



Research Article

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Contribution of Local Wisdom of the Bajo Tribe to Preserve Indonesia's Mangrove Forests

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Abstract

Mangrove forests are one of the most important ecosystems for coastal communities. However, mangrove forests are degraded and damaged by human activities. One solution to overcome this problem is to take advantage of local wisdom. The Bajo Tribe, who lives around Indonesia's mangrove forests, has unique local wisdom and the potential to maintain the sustainability of mangrove forests. This study explores the contribution of the local wisdom of the Bajo Tribe in preserving Indonesia's mangrove forests. This article results from qualitative research in which data was collected through interviews, observations, and documentation studies. The informants of this study are the Bajo Tribe community on the coast of Tomini Bay, Indonesia. The results showed that the local wisdom of the Bajo Tribe in preserving mangrove forests includes several practices, namely mangrove forest conservation, wisely managing mangrove forests, and developing a sustainable economy based on mangrove forests. These practices have been proven to preserve mangrove forests. This research provides a better understanding of the local wisdom of the Bajo Tribe in preserving Indonesia's mangrove forests. It helps the government develop better policies and practices to preserve the sustainability of Indonesia's mangrove forests.

Keywords: local wisdom; Bajo Tribe; mangrove forest; mangrove conservation; coastal community; Tomini bay

1. Introduction

Mangrove forests are essential ecosystems that benefit the environment and society. As a wetland ecosystem located along tropical and subtropical coastlines, mangrove forests function ecologically and socioeconomically, protecting coastlines, water purification, nutrient suppliers, and homes to wildlife (Barbier, 2016; Gao et al., 2019). As home to various organisms, mangrove forests serve as places of ecological and evolutionary adaptation unique to life in the intertidal zone, viviparous and salt tolerance in trees, and breathing air in crabs and fish through amphibian behavior (Dahdouh-Guebas et al., 2020). Regarding climate change mitigation, mangrove forests have value beyond their functions; they strongly support human communities and biodiversity because they provide nutrients, protect beaches from storms, and maintain fish availability (Zeng et al., 2021).

Mangrove forests are essential in maintaining ecosystem balance, reducing coastal erosion, and enriching natural resources. Mangrove forests can dispel wave heights and reduce the speed of water flow to reduce coastal erosion (Dasgupta et al., 2019; Kely et al., 2022). Areas with mangrove forests offer protection and experience only minor coastal damage compared to areas with reduced mangrove forests (Dahdouh-Guebas et al., 2021). Mangrove forests are essential to provide valuable ecosystem functions and services, store carbon, protect coasts, and improve fisheries and tourism services (Worthington et al., 2020). Mangrove forests also provide the welfare of the surrounding community. Ecosystem services such as mangrove forests significantly contribute to human welfare (Bera et al., 2022). Each mangrove forest ecosystem has a high value, indicating that a good mangrove forest ecosystem can improve the health and welfare of coastal communities (Nie et al., 2023). As an invaluable natural capital, mangrove forests provide goods, services, and functions essential for the welfare of coastal and human communities (Sannigrahi et al., 2020).

As a Coastal community, the Bajo Tribe in Tomini Bay, Indonesia, utilizes mangrove forest resources for livelihoods. Mangrove forests have a significant role in the function of coastal ecology and livelihood sources of coastal communities (Amelia et al., 2023). Coastal communities depend on the main livelihood activities of mangrove forest resources (Aye et al., 2019; Damastuti et al., 2022; Scales & Friess, 2019). Mangrove forests have a significant economic value and are used for the livelihood of coastal communities (Getzner & Islam, 2020). Mangrove forests support the livelihoods of coastal communities by providing forest products like fish, crabs, shrimp, firewood, wood, wax, honey, and charcoal (Cooray et al., 2021).

However, the condition of mangrove forests in Indonesia, including Tomini Bay, is deeply precarious. Indonesia's mangrove forests suffer sustained losses caused by deforestation (Sasmito et al., 2020). The total net deforestation of mangrove forest areas in Indonesia from 2009 to 2019 was around 128,176 ha (Arifanti et al., 2022). Meanwhile, aquaculture is the leading cause of mangrove damage in Tomini Bay, Indonesia. Aquaculture contributes to 63% of mangrove forest loss in Indonesia (H. T. T. Nguyen et al., 2021). The leading cause of the decline of mangrove forests is deforestation through conversion for aquaculture and agricultural purposes (Bryan-Brown et al., 2020; Lagomasino et al., 2019; Sardar & Samadder, 2021; Thomas et al., 2017). Mangrove deforestation is more strongly associated with conversion to aquaculture or rice fields than conversion for oil palm plantation purposes (Bryan-Brown et al., 2020). Due to the use of timber for fuel and development needs, illegal logging, mining, and forest conversion for agriculture and animal husbandry, mangrove forests continue to experience degradation and deforestation (Meyer et al., 2019). Deforestation, land use, and land cover destroy mangrove forests by converting forests into non-forest uses, occurring globally at 1 to 2% per year (Sharma et al., 2020).

The destruction of mangrove forests impacts the loss of animal and fish habitats. The degradation and loss of mangroves lead to reduced biodiversity, especially endemic species of mangrove forests (Dittmann et al., 2022). Animal and fish habitats lost due to the destruction of mangrove forests threaten the livelihoods of fishermen and coastal communities (Amelia et al., 2023). The loss of mangrove forest habitat, especially in the Indonesian archipelago, is a significant concern that is very worrying because coastal communities in the archipelago are very dependent on coastal

and marine resources, as well as on ecosystem services provided by mangrove forests (Winterwerp et al., 2020).

The Bajo Tribe in Tomini Bay, Indonesia's coast, has local wisdom in preserving mangrove forests. The local wisdom of the Bajo Tribe is related to their knowledge and experience in managing coastal and marine resources, including mangrove forests inherited from generation to generation (Haris et al., 2019; Obie & Lahaji, 2020). Local wisdom is a perspective, attitude, and behavior of life or action to maintain the sustainability of natural resources or forest areas so that they can sustainably continue to benefit humans (Masy et al., 2020). Local wisdom owned by a community has been proven to reduce the acceleration of land cover degradation (Putra et al., 2021). Mangrove forest conservation is one of the central tenets of the local wisdom of the Bajo Tribe in preserving mangrove forests. The local wisdom possessed by the Bajo Tribe in mangrove forest conservation is closely related to the lives of those who depend on coastal ecosystems (Haris et al., 2019; Obie & Lahaji, 2020; Wani & Ariana, 2018). The Bajo Tribe also has local wisdom that wisely manages mangrove forests. Bajo people view mangrove forests as part of their lives. Mangrove forests are part of human life, providing an understanding of how important it is for humans to maintain balance with the mangrove forests around them (Purwanto et al., 2023).

Another local wisdom owned by the Bajo Tribe is to develop a sustainable economy based on mangrove forests. Sustainable livelihoods of coastal communities are essential in supporting the achievement of broader economic, social, and environmental goals to bring coastal communities out of poverty (Stacey et al., 2021). This research is vital because preserving mangrove forests is critical for the survival of communities in coastal areas. In addition, the Bajo Tribe has local wisdom that has proven effective and sustainable in preserving mangrove forests. So, this article explores how the local wisdom of the Bajo Tribe contributes to preserving Indonesia's mangrove forests.

2. Research Methods

This research used a qualitative descriptive approach with case studies (Budiman et al., 2020; Denzin & Giardina, 2022). The Bajo Tribe sampled for this study was the Bajo Tribe living on the coast of Tomini Bay, Indonesia. The sample was chosen because the community has lived on the sea for generations and has local wisdom in preserving mangrove forests.

Researchers selected informants in this study using purposive sampling. The purposive sampling method allows researchers to select informants who know about the topic under study (Bala & Kang'ethe, 2021). In purposive sampling, researchers selected informants with knowledge and experience about mangrove forests and the surrounding environment. The study was conducted for six months.

The instruments used to obtain data were observation, interviews, and documentation. The researchers observed the practices of the Bajo Tribe and the environmental conditions around mangrove forests. Meanwhile, researchers interviewed twelve Bajo tribal vital informants to obtain more in-depth data on the local wisdom of the Bajo Tribe. In addition, this interview was also intended to understand better the practices carried out by the Bajo Tribe in maintaining the preservation of mangrove forests. The researchers used documentation as secondary data to obtain information and the development of mangrove forest conditions. Researchers tested the validity of the data using the triangulation method, while data analysis was carried out descriptively.

3. Results and Discussion

3.1 Mangrove Forest Conservation

The Bajo (also Bajau, Sama-Bajau, Bajaw) Tribe is one of the Indigenous Tribes of Indonesia known for their skills in sailing and living on the sea. They live in coastal areas and islands, including Sulawesi, Borneo, East Nusa Tenggara, West Nusa Tenggara, Maluku, and Papua (Kusuma et al., 2017;

Wani & Ariana, 2018). To preserve mangrove forests, the Bajo Tribe, one of the coastal community groups, has substantially contributed. One of the contributions of local wisdom of the Bajo Tribe in maintaining the preservation of mangrove forests is to conserve mangrove forests. The Bajo Tribe has a tradition not to destroy mangrove forests deliberately. They believe that mangrove forests are the abode of the spirits of their ancestors and are an essential source of life for the surrounding community. Therefore, they maintain the preservation of mangrove forests well. The local wisdom of the Bajo Tribe in mangrove conservation is closely related to their lives which are very dependent on coastal ecosystems (Haris et al., 2019; Obie & Lahaji, 2020; Wani & Ariana, 2018). Mangrove conservation efforts by the Bajo Tribe aim to preserve the diversity of biota and ecological processes that support the mangrove forest ecosystem (Wang et al., 2020). The dependence of the Bajo Tribe on coastal ecosystems was best expressed by an informant who is a traditional leader in the Bajo Tribal community.

At first, our ancestors moved from one coast to another by boat. However, it is estimated that since 1901 they began to settle in this region (Tomini Bay). Livelihoods since our ancestors have changed, namely sourced from marine products that exist along the coast. We depend on coastal areas because our culture is built here.

Another informant, who is also a resident of the Bajo Tribe, added:

Our source of livelihood is only around the coast and sea. We fished along the coast using small boats, usually from the morning to noon. Some go fishing some distance closer to the coast of the island next door, and it usually goes late afternoon back towards morning. We also used to look for sea mussels in the mangrove forest, the products we sell to people on land. Therefore, our coastal areas guarded them according to the customs of our ancestors.

Mangrove forests are one type of coastal ecosystem that is very important for the survival of coastal communities, including the Bajo Tribe. For coastal communities, mangrove forests are not only the primary source of livelihood (Amelia et al., 2023; Doodee et al., 2023; Ellison et al., 2020; Nyangoko et al., 2022; zu Ermgassen et al., 2020, 2021) but also as a protector from dangerous storms (Dahdouh-Guebas et al., 2021; Hochard et al., 2019; Liu et al., 2021). Mangroves provide many benefits for the Bajo Tribe, such as being a source of building materials, food, medicine, and shelter from storms and big waves. Therefore, the Bajo Tribe has local wisdom that protects and preserves the mangrove ecosystem around where they live. The Bajo Tribe performs customary rituals related to the environment regularly in each of their life cycles to preserve long traditions and manage coastal and marine natural resources, including mangrove forests (Wani & Ariana, 2018). The Bajo Tribe has customary rules prohibiting excessive logging of mangroves or damage to mangrove ecosystems. An informant, a traditional figure of the Bajo Tribe, expressed the following:

We here have a customary rule that anyone should not cut down mangrove trees carelessly, let alone arbitrarily damage them. This customary rule is closely related to the belief we held from our ancestors that spirits occupied mangrove trees and all the natural resources around us. If the ecosystem is disturbed, the guardians of the spirits must be angry so that it can cause disaster to all communities on the coast.

Another informant, the village chief, reinforced the statement:

We maintain mangrove forests here by requiring anyone who needs to cut down mangroves, such as for building houses or other urgent needs, to replace them with doubles. For example, if someone cuts down one mangrove tree, they must plant two new ones and keep them until they grow. It is because mangrove forests, for our understanding, are traditionally guarded by spirits who, if cut down arbitrarily, can cause disaster to our community.

The local wisdom possessed by the Bajo Tribe in mangrove conservation shows how important it is to maintain coastal ecosystems for human survival. The Bajo Tribe conducts various conservation

efforts to preserve mangroves in coastal areas. These efforts are carried out by involving the active participation of the community so that the community can feel that they have a responsibility to preserve the surrounding environment. Recognizing and respecting traditional Indigenous knowledge in managing and conserving natural resources must demonstrate awareness, acceptance, promotion, and concrete action (Arunotai, 2006). One of the main ways that the Bajo Tribe conserves mangroves is by planting mangrove seedlings in degraded coastal areas. In this activity, the Bajo Tribe collaborates with related parties such as the Watershed Management Center (WMC) and the local NGOs. An informant who is the head of an Environmentally Conscious Group (ECG) explained:

We volunteered to plant mangrove trees on critical land in an environmentally conscious group and existing residents. We work closely with the WMC to procure mangrove seedlings and the local NGOs for assistance. This mangrove planting program is quite successful, so the stands of mangrove trees look good.

The Bajo Tribe also protects mangroves by establishing zoning around mangrove forests. Mangrove zoning can prevent humans from entering mangrove forest areas and damaging ecosystems. An informant who is a member of an Indigenous institution explained:

We apply zoning for certain mangrove forest areas. Mangrove trees in the area should not be cut down at all. If there is an urgent need, such as materials to build a house, it is okay to cut down mangrove trees there. However, the customary rule still applies: cutting down one tree must plant two trees and be maintained until it grows ultimately.

The Bajo Tribe supervises the mangrove forest area and enforces the rules set by traditional institutions to maintain mangrove sustainability. The Bajo Tribe institutionally reduces the uptake of firewood from mangrove forests. An informant who is a resident of the Bajo Tribe explained it this way:

We residents who are here voluntarily supervise the existing mangrove forest. All citizens must obey everything that is the decree of traditional institutions. For example, the determination of the zoning of the mangrove area that must not be disturbed, then anyone who cuts down mangrove trees in the area is subject to customary sanctions in the form of fines and the obligation to replace twice as many mangrove trees that have been cut down. In addition, the person concerned is also subject to social sanctions.

Another informant who was a member of an Indigenous institution corroborated that:

The Bajo people are earnest in carrying out their customary rules. For our belief in the Bajo Tribe, mangrove forests are not just a collection of trees. Mangrove forests for us are part of our lives, and it is so that our culture is inseparable from mangrove forests. When the baby is born after going through the customary procession, the baby's placenta is hung on a mangrove tree. Similarly, our bodies were buried not far from the mangrove forest when we died. We believe that the mangrove forest is guarded by spirits, including the spirits of our ancestors who lived there. In addition to mangrove forests, we also believe that specific coral clusters are the place where the spirits of the ancestors live.

The Bajo Tribe maintains the sanctity of the mangrove forest area by cleaning up garbage or materials that can damage the environment. An informant, the head of the ECG, explained that environmentally-conscious groups and residents routinely pick up the garbage around the Bajo tribal settlement. Similarly, in the mangrove forest area, this group, a Bajo tribal community, also voluntarily removes the garbage in the mangrove forest. Apart from that, the Bajo Tribe has cultural practices related to managing this waste. Namely, the Bajo people are prohibited from disposing of laundry water waste and washing cooking utensils in seawater. They must collect such waste and dispose of it ashore. This kind of prohibition symbolizes that the Bajo Tribe does not interfere with the existence of coastal ecosystems (Enjang, 2022). This cultural practice is closely related to

maintaining ecosystems that are still maintained today.

3.2 Managing Mangrove Forests Wisely

The sustainable way the Bajo Tribe uses mangrove forests is evidence of their vast and ancient knowledge system. They only harvest mangrove wood for specific purposes, such as building houses or boats, from dead or no longer growing trees. The Bajo Tribe uses mangroves as medicinal plants, other marine life, and a source of income. They also harvest other mangrove products sustainably, such as crabs, shrimps, and shellfish. They use environmentally friendly fishing techniques, such as looting or hand-to-hand fishing, which maintains ecosystem balance and avoids overfishing that can damage marine ecosystems. An informant who is a fisherman explained:

We should not carelessly cut down mangrove trees in this area, nor take crabs and shellfish in the mangrove forest. In taking it, we must not use fishing gear that can damage the ecosystem, and we can only take what we need using fishing gear or nets. Older adults with a hereditary understanding of tradition forbid us to interfere with existing natural resources. Otherwise, we can get into trouble in the form of experiencing disasters or experiencing unlucky fates in the future.

Another informant, who is also a fisherman, added:

Our ancestors' traditions taught us always to respect the surrounding nature wherever we are. That is why the mangrove forests around us are still upright; compared to mangrove forests in other places, many have changed their function to shrimp and whitefish ponds. We also have a habit of offering rituals before going fishing, and we did this in the hope that the spirits of our ancestors could keep us on our way and get enough fish.

The Bajo Tribe wisely manages natural resources related to mangroves, such as fish, wood, and others, and aspires to do little or no damage to the mangrove ecosystem. The traditional beliefs of the Bajo Tribe emphasize the need to respect the ancestors of the sea and all its contents because, according to their beliefs, everything around them, be it mangrove trees, coral reefs, seagrass beds, and others, is guarded by the spirits of their great ancestors (Baskara, 2020). The Bajo Tribe also has a tradition of using natural medicines derived from the natural resources around them, such as herbal plants and sea fish. Using these natural remedies is safer and cheaper, but it also helps maintain the balance of the ecosystem and prevent the depletion of natural resources. Natural resources for tribal cultures, including the Bajo Tribe, provide native species habitat important for foodstuffs, medicinal materials, and rituals (Wani & Ariana, 2018).

The life of the Bajo Tribe depends on the natural resources around them, such as the sea and mangrove forests. Therefore, the Bajo Tribe has local wisdom in managing natural resources wisely and sustainably. The Bajo Tribe sees itself as part of its natural environment and makes it its primary source of livelihood. With this belief, the Bajo Tribe treats nature wisely and benefits from it to make ends meet (Obie & Lahaji, 2020). The local wisdom of the Bajo Tribe in managing natural resources is fundamental to maintaining their survival. In practice, the Bajo Tribe aims to sustain its natural environment carefully. The customary rules among the Bajo Tribe are guidelines for maintaining the balance of the ecosystem and natural resources so that they remain sustainable and can be utilized sustainably. An informant who is the chairman of the village consultative body explained:

Our beliefs have for generations believed that the universe is part of our lives. We are one with the surrounding nature wherever we live. Because our culture is the inhabitants of coastal areas, we believe all coastal ecosystems are part of us. Therefore, we are obliged to take care of it. Our tradition teaches that destroying the surrounding nature is the same as being self-destructive. We are afraid of destroying the existing ecosystem because we are afraid that the waitress will be wrathful.

One of the traditional understandings of the Bajo Tribe in managing natural resources is to

utilize natural resources sustainably. They not only harvest natural resources for current needs but also consider the needs of future generations. The Bajo Tribe sustainably utilizes coastal areas by combining environmental, economic, social, and cultural preservation with development strategies based on the potential and characteristics of the surrounding community's needs (Rahim et al., 2019). The Bajo Tribe has customary rules prohibiting overfishing and leaving certain areas undisturbed so the fish can breed without hindrance. Locals do not consume fish that live near settlements unless they are used as bait for fishing in deeper waters. In addition, the Bajo Tribe also has customary rules on the use of fishing gear that is environmentally friendly and does not damage the marine ecosystem, such as using nets and traditional fishing rods. They also avoid using chemicals in fishing, so the marine ecosystem is protected. Bajo people understand that traditional fishing activities, such as fishing with nets, spears, or hooks and ropes, do not damage nature and do not conflict with the principles of conservation or protection of ecosystems (Elliott et al., 2001).

The Bajo Tribe plans to make good use of land in coastal areas so that existing natural resources can be utilized optimally. The Bajo Tribe divides residential, shrimp farming, and mangrove forest areas separately. Using coastal areas according to their designation significantly impacts sustainable coastal resource management (Hoque et al., 2020). The Bajo Tribe manages fisheries in coastal areas well, such as setting limits on the size of fish that can be caught or setting fishing periods so that fish resources remain sustainable. The Bajo Tribe utilizes natural resources sustainably by paying attention to the balance between taking natural resources and the sustainability of these natural resources. Mangrove forests are part of human life, providing an understanding of how important it is for humans to maintain balance with the mangrove forests around them (Purwanto et al., 2023). The Bajo Tribe is essential in raising awareness of preserving mangrove forests in the surrounding community. Mangrove forest conservation is critical to ensure the conservation of ecosystems, ecology, and biodiversity, in addition to supporting human activities and sources of economic income (Kanniah et al., 2021).

3.3 Developing a Sustainable Economy Based on Mangrove Forests

The Bajo Tribe utilizes the available mangrove forest resources in a way that does little harm to the environment. They sustainably harvest products in mangroves and use only enough for their needs. The Bajo Tribe utilizes nature only to make ends meet without overexploitation (Obie & Lahaji, 2020). An informant who is a fisherman explained:

Our ancestors taught us not to be greedy for nature. If it is violated, disaster will befall the perpetrators and the community. Being friendly to nature is a teaching that has been understood for generations by the Bajo Tribe. When a plague occurs, the traditional administrators immediately gather to recognize what caused the plague. Moreover, traditional administrators usually immediately notify the cause in the form of violations of nature committed by community members. That is why we care for nature as much as ourselves. Similarly, in fishing, we cannot use tools that damage the environment and only catch decent ones.

In addition, fishing is just one aspect of the source of the diverse economies owned by coastal communities (Greenan et al., 2019). In developing a sustainable economy, the Bajo Tribe also builds marine tourism. The Bajo Tribe keeps the environment around tourism clean and beautiful and promotes environmentally friendly marine tourism. The Bajo Tribe develops sustainable tourism by utilizing the natural beauty and uniqueness of the mangrove ecosystem. In developing tourism, coastal communities always pay attention to environmental sustainability and ensure that tourists benefit local communities—Tourism Development of the coastal area of the Bajo Tribe in collaboration with the local government. Human resource development and synergy with the government are significant to improve the welfare of coastal communities based on mangrove forest tourism (Turisno et al., 2023). An informant who is a boat driver who used to drive tourists explained:

The local government inaugurated our settlements into nautical tourism in 2015. Since then, every year, there have always been cultural performances of the Bajo Tribe on this beach. As boat drivers who always serve tourists, we get sustenance. The uniqueness of the Bajo Tribe's culture has a selling point so that many tourists visit from within the country and abroad.

Another informant, who is also the village head in the Bajo community, added:

We offer many cultural objects in the marine tourism program: island tourism, mangrove forests, coral reefs, sea panoramas, traditional culture, and the uniqueness of residential areas above sea level. These attractions are managed in an environmentally friendly and sustainable manner. We have visitor regulations in place: they are prohibited from damaging the mangrove ecosystem and are not allowed to litter.

The Bajo Tribe utilizes traditional knowledge in teaching local people how to use natural resources sustainably and wisely. Coastal communities use mangroves to create a sustainable source of economic income while still paying attention to the environment and mangrove ecosystem. Conserving coastal ecosystems and maximizing their resilience can provide adaptive capacity benefits for coastal communities (N. T. H. Nguyen et al., 2022). The Bajo Tribe develops small and medium-sized enterprises by utilizing the natural resources in the surrounding environment—namely, fish processing and shrimp farming. In developing small businesses, coastal communities always consider sustainable economic principles such as efficiency, effectiveness, and sustainability. Sustainable livelihoods of coastal communities are essential in supporting the achievement of broader economic, social, and environmental goals to bring coastal communities out of poverty (Stacey et al., 2021).

An informant who is a small trader explained that the Bajo Tribe develops a network of partnerships with other business actors and the government in developing a sustainable economy. These partnerships increase access to markets, technology, and other resources necessary to develop sustainable economic ventures. This partnership has provided institutional knowledge of how local communities achieve the capital necessary to meet their needs (Jacob et al., 2023). By carrying out sustainable economic development, the Bajo Tribe can maintain its economic resources while ensuring that the development does not damage the sustainability of the mangrove ecosystem.

4. Conclusion

The traditional and customary knowledge system of the Bajo Tribe contributes impressively to preserving Indonesia's mangrove forests. The local wisdom possessed by the Bajo Tribe in maintaining the preservation of mangrove forests includes mangrove forest conservation, wise mangrove forest management, and sustainable economic development based on mangrove forests.

This research provides a deeper insight into how the Bajo Tribe understands and utilizes mangrove forests sustainably. It also contributes to developing science and theory related to local wisdom in natural resource management. This research also provides valuable information for managing mangrove forests and other natural resources. By understanding how the Bajo Tribe maintains the preservation of mangrove forests, appropriate steps can be taken to utilize these natural resources sustainably. In addition, this research also provides input for the government in formulating appropriate policies for preserving mangrove forests' sustainability.

A limitation of this research is that researchers only explored the contribution of local wisdom in preserving mangrove forests. This article did not discuss other factors that can also affect the sustainability of mangrove forests, such as economic, social, political, and technological factors. Therefore, further research is necessary to integrate those essential factors. In addition, to improve the sustainability of mangrove forests, further studies should also be carried out to identify the challenges and opportunities faced by the Bajo Tribe in preserving mangrove forests and designing appropriate policies and strategies to promote local wisdom and protect mangrove forests.

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