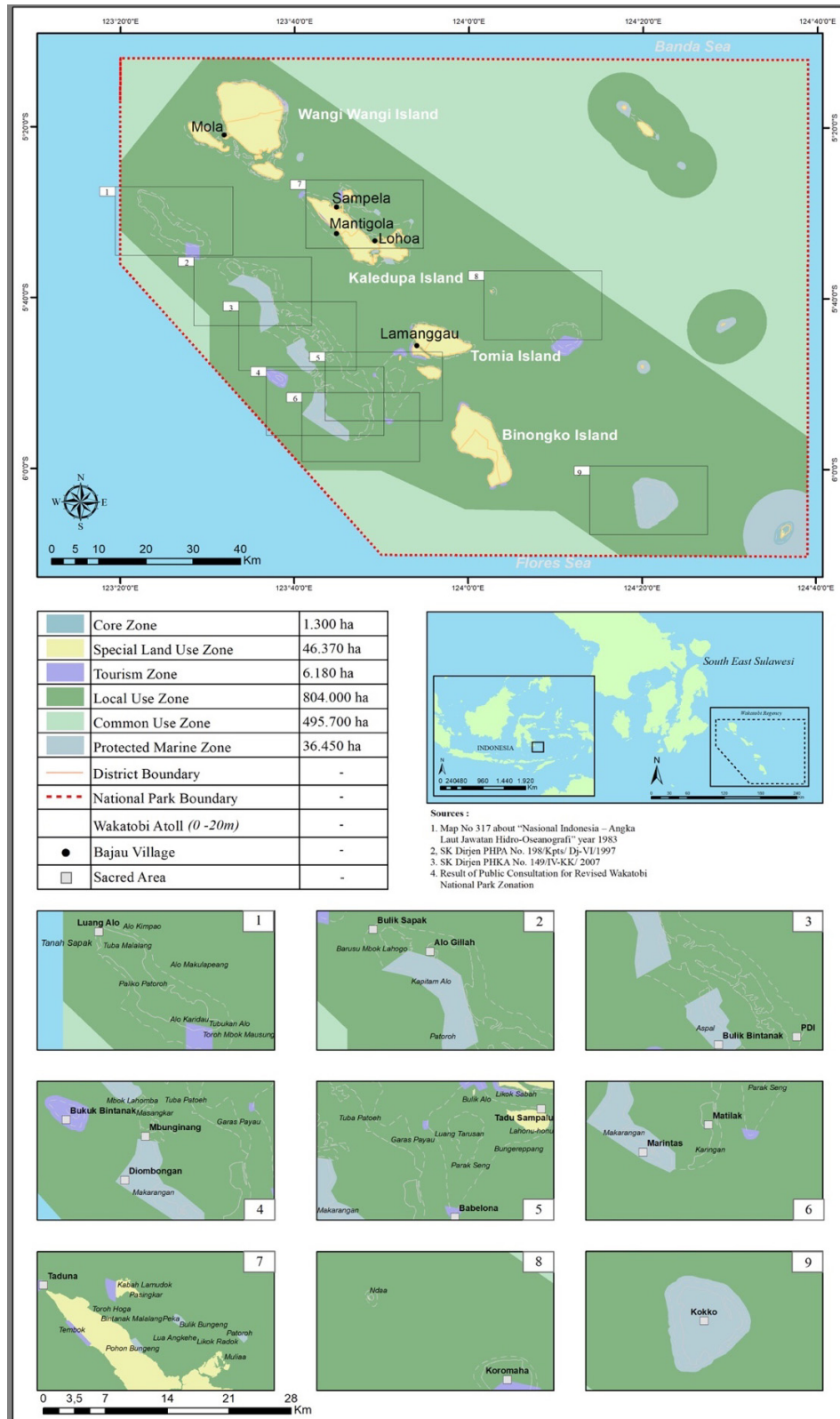


Fig. 1. Sacred areas of Bajau communities in Wakatobi



velopment problems. To add to these problems, development policies and practices in Wakatobi usually overlook Bajau communities, as there are issues of stereotyping and labelling the Bajau as a second-class group. The population of each Bajau community in Wakatobi is presented in Table 1.

The tenurial system in Wakatobi waters recognizes the roles of WNP authority and customary communities. The dominant customary law communities have sea access rights and the right to manage marine areas. In turn, those rights also strengthen their customary practices. However, all the Bajau villages are located in customary community domains. Four out of ten customary communities in Wakatobi have been granted formal acknowledgement as customary law communities

or *Masyarakat Hukum Adat* (MHA) from the Government of Wakatobi. This situation has put the Bajau into an intersection regarding access to coastal and marine areas because they are considered to be migrants. Hence, they do not possess communal rights or power to manage coastal and marine areas customarily.

Several conflict cases have occurred, such as between Mola Bajau and Sara Mandati, regarding residential areas and permits to construct stilt houses in water areas; other cases include that between the Lamanggau Bajau and MHA Kawati Tomia on Tolandono Island regarding access to graves on land areas, between the Lohoa Bajau and the MHA Barata Kahedupa on Darawa Island regarding the exclusive protection area for octopus (*Sasi Gurita*

**Table 1.** The population of Bajau communities in Wakatobi

Bajau Group	Neighbor Customary Community	Administrative Village	Hamlet	Population	Household	Population Total	Household Total
Sampela	MHA Barata Kahedupa	Samabahari, Kaledupa	Sampela	440	74	1999	404
			Wanda	463	119		
			Dikatutuang	561	93		
			Pagana	535	118		
Lohoa	MHA Barata Kahedupa	Tanomeha, South Kaledupa	Lohoa	235	70	235	70
Mantigola	MHA Barata Kahedupa	Mantigola Makmur, Kaledupa	Sejati	365	116	1520	433
			Makmur	404	119		
			Horuo, Kaledupa	538	133		
			Mantigola 2	213	65		
Lamanggau	MHA Kawati Tomia	Lamanggau, Tomia	Lasoilo	330	72	330	72
Mola	Sara Mandati Sara Kapota MHA Kadiye Liya	Mola Bahari, South Wangi-wangi	Sambuah	418	151	7855	2235
			Bintanak	347	107		
			Bunging	514	124		
			Teratai I	450	147		
			Teratai II	246	76		
			Segar	315	96		
			Segar 1	366	109		
			Segar 2	333	103		
			Segar 3	428	104		
			Nelayan	390	106		
			Bahari	706	249		
			Mekar 1	348	99		
			Mekar 2	547	135		
			Minabahari	1223	305		
Sejampangi	1224	324					
Total						11939	3214

*Darawa*), and between the Sampela Bajau and the MHA Barata Kahedupa in Ambeua regarding *Tubba Dikatutuang* (sacred areas) and graves on Hoga Island. The frequency of customary conflicts is predicted to increase due to the current regime's exclusive acknowledgement of MHA rights. This complicated relationship is sometimes used as political capital to reduce the power of Bajau communities in Wakatobi.

Another major issue is the relationship between the Bajau and the WNP management authority. The lack of trust between the Bajau and WNP authority stems from ethnic bias against the Bajau and the fact that some Bajau still utilize illegal and destructive fishing practices. This utilization is a function of economic pressure as well as the decline in Traditional Ecological Knowledge (TEK) and cultural identity. Bajau elders have stated that those who engage in destructive fishing have already lost their TEK and will suffer harsh rebuke from the sea spirit, *Taruak Panyala*. As a result, they will never live a sufficient, happy, prosperous life. These destructive activities are carried out secretly through a hidden market chain that is carefully managed and involves several non-Bajau people from various institutions in Wakatobi. Nevertheless, the WNP authority, which encounters only the perpetrators who are apprehended, has treated all Bajau as enemies of conservation. This has made it challenging to incorporate Bajau communities into co-management practices.

### Data collection and analysis

The theoretical framework of this research includes co-management and its applications from the perspectives of Bajau communities and the WNP authority with regard to institutional arrangements, ecological protection, and socio-economic considerations. As an implementation, this framework explored the grounded issues from the Bajau point of view and related local stakeholders. Based on the complexity and previous research by Ariando and Narumon (2022) and Adimu *et al.* (2017), there are five pillars in the deliberation of a co-management system in WNP and its transition. These pillars reinforce variables of co-management in WNP and the need of the Bajau. The interpretation of this pillar was developed from multi-sources such as academic papers and policy analysis in the Indonesian context. The connection between these pillars [P] is perpendicular and complementary to one another.

[P1] *Administration* – The functions of describing the

necessity of documentation, human resources, and financing schemes for a marine national park.

[P2] *Governance* – The functions of strengthening institutions and management in resolving complexities, social relations, participation, and other pillar functions in marine national parks.

[P3] *Sustainable resource management* – The functions of protecting natural resources and ecosystem services toward good governance from the point of view of the socio-ecological systems, economic development, and institutional support.

[P4] *Capacity building* – The functions of strengthening human resources and program partnership through the proliferation of understanding, collaboration, a sense of ownership, and other forms of participation to support the sustainability of the marine national park program.

[P5] *Localities and extended issues* – The function of considering emerging issues under local dynamics, intercultural relations, environmental threats and responses, and adaptive systems to align the marine national park management system with global needs and changes.

This research was divided into two phases and used two main methods. The first method is multi-sited ethnography in the five Bajau villages (October 2020 – October 2021) to seek a comprehensive understanding of Wakatobi's Bajau communities and cover current issues of intersectionality and their connection to the global context (Falzon, 2016; Hine, 2007). In each village, the main researcher conducted observations for approximately two to three months, depending on the complexity of the information obtained in the Bajau village. The data obtained in this ethnographic method are the community's perspective on MPAs and community activities related to zoning and management, including community expectations regarding the concept and practices of co-management in WNP. This study also used Bajau key informant interviews (n=20) and two group interviews in each of the Bajau villages (10 group interviews in total). Purposive sampling method was used to select the number of informants. The interview for Bajau key informants aimed to get deeper data and confirm the social dynamic of community which were observed from ethnographic step. Then, the group interviews were conducted to get communal information about specific topics such as sacred areas, development timeline, and other community challenges. In the group interview, the researchers also carried out

participatory mapping of sacred areas, fishing grounds, etc., to understand the attitudes and perspectives of the Bajau communities in these areas and to gauge social-cultural conflicts in the areas.

Another data set needed was institutional perspectives related to MPAs, conservation, and coastal community issues. The method used is in-depth interviews with relevant stakeholders (see Table 2) consisting of WNP officers (n=9), local government staff of Wakatobi Regency (n=4), non-government organization staff (n=5), civil society organization representatives (n=9), individuals from the private sector (n=6), and customary community representatives (n=8). The number informant selected was based on purposive sampling method. This interview data collection was carried out from May to October 2021. The data from these interviews were then transcribed and grouped based on the research objective and framework. Data obtained from ethnographic fieldwork in the Bajau communities and interviews with relevant stakeholders were then combined and validated.

**Results and Discussion**

The complexity of the management system in Wakatobi coastal and marine areas depicts the dynamics and diversity of Indonesia, which are both a challenge and an opportunity for a community-based management system. This complexity can evolve into a practical model or become a community bottleneck. In the latter case, the community may face the erosion of cultural identity, increasing

conflicts, and management system failure. This would result from the lack of engagement with the communities and of a right-based approach to carrying out informed consent in development and conservation projects.

The WNP management system is executed by multiple institutions, namely the WNP Authority, the Government of the Wakatobi Regency, and customary coastal institutions. Too often, these institutions view the Bajau as a shadow customary community in Wakatobi. The historical background and acknowledgement of the Wakatobi Regency (established in 2003) existed after the WNP (established in 1996), so their area management overlapped. The existence of multilevel stakeholders makes it necessary for adaptive management and a commitment to an inclusive system.

The level of participation of multiple actors in planning and decision-making processes are fundamental problems for the WNP management system. The need for reflection and paradigmatic shifts to community-based area management are key attributes of the management model that would best fit Wakatobi’s cultural complexity. However, the current implementation shows the exclusive domain of WNP governance that does not encourage community participation, especially from Bajau communities. Both theoretical propositions of co-management and community participation fail to explicitly discuss organizational interests. These challenges are analyzed into internal and external factors, as shown in Table 3.

As presented in Table 3, these challenges will be

**Table 2.** The interview guidelines

Informant	Expected information
WNP officer	<ul style="list-style-type: none"> <li>• Co-management program (past, current, and previous)</li> <li>• Challenges and opportunities in co-management</li> <li>• Initiative related to Bajau communities</li> <li>• Future look of coastal and marine management system in Wakatobi</li> </ul>
Local government	
Non-government organization staff	
Civil society organization representatives	<ul style="list-style-type: none"> <li>• Local contexts in Wakatobi</li> <li>• Initiatives related to Bajau communities</li> <li>• Future look of coastal and marine management system in Wakatobi</li> </ul>
Individuals from the private sector	<ul style="list-style-type: none"> <li>• Local contexts in Wakatobi</li> <li>• Future look of coastal and marine management system in Wakatobi</li> </ul>
Customary community representatives	<ul style="list-style-type: none"> <li>• Local contexts in Wakatobi</li> <li>• Customary coastal and marine management in relation to Bajau</li> </ul>

**Table 3.** Challenges of Wakatobi National Park management

Internal drivers	External drivers
<ul style="list-style-type: none"> <li>• The status of the WNP area that overlaps or has the same management space between various parties (local government, community, and other institutions)</li> <li>• Waste management and working towards clean and healthy environment is not fulfilled</li> <li>• Illegal and destructive practices threaten natural resources and ecosystems, such as protected marine biota catching, illegal fishing, bomb fishing and chemical fishing, sea sand and coral mining, beach reclamation, and mangrove encroachment and settlements in coastal areas</li> <li>• The positionality of WNP as open water areas/ open access and national shipping lanes</li> <li>• The ratio of officers to the area is not compatible (human resources)</li> <li>• The availability of transportation modes to/from and within the Wakatobi area is still lacking</li> </ul>	<ul style="list-style-type: none"> <li>• The activity of fishers from outside Wakatobi operating within the WNP area</li> <li>• Regional planning and development activities by the local government do not pay attention to aspects of environment sustainability</li> <li>• Marine debris from local people practicing disposal of garbage and ship waste directly into the sea</li> <li>• Tourist activities that damage the environment do not match the local culture and exceed the carrying capacity</li> </ul> <p>Climate change causes coral bleaching, sea-level rise, and decreasing biodiversity,</p>

used as a situated indicator in the transition of the management system in Wakatobi. As local representatives in this model, the Bajau community views these challenges similarly when implementing their community dynamics. We conclude that the developed model aligns with the current management considerations. This information and evidence from the Bajau are used to build indicators of adaptive management according to community needs. Other indicators are built based on the review of various interviews with related stakeholders.

### The transition toward co-management

Transitioning from a system currently in operation to a new one is a considerable management challenge. It takes a solid commitment to adopt all of the proposed mechanisms. The effort is complicated by the fact that decentralized management in the area has been primarily donor-driven and only granted partial autonomy to local stakeholders (Cinner *et al.*, 2012). Moreover, historical background and environmental threats shape people's vulnerability levels (Chen and Lopez-Carr, 2015); in the WNP context, the management system affects fishers in coastal communities, and pre-existing power relations are unequal. In the complex case of the WNP, there is a need for lengthy negotiations and communication development in multi-layered planning. Adding to all of this, there is still resistance by some local communities to the incorporation of the Bajau

into the management system, resulting in their continual peripheral status and role in Wakatobi's coastal and marine system. In more details, the significant findings were analyzed into the framework, the data shows.

- *Administration*

The administrative works can help pinpoint a vital process toward co-management transition. Since the establishment of WNP, no significant participatory mapping has been done to engage the local community aspirations regarding the socio-cultural challenges in understanding marine zonation. This lack of action explains the absence of mechanisms in the management system that can facilitate future community-based development. To meet administrative needs for a transition to co-management, a participatory map is urgently needed to evaluate which areas should be protected for biodiversity and what adaptive mechanisms are suitable for current challenges. This action is important for incorporating local knowledge into the practice of sustainable resource management, especially in Bajau communities. Hence, the involvement of experts, academics, and consent from local customary institutions are essential for this mechanism. For instance, it aligns with several global initiatives by international conservation organization which support the IPLCs to be incorporated in global solution for environmental crises (WWF *et al.*, 2021).



Moreover, there is no sufficient and intensive supervision, which impairs the effectiveness of biodiversity protection in WNP areas. Encompassing approximately 1,390,000 hectares (Wakatobi National Park, 2020), WNP is the fourth largest national park under the Ministry of Environment and Forestry. The WNP has three sub-resort administrative offices, or *Seksi Pengelolaan Taman Nasional* (SPTN). SPTN-1 is on Wangi-Wangi Island, SPTN-2 is on Kaledupa Island, and SPTN-3 is on Tomia Island. Limited resources and accessibility complicate the supervision of the vast area of WNP. For example, the core zone of WNP, Moromaho Island, is located in the southernmost area (see Figure 1), far from the nearest SPTN in Tomia and the nearest community village. Moromaho Island is administratively part of MHA Sara Saranowali but is not attended to or protected by their customary laws. There seems to be no sharing management mechanism to practically engage the MHA Sara Saranowali in working with WNP. MHA Sara Saranowali only protects their customary areas - namely *Kaombo*, which is located near their settlement. Given such situations, it would make sense for WNP authorities to consider the involvement of MHAs and the Bajau in their activities: Doing this could reduce management costs related to information gathering, strategy coordination and the execution of administrative tasks.

- *Governance*

In the past two decades, WNP management has been concerned with destructive fishing activities, coral reef preservation, seagrass and mangrove conservation, economic diversification, and tourism development in Wakatobi (Elliott *et al.*, 2001). Those concerns have not changed much. This generates problems for a transition to co-management because the narrative emphasizing illegal and destructive fishing creates an adversarial scenario favoring certain powerful institutions over already-disadvantaged Bajau communities in WNP. There is a need to resolve such conflicts, which have resulted in graduated sanctions that have not proven effective and outdated conservationist approaches to management that have marginalized potential partners. Outdated management approaches looked at conservation issues only from the lenses of forestry officials, ecologists, marine conservationists, and biologists. The transition to a co-management system that focuses only on biodiversity protection would

not be relevant, given contemporary sustainability challenges. Practically speaking, it will be challenging to foster collaboration between such monodisciplinary actors and the multicultural communities that constitute the institutionally complex WNP.

The human dimension of national park management is challenging but serviceable. Accommodating the human dimension of MPAs aligns with a global effort to co-produce knowledge and re-orient practical methods (Christie *et al.*, 2017; Gray *et al.*, 2017). In the context of WNP, the role of social scientists has not been seen to be foremost. The socio-cultural issues attended to human activity have not often been incorporated into conservation efforts. However, social scientists have helpfully broadened the considerations made in forming conservation policies, which have benefited from the incorporation of local knowledge, shifts in paradigm, and deliberations on the legitimacy and practicality of proposed actions (Bennett *et al.*, 2017; Charles and Wilson, 2008).

The effectiveness of marine reserve management in WNP is remarkable because the institutions' roles are functionally different. Biodiversity conservation should focus on marine reserves, not MPAs (Costello and Ballantine, 2015) because MPAs are vulnerable to political ecology and the complexity of institutional interests. Moreover, the concept of marine reserves in the context of Wakatobi might be returned to the customary marine areas of the MHA or sacred areas of the Bajau communities in the locally managed marine areas scheme. Knowledge management and community participation might transmit the common pool sharing toward alternative management for the WNP. Thus, a commitment to finding effective management alternatives is necessary for minimizing further biodiversity loss and averting the tragedy of the commons.

- *Sustainable resource management*

The biodiversity loss of a large national park is rooted in poor management of its resources (human and non-human) and a lack of accessibility to areas needing protection. As one of the biosphere reserves and the second-largest marine national park in Indonesia under the authority of Ministry of Environment and Forestry, WNP has natural resources that must be handled carefully. The Bajau, the main resource users in WNP, are the main actors and beneficiaries of a co-management transition. Using local

knowledge, such as TEK and multi-actor involvement, will be key.

This study finds the opportunity to involve traditional healers and Bajau youth in sustainable resource management. These two groups can ensure effective sustainable resource management if they participate adequately. First, the Bajau community trusts traditional healers (*Panambar*) to cure diseases and communicate with sea spirits (*Mbok Madilao'*). *Panambars* deeply understand each location and biotas that are beneficial and sacred to Bajau communities. Cultural activities associated with this sacredness can convince the Bajau to nurture mother nature. This concept was introduced by Berkes (2012) in the concept of sacred ecology. For example, entering sacred marine areas and practicing destructive activities is considered forbidden because those areas are the abode of sea spirits. Such collaboration would be apt and effective as a co-management strategy, as it would be linked to the concept of locally managed marine areas and simultaneously support and be supported by customary laws and traditional healers' roles.

The participation of Bajau youth in sustainable resource management is also important in WNP. It is not tenable to implement co-management toward sustainability and transformation without involving them, but they have not previously been included in WNP authority resource management schemes. Bajau youth often work as small-scale fishers, and their absence from both the WNP authority schemes and local government planning represents a gap in need of bridging - a gap between management activities and the aspirations and expectations of young people seeking to become agents of change and sustainability. They must be included in decision-making processes, and spaces must be created for them to exert power. This transformation initiative must include generational literacy and local knowledge empowerment for sustainable resource management in Bajau contexts. For example, Bajau youth should be included in marine conservation, project development, and leadership training. They should be engaged in identifying local environmental challenges and receive technical and financial support to work towards identifying effective solutions.

- *Capacity building*

This research highlights that co-management transformation is related to communication. The mis-

alignment between community organizations and leadership structures should be acknowledged and addressed, and this requires effective communication. Interpersonal communication reduces institutional barriers among stakeholders and other groups with dissimilar knowledge and values (de Nooy, 2013). Framing communications on environmental impacts and benefits for marine resource users in WNP is a significant challenge. To date, communication framing by government authorities has been rigid, utilizing a military-based approach (*Jagawana*). Among the Bajau, interpersonal communications from elites (*Danakang*) to community members are also often ineffective. The educational exposures among the elites and *Danakang* are evident; elite Bajau with privilege and proper education stand apart from the average Bajau community member who graduated from elementary school, if at all, and may not be literate. This situation influences Bajau community relations and their acceptance of outsiders (*Bagai*).

Another aspect of interpersonal communication involves paradigm shifts and attitudes of the Bajau regarding conservation or development programs in their villages. They often see these programs as a 'caritative program' rather than a customary communal need. Thereupon socio-economic issues result in misinterpreting program aims and implementation in Bajau Villages in WNP. Such conservation efforts should consider Bajau's psychographic characteristics when motivating local resources and related issues (Nelson *et al.*, 2018). Deliberations about potential benefits will cater by increasing the effectiveness of communication and engagement with other interest groups, as demonstrated in the co-management transition in other marine national parks (Indrawan *et al.*, 2013).

- *Localities and extended issues*

The history of interactions between the Bajau and islanders has resulted in a peripheral role and weak participation in WNP by the Bajau. The social conflicts between the Bajau and Kaledupa customary communities during the DI/TII (1951-1965) period led to prolonged trauma (Ariando, 2022). This is still evident in the stereotyping of the Bajau community by Islanders referring to them with words such as *Fadu*, which means the lowest class society or enslaved people, a term assigned to backwards, foolish, and dirty groups. The Bajau cohesive social formation is more exclusive due to the experience of

continual discrimination. The Bajau are generally more comfortable gathering with their communities than outsiders.

Bajau people also negatively connote non-Bajau people as *Bagai* or discredited outsiders. The gap between the Bajau and non-Bajau makes it difficult for WNP to foster community participation. Mechanisms for conflict resolutions, graduated sanctions, and customary law enforcement are critical attributes for the WNP in this transition to co-management. Ultimately, however, these efforts are necessary because enhancing government accountability, flexibility in developing regulations relating to marine resource use, and greater participation by Bajau communities in decision-making offer significant prospects for improved management of the localities of WNP.

- *The Bajau and co-management system*

Prior to transitioning from dictating resource management practices to initiating co-management with IPLCs, authorities must acknowledge the sovereignty of these groups and their right to manage their resources and way of life (Ban and Frid, 2018; Spak, 2005). Otherwise, the co-management program will negatively impact the metamorphosis of their traditions. Prado *et al.* (2022) found that two factors influence collaborative management: catalytic factors such as crises, threats, social mobilization, political identity, emancipatory partnerships, and structural factors related to fulfilling basic needs and rights. These two factors are relevant to the condition of the Wakatobi Bajau concerning MPA management, intercultural relations, and resource mobilization. Several institutions that run co-management programs have not assessed these factors. Instead of moving toward sustainable resource management, they have affected paradigm shifts, social conflict, and marginalization of landless and maritime-oriented groups like the Bajau.

The involvement of Bajau TEK must be considered by WNP authorities in transitioning to co-management because they are the most intensive resource users across the zone. Bajau TEK comprehensively identifies a practice's classification, ability to protect biodiversity, projection, spatial, spiritual, and activity (Ariando, 2022). Implementing TEK in MPA management has been practiced in various regions and positively correlates with management effectiveness and sustainability (Ferse *et al.*, 2010; Glaser *et al.*, 2010; Mellado *et al.*, 2014).

Reflecting on the Bajau people in WNP, several studies document the existence of Bajau TEK relevant to conservation needs in WNP, such as Dugong marine mammal protection (Cullen-Unsworth *et al.*, 2018), whale shark protection (Stacey *et al.*, 2012), mangrove stewardship (Setyaningrum *et al.*, 2022), environmental health protection (Ariando *et al.*, 2022), feminist political ecology and development (Fatirahwahidah and Mansur, 2018; Lynch and Turner, 2021), ecotourism facilitation (Bahar and Fauzi, 2020; Kasmiasi *et al.*, 2016; Marlina *et al.*, 2020), and nursery establishment in sacred areas (Ariando and Arunotai, 2022; Hasrawaty *et al.*, 2017). Addressing institutional issues to incorporate this TEK into co-management enables cooperation in accessing resources, bringing together different actors, building trust, resolving conflict, and networking (Berkes, 2009). Apart from being an adaptive mechanism in MPA management, from the Bajau viewpoint, the incorporation of their TEK into co-management practices signals community recognition. Such incorporation also aligns with the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) regarding the protection of indigenous peoples and their pursuit of self-determination by facilitating reconnection with country, culture, and language.

Incorporating Bajau TEK into co-management practices will also reposition the Bajau from a 'peripheral community' to a 'conservation-based community.' This is a starting point for Bajau self-determination and recognition as part of the Wakatobi Regency. The exclusivity of MHAs and other dominant customary communities has historically threatened the presence of the Bajau, who are still considered by many to be migrants even though, administratively, the Bajau people are already registered as Wakatobi residents. Their presence benefits the economic development of the Wakatobi Regency's fisheries and trade sectors.

There is an opportunity for institutional support for WNP and the Wakatobi Regency to increase the effectiveness of their management practices. This institution is a stakeholder in Wakatobi's governance of world biosphere reserves, which was recognized and awarded in July 2012 at the United Nations Educational and Cultural Organization (UNESCO)'s 24th session of the International Coordinating Council of the Man and Biosphere program. Wakatobi was recognized as a biosphere reserve because it has high biodiversity and healthy

coral gardens, diverse cultural practices, and effective ecosystem services. The institutional members represent key persons from WNP, the Wakatobi government and several related agencies, non-government organizations, civil society organizations, academic institutions, and the private sector, including representatives from the Bajau community. This institution can prospect co-management and accelerate Wakatobi's social, economic, and environmental management functions. In the future, however, the execution of the tasks of this biosphere reserve institution will not be without difficulty in terms of its governance system and the commitment of institutional representatives.

### **The sacred areas of the Bajau and co-management opportunities**

As a marine-oriented community, Bajau communities interact with ecosystems on land and at sea. They express this relationship in a saying, "*Lamong para daong ma dara, para dayah ma dilao*" or 'the more leaves on the land, the more fish in the sea.' This philosophy offers insight into the connection the Bajau make between nature, spirit, and humanity. Bajau people believe that the sea and land are interconnected, just as are the people who inhabit them. The land is for *Bagai*, while the sea is for the Bajau (*Sama*) – but these are all interdependent: the food supply and demand, market system, resource mobilization, and more.

The Bajau believe spirits occupy every space on earth. Humans who want to enter a territory must respect the spirits present in the space. Cultural activities and traditional beliefs are dominated by the spirit that exists in the seascape. The Bajau acknowledge the term *Mbok Madialo'* (spirit in the sea), who is in charge of guarding, supervising, and allowing Bajau people to conduct activities there. *Mbok Madilao'* is believed to be a stratification of eight Bajau ancestors and derives supreme powers by drawing upon their respective skills to heal or warn the Bajau people when they do or do not nurture the sea. This belief is still abided by the Bajau, which can be seen in the *Maduai* practice (healing activities) of giving offerings to the spirits at sea during various cultural ceremonies and when they are sick.

The existence of this spirit is associated with the protection of spaces and species. The sea spirit can be taken the shape of animals or other sacred objects. If the Bajau meet this spirit, they might have bad luck or get meaningful help while fishing. One

of these incarnations is a giant octopus (*Kutta' Sillah*) with an odd number of tentacles (five or seven) believed by the Bajau to live in a particular sea area. The Bajau consider this area sacred and for its preservation or perturbation to be a matter of life and death. The violation of customary norms and beliefs is redressed with cursed words or other taboo terms (*Pamali*). Bajau people who violate these norms are facing *Taruak Panyala*. Regarding the conservation and protection of marine resources, the idea of sacred ecology is close to community-based MPA, which has the prospect of being formed as a CCA (Day *et al.*, 2019). This practice could be easily transitioned into co-management and sustainable resource management.

Based on ecological characteristics, the Bajau people divide sacred areas into three features: inland areas, seashores, and high seas. The inland sacred areas contain graves, dense forests, caves, hills, rivers, and water sources. In the seashore, such areas consist of shallow water where large sacred shells are scattered, dead coral is stored under the sand, large trees (*Pohongkayu mabasar*) are on the coast for offerings, mangrove forests are present, and small islands for resting are available when a hydrometeorological disaster occurs. On the high seas, sacred areas consist of atolls, straits, and other underwater morphology. Various cultural activities are located in these sacred areas. One of them is the *Maduai Arak* ceremony, in which bottles of traditional wine are dropped on the fragmented reef wall area (*Pakito*) around their village to precipitate healing.

The atoll area in Wakatobi is the second-longest atoll in the world. It is approximately 5 to 15 nautical miles from the Bajau villages. The atoll area (*Sapak*) is the main fishing ground of Bajau communities in Wakatobi, as well as Bajau communities outside of Wakatobi. Previously, when the Bajau were still living in boathouses (*Soppe'*), they would gather on the *Sapak* in the calm season (*Pamamiaaan*), ranging from August to December every year. Their activities in the Wakatobi atoll include shell harvesting and spearfishing. Currently, the Bajau livelihood in Wakatobi depends entirely on the *Pamamiaaan* season. In the past, they brought along all of their family members, but now it is predominantly men who attend. This change has resulted from a shift from living in *Soppe'* to the construction of stilt houses (*Babaroh*) around the atoll to store belongings and sleep during nights of the *Pamamian* season. Currently, the construction of *Babaroh* is potential con-



flicts between the Bajau and MHAs due to MHAs overclaim the atolls as part of their customary areas.

The Bajau follow a rotational fishing practice in which they fish in particular areas based on the fishing season. They believe that rotational allows time for species to regenerate. In the past, outside of the *Pamamiaan* season, the Bajau did not fish in the Wakatobi atoll because fish and other marine resources were still abundant around their village. However, this practice has changed in recent years because of their vulnerability to economic pressures to maximize their financial capital. They have begun to overexploit atolls and other habitats to earn more money. This situation has resulted from changes in their socio-cultural patterns and the introduction of capitalist practices to the Bajau community, and a shift in mindset toward asset acquisition. The sea is still considered a socio-cultural space but is also now viewed as a space that can be exploited economically.

The Bajau sacred areas in Wakatobi are scattered along healthy marine ecosystem areas. Figure 1 shows the intersection of the WNP zonation and the Bajau sacred areas. Those overlaid areas have the potential to be developed as CCA co-managed marine areas. A negotiation scheme is needed to account for Bajau's needs and address institutional issues. If the overlaid site is located in the MHA area or other customary communities in Wakatobi, further deliberation must be conducted wisely to reduce possible customary conflicts. The WNP should improve their contemporary conservation methods to account for Bajau sacred areas and incorporate their TEK. Advanced consideration and documentation are required in terms of the possibility of bringing sacred areas in WNP under co-management.

## Conclusions

The transition of MPA management to a co-management system requires commitment and consideration. The collaboration of multiple stakeholders and the identification of institutional challenges must be mapped out at the onset of this effort. In the case of WNP, the complex terms of institutions, intercultural relations, and human dimensions in the management system warrant significant discussion. Institutional challenges involving coastal and marine area management between the WNP authority and Wakatobi local government agencies must be addressed before engaging with IPLCs; although

they are both governmental agencies, these institutions work under different ministerial silos and do not always share aims and strategies.

Co-management is not a panacea. However, it tends to be more effective than governmental management schemes because of a sense of shared responsibility and ownership and the incorporation of bottom-up practices. There are no static preconditions for the co-management of MPAs or CCA. Rather, there must be a contextual consideration and rights-based approach, including the importance of communication. The documented pillars of the Bajau community indicate socio-ecological constraints on their involvement in the co-management transition of WNP. Administration, governance, sustainable resource management, capacity building, locality, and other issues can be addressed via a participatory model, but there will be difficulties to resolve on many levels for this model to prove optimally effective. Co-management provides an important sustainable governance and resource management model, although implementing a co-management system is complex, costly, and time-consuming. Still, it is reasonable and practicable through multilevel commitment and openness on the part of all stakeholders.

This research explicitly provides the perspective and existence of TEK from Bajau as foreground information for the consideration of the WNP management transition. To justify the need for WNP, Bajau sacred areas have the prospect of being incorporated into marine co-management schemes. However, the socio-cultural data from this research must be corroborated with data from other disciplines. Future research should seek to map the sacred areas of the Bajau community based on the polygon area and the TEK justification in each of these sacred areas. In addition, biodiversity and coral assessments and appropriate marine spatial planning in these sacred areas are also needed as tools for monitoring and evaluating the prospective program. Lastly, further studies can focus on policy bridging from sacred areas and related Bajau TEK documentation to CCA and MPA as co-management practices in WNP.

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