



The Impact of Destructive Fishing on the Development of Marine Tourism in Indonesia: A Case Study of Kapoposang Island, Pangkajene and Islands Regency, South Sulawesi Province, Indonesia

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Abstract. As an archipelago, Indonesia has a vast ocean and is rich in biodiversity. With a vast ocean, Indonesia has considerable marine ecotourism potential. However, the problem that needs to be solved is destructive fishing in Indonesian waters. Destructive fishing can damage the marine ecosystem and reduce the number of marine life that characterizes Indonesian waters. Kapoposang Island is one of Indonesia's areas with great marine ecotourism potential. However, on Kapoposang Island, there are cases of destructive fishing which are feared to hurt the development of marine ecotourism. Besides that, community participation is needed so that an increase can follow the growth of marine ecotourism on Kapoposang Island in the standard of living of the local community, one of which is the economy. This study examined the relationship between destructive fishing and tourism development on Kapoposang Island. The research was conducted using a qualitative approach to analyze the impact of destructive fishing on the development of marine ecotourism on Kapoposang Island, Pangkajene Islands Regency, South Sulawesi. Researchers used data sources in the form of interviews and literature studies.

Keywords: Tourism, Destructive fishing, Marine ecotourism, Community participation, Marine ecosystem.

Abstrak. Sebagai negara kepulauan, Indonesia memiliki lautan yang luas dan kaya akan keanekaragaman hayati. Dengan lautan yang luas, Indonesia mempunyai potensi ekowisata bahari yang cukup besar. Namun permasalahan yang perlu diselesaikan adalah penangkapan ikan yang merusak di perairan Indonesia. Penangkapan ikan yang merusak dapat merusak ekosistem laut dan mengurangi jumlah biota laut yang menjadi ciri khas perairan Indonesia. Pulau Kapoposang merupakan salah satu wilayah Indonesia yang memiliki potensi ekowisata bahari yang besar. Namun di Pulau Kapoposang terdapat kasus penangkapan ikan destruktif yang dikhawatirkan akan merugikan pengembangan ekowisata bahari. Selain itu diperlukan peran serta masyarakat agar peningkatan dapat mengikuti pertumbuhan ekowisata bahari di Pulau Kapoposang terhadap taraf hidup masyarakat setempat, salah satunya perekonomian. Penelitian ini mengkaji hubungan antara penangkapan ikan destruktif dan pengembangan pariwisata di Pulau Kapoposang. Penelitian dilakukan dengan pendekatan kualitatif untuk menganalisis dampak penangkapan ikan destruktif terhadap pengembangan ekowisata bahari di Pulau Kapoposang, Kabupaten Pangkajene Kepulauan, Sulawesi Selatan. Peneliti menggunakan sumber data berupa wawancara dan studi literatur.

Kata Kunci: Pariwisata, Penangkapan Ikan Merusak, Ekowisata Bahari, Partisipasi Masyarakat, Ekosistem Laut.

1. INTRODUCTION

Destructive fishing is an issue that requires attention from nations, including Indonesia, which has large territorial waters. Indonesia is the world's largest and most populous archipelago (Nurdin & Grydehøj, 2014, p. 55). As an archipelago, Indonesia has a land area of 1,913,578.68 km², an ocean area of 6,653,341.439 km², and a coastline length of 99,093 km (Hadza, 2023). With such a large ocean area, Indonesia is unsurprising rich in marine resources. However, the ecosystem's natural

balance must preserve the ocean's biological biota and marine ecosystems (Arismiyanti, 2019, p. 118). As a maritime country with long coastlines and vast marine areas, Indonesia can support increased marine tourism because it has diverse marine resources.

However, some challenges exist in preserving Indonesia's rich marine resources, including destructive fishing in Indonesian waters. The Ministry of Maritime Affairs and Fisheries found that 653 vessels engaged in the destructive fishery during 2013-2019. These findings indicate several provinces in Indonesia have a high potential for destructive fishing. Those provinces are South Sulawesi, Southeast Sulawesi, West Nusa Tenggara, East Nusa Tenggara, Riau Islands, Bangka Belitung, East Kalimantan, Papua, East Java, and Nanggroe Aceh Darussalam. Destructive fishing can destroy marine resources such as coral reefs and fish populations. Furthermore, damage to coral reefs can even lead to a reduction in the population of marine biota living on coral reefs (Afrillia, 2022). These conditions provide an overview of the negative impacts of destructive fishing on aquatic ecosystems in Indonesia, especially in South Sulawesi, which is the location of the author's research activities.

Destructive fishing is a fishing technique or practice that may reduce fish stocks by damaging fish and invertebrate habitats and ecosystems so they can no longer function properly (Carneiro & Martins, 2022, p. 1). Destructive fishing that causes damage to marine ecosystems can also interfere with a country's tourism sector, including Indonesia, which has vast marine areas.

The destruction of marine ecosystems that leads to the depletion of marine resources is caused by destructive fishing. The use of fish bombs, potassium cyanide, electricity, and poison are methods often used by fishing boats. Poison is used mainly for ornamental fish and to catch live consumption fish for export, such as grouper and hump head wrasse. The potassium cyanide is sprayed on the fish to stun them and make collection more accessible. Both explosive fishing and poisons are environmentally problematic as they affect more than just the target catch. Explosives can kill fish, corals, and skinless invertebrates. Poisoning can be fatal to adult and juvenile fish, corals, and other invertebrates. Consequently, coral reef habitats can be damaged and destroyed, and there is a significant reduction in the overall availability of fish for export (Nurdin & Grydehøj, 2014, p. 56). These negative impacts show how fishing methods such as fish bombs, potassium cyanide, electricity, and poisons can damage marine resources in Indonesia.

There have been many cases of destructive fishing in Indonesia, including those in South Sulawesi Province. Eight fishermen were secured in an operation at the Kapoposang Island Marine Tourism Park conducted by the Directorate General of Marine Resources and Fisheries Monitoring for destructive fishing in September 2020. These eight fishermen allegedly caught fish by drugging using potassium in Kapoposang Tourist Park, South Sulawesi. These fishermen were found using

quite sophisticated vessels equipped with fish finder features so that in their operations, the fishermen target groups of fish detected by the device (Rosana & Cahyani, 2020). The disclosure of this destructive fishing practice by the Directorate General of Marine Resources and Fisheries Monitoring in South Sulawesi proved that destructive fishing is widely practiced in Kapoposang Island, a conservation area.

Kapoposang Island is one of the Marine Protected Areas in South Sulawesi. Since March 4, 2009, the waters of Kapoposang Island have been under the supervision of the Ministry of Marine Affairs and Fisheries by the minutes of handover no. BA.01/menhut-IV/2009 and No. BA: BA.01/menhut-IV/2009 and No. BA. 108/MEN.KP/III/2009. From this handover, the waters of Kapoposang Island were named the Kapoposang Islands Marine Tourism Park and the surrounding sea. In 2009, the Minister of Marine Affairs and Fisheries designated the Kapoposang Islands Marine Tourism Park and the surrounding sea as a national marine protected area for the Kapoposang Islands and surrounding sea. Subsequently, the Kapoposang Islands National Marine Protected Area and the surrounding sea in South Sulawesi Province (Redaksi, 2022). As a conservation area, marine resources in the waters of the Kapoposang Islands are highly guarded. In addition, the Makassar Coastal and Marine Resources Monitoring Agency routinely conducts surveillance in the Kapoposang Islands.

This study examines the relationship between destructive fishing and tourism development in South Sulawesi, particularly in the small islands of Pangkajene and Islands Regency. One of the islands focused on in this study is Kapoposang Island. As explained above, the Directorate General of Marine Resources and Fisheries Monitoring has arrested fishermen who committed destructive fishing on Kapoposang Island. This research is necessary because it can add to our knowledge about destructive fishing that occurs around Kapoposang Island and the impacts it has, including on the tourism sector. The novelty in this research is the need for more data analyzing destructive fishing in small islands in Pangkajene and Islands Regency and its impact on the tourism sector.

2. RESEARCH METHOD

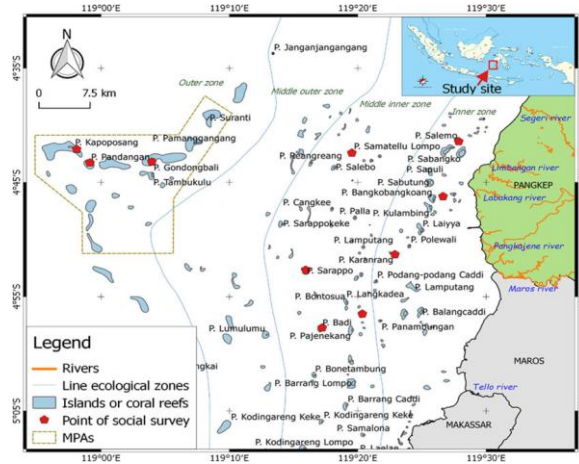
This research was conducted using a qualitative approach to examine or analyze the impact of destructive fishing on tourism development in Kapoposang Island, Pangkajene, and Islands Regency, South Sulawesi. The researcher used data sources through interviews and literature reviews (articles, journals, news, websites). Informants comprised fishermen, stakeholders, Non-Governmental Organizations (NGOs), tourism businesses, local tourists, and community leaders. During the research, the researcher analyzed the impact of destructive fishing on tourism development in Kapoposang Island using these data sources.

Table 1. List of Respondents

NO	Position	Background Education	Amount of People
1	Fisherman	- Elementary School - High School	2
2	Stakeholders	- Undergraduate	1
3	Non-Governmental Organization	- Elementary School	1
4	Domestic Tourist	- Undergraduate - High School	5
5	Community Leader	- Undergraduate - High School	2
6.	Tourism Business Actors	- Elementary School	1

Figure 1. Map of Kapoposang Island

Source: https://www.researchgate.net/figure/Map-of-the-study-area-in-the-PANGKEP-Regency-Spermonde-Archipelago-South-Sulawesi_fig1_333322143



Kapoposang Island is part of the Pangkajene and Islands Regency, South Sulawesi. The island has an area of about 42 hectares. This island has several marine ecosystems: coral reef, mangrove, and seagrass. These marine ecosystems can be utilized in the tourism sector. One of them is coral reefs; as a beautiful marine ecosystem, coral reefs can attract the attention of tourists to be used as tourist spots (Rombe, et al., 2023, p. 516). Kapoposang Island can be accessed through Makassar City using a fishing boat; it takes about five to six hours to reach Kapoposang Island from Paotere Harbor, Makassar City. With the beauty of coral reefs, Kapoposang Island offers marine tourism such as snorkeling and diving. Besides that, tourists can also enjoy the wealth of aquatic resources through the coastal area of Kapoposang Island.

Kapoposang Island is included in Liukang Tuppabiring Sub-district, Pangkajene and Islands Regency, Sulawesi Province (Kuba, 2024). Liukang Tuppabiring sub-district in 2020 had a population of 17,728 (8,828 women and 8,900 men) recorded in the Central Bureau of Statistics of Pangkajene and Islands Regency (Badan Pusat Statistik Kabupaten Pangkajene dan Kepulauan, 2021). In Kapoposang Island, there are more than 100 family cards and 137 houses, while the

population is estimated to be more than 600. People on Kapoposang Island generally work as fishermen/fish catchers (Purnama, 2021, p. 115). Apart from working as fishermen, some people on Kapoposang Island also work in the tourism sector by utilizing the potential of marine tourism on Kapoposang Island.

3. LITERATURE REVIEW

Destructive fishing

Destructive fishing refers to fishing gear or methods that cause ecosystem components to disintegrate or cease functioning normally. In addition, a few fishing gears or catches are inherently destructive methods, usually explosives and synthetic poisons (Willer, et al., 2022, p. 1045). Destructive fishing can negatively impact the marine environment due to the methods used in practice.

The definition above shows that destructive fishing is an activity carried out by both local and foreign fishing vessels that violates several rules regarding the methods used in fishing. Fishermen carry out destructive fishing using prohibited methods as they can damage the marine environment, such as using fish bombs, poison, potassium, and electricity.

In the waters of Kapoposang Island, fishing has occurred using methods that can hurt the marine environment. The fishermen use potassium to anesthetize the fish, making it easier to catch (Rosana & Cahyani, 2020). The use of potassium by fishermen around the waters of Kapoposang Island, a conservation area, shows that the fishermen have carried out destructive fishing to get the maximum catch and ignore the impacts of the destructive fishery on marine resources in the waters of Kapoposang Island.

Destructive fishing, also known as illegal fishing, is an activity that hurts marine resources. The impacts can include damage to future marine ecosystems. This condition can also be exacerbated by the limited capacity of marine resources to self-renewal (Arief, 2022, p. 60). The impacts that can occur due to destructive fishing show how important it is for a country to pay attention to the handling of destructive fishing cases. Especially for an archipelagic country with a larger water area like Indonesia, especially in South Sulawesi province, namely Kapoposang Island.

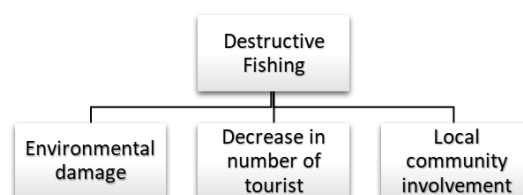


Figure 2. Indicators of Destructive Fishing

Marine ecotourism

Marine ecotourism is a vacation activity that allows visitors to interact directly with marine ecosystems. Marine ecotourism development is based on environmental conservation principles, community-based education, and experience-based sustainability and well-managed for the community's welfare. Strategies in the development of sustainable marine ecotourism are expected to ensure economic, social, cultural, and environmental sustainability (Arismiyanti, 2019, p. 119). With this goal, marine ecotourism can benefit local governments by generating regional foreign exchange. In addition, marine ecotourism can also help preserve marine resources by providing awareness to the public on how important it is to protect the marine environment.

Yoeti explained that ecotourism can be translated into ecotourism, a type of tourism with an environmental perspective. Thus, ecotourism can be interpreted as tourism whose activities are related to nature. These activities are carried out to invite tourists to see nature up close and enjoy the authenticity of nature and the environment so that they are inspired to love nature. These activities are often called back to nature (Arismiyanti, 2019, p. 122). According to Anggreni, ecotourism is an alternative tourism that arises because of dissatisfaction with forms of tourism that pay less attention to social and ecological impacts and are more concerned with economic profit and human comfort alone (Sulaksana, Susianti, & Dianasari, 2023, p. 99). Ecotourism is a tour that aims to add insight into the environment through tourism activities directly related to nature.

Marine ecotourism covers three main areas: submerged, coastal, and elevated (Prakasa, Sawu, & Ulinuha, 2023, p. 95). In Kapoposang Island, marine tourism can be enjoyed in all three areas. In the submerged area (sea) we can do snorkeling activities, in the coastal region (coast or beach) we can do sunbathing and swimming. In the elevated area (beachfront) we can enjoy nature while camping.



Figure 3. Indicators of Marine Ecotourism

Community Participation

Community participation and active involvement from the community towards the development of marine ecotourism can benefit both the community and the development of marine ecotourism. By being directly involved, the community will feel the impact of marine ecotourism on their lives (Prakasa, Sawu, & Ulinuha, 2023, p. 96). Community involvement in the tourism

development process can be divided into three levels, namely: 1) pseudo-community participation (non-participation); 2) passive community participation (the community only acts as an endorsement of decisions made for the community); and 3) spontaneous community participation (direct participation, active participation, and authentic participation). (Adikampana, 2017, pp. 6-7). By playing a role in developing marine ecotourism, the community can improve its economy through tourism services it can provide tourists. Thus, the development of marine ecotourism will be accompanied by the community's economic growth.

Community participation in tourism development is meaningful, especially in developing countries like Indonesia. Understanding community perspectives can facilitate policies that minimize the potential negative impacts of tourism development and maximize its benefits, leading to more excellent community development and support for tourism (Thetsane, 2019, p. 123). Therefore, community participation is essential for the development of the tourism sector, including the development of marine tourism.

Damanik and Weber mentioned that there are parameters used to measure community participation. This parameter is called the analysis of community participation at each stage of tourism destination development, including planning, implementation, and monitoring. The planning stage is the community's initial process of tourism development. This stage includes problem identification, goal formulation, and decision-making related to the development and funding required. The second stage is implementation. In this stage, the community manages the tourism village's businesses, attractions, and amenities. This stage emphasizes community participation in businesses such as homestay managers, tour guides, and tourist attraction managers, who are involved in improving infrastructure and as material suppliers for the industry. The last stage is the monitoring stage. This stage is related to the community's participation in supervision, which has a controlling role over the operational activities of the tourist village and any related decision-making (Wardani, Rahmanita, Farhan, & Pramudita, 2023, p. 3). With the parameters mentioned, we can measure community participation in tourism development in a region.

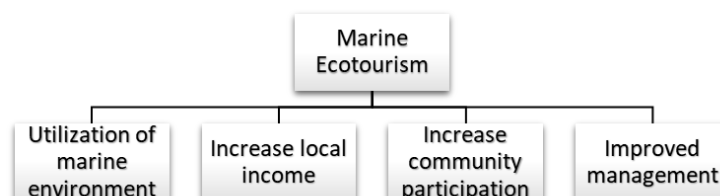


Figure 4. Indicators of Community Participation

4. RESULT AND ANALYSIS

The number of tourists interested in exploring the beauty of the sea has made marine tourism increasingly popular in various countries. Travelers looking for water-based activities, including going to the beach, swimming, snorkeling, boating, fishing, and other water sports, are attracted to marine tourism. In addition, nautical tourism can include sightseeing or educational trips to harbors, lighthouses, and other important historical, cultural, and ecological sites (Singh & Easow, 2023, p. 725). With so many tourists interested in marine tourism, countries that have marine wealth, such as Indonesia, have the opportunity to develop the tourism sector. This condition indicates that an increase in the tourism sector, mainly marine tourism, can positively impact the economic development of local communities.

According to a tourism business owner, Kapoposang Island has enormous opportunities, including in the tourism sector. With its rich marine resources, Kapoposang Island has considerable potential to be utilized for marine tourism. The underwater beauty is the primary value for tourism on Kapoposang Island; besides that, the natural beauty presented through the beach and coastal areas is no less beautiful. This condition is also supported by the hospitality of the local community on Kapoposang Island (Interview, Kapoposang Island, October 4th, 2024). Local people also participate in protecting their natural resources; one example is sea turtles. People on Kapoposang Island try never to disturb tourists and warn tourists to keep their distance from the turtles to avoid them feeling uncomfortable and choosing to leave Kapoposang Island. With the community's efforts, many turtles can be seen if we visit Kapoposang Island. This condition shows that community participation in Kapoposang can be assessed through community participation in making decisions and shows continued community participation in the marine ecotourism sector on Kapoposang Island.



Figure 5. interview with respondents

Source: Researcher Team

The development of marine tourism in a country will be followed by economic growth, where communities in coastal areas can benefit economically from maritime tourism, a rapidly growing segment of the tourism industry. According to the Maritime Institute of Technology and

Graduate Studies (MITAGS), maritime tourism supports local communities economically by increasing employment and income in related tourism sectors (Singh & Easow, 2023, p. 726). The community's economic development is based on their participation in the marine tourism sector. This condition is an indicator that marine ecotourism can have an impact on the economic development of local communities.

According to the Head of Kapoposang Hamlet, the development of marine tourism has certainly positively impacted the community in Kapoposang Hamlet. One of the impacts that can be felt is in the economic field. Marine tourism development on Kapoposang Island has opened up jobs for the community, which used to be primarily focused on working as fishermen. However, with the development of marine tourism, many people work in the tourism sector to increase their income apart from working as fishermen (Interview, Kapoposang Island, October 4th, 2024). An example is constructing a resort on Kapoposang Island, owned by one of the communities on Kapoposang Island. The existence of a resort called Kapoposang Paris Resort positively impacts the resort owner and other communities by opening jobs at the resort. This condition shows that marine ecotourism on Kapoposang Island has increased the income of local communities.

Kusumatmadja explained that the Indonesian Sea has comparative, cooperative, and competitive advantages. These advantages are the leading sectors in national development, including tourism. The Indonesian Sea has its benefits in tourism; the diversity of Indonesia's marine resources can be developed as a marine tourism product (Sulaksana, Susianti, & Dianasari, 2023, p. 99). One of the areas in Indonesia that have the potential to develop in the marine tourism sector is Kapoposang Island, Pangkajene, and Islands Regency, South Sulawesi. The development of the tourism sector in Indonesia is undoubtedly an indicator that the utilization of the beauty of the marine environment can impact the growth of marine ecotourism in Indonesia.

According to local tourists on Kapoposang Island, he visited Kapoposang Island because the waters around Kapoposang Island have such beautiful underwater beauty. The underwater beauty is one reason why these tourists visit Kapoposang Island, snorkel, and dive into the waters of Kapoposang Island (Interview, Kapoposang Island, October 4th, 2024). For tourists who enjoy snorkeling and diving activities, Kapoposang Island can undoubtedly be one of the tourist destinations where they can enjoy its underwater beauty. This condition shows that marine ecotourism depends on utilizing the marine environment's beauty.

Kapoposang Island, in August 2024, was designated as a tourism village by the Pangkajene and Islands Regency government. Kapoposang Island Tourism Village was launched by the Pangkajene and Islands Regency Government which was attended by the Regent of Pangkajene and Islands Regency, Muhammad Yusran Logalau (MYL), Head of the Tourism and Sports Office,

Jaenal Sunusi and several other figures. The launch of Kapoposang Island Tourism Village was carried out in collaboration between the Pangkajene and Islands Regency Government and the Capacity Building Program Team of the Fisheries Diving Club (FDC), Student Organization Faculty of Marine Science and Fisheries Hasanuddin University (Kuba, 2024). The establishment of Kapoposang Island Tourism Village has shown that the Pangkajene and Islands Regency Government has recognized Kapoposang Island as an area with potential in the tourism sector. This determination was made against the background of Kapoposang Island, which has a wealth of beautiful marine ecosystems that can be utilized in the tourism sector.

In addition, according to a stakeholder who is a staff member at the Makassar Coastal and Marine Resources Monitoring Center, the waters of Kapoposang Island are a conservation area and therefore, under the supervision of the Ministry of Marine Affairs and Fisheries and are monitored continuously through the Makassar Coastal and Marine Resources Monitoring Center (Interview, Kapoposang Island, October 4, 2024). As a conservation area under the name of the Kapoposang Island Marine Tourism Park, the core area is only allowed to carry out mangrove and Nipah planting activities, biodiversity protection, environmental rescue and protection, and conservation research activities. Marine tourism activities can be carried out in the Sustainable Fisheries Zone area (BPSPL Makassar). On Kapoposang Island, the Makassar Coastal and Marine Resources Monitoring Agency routinely monitors the Kapoposang Island Marine Tourism Park as a conservation area. This condition shows that using natural resources on Kapoposang Island is very beneficial for developing the tourism sector on Kapoposang Island. The following is a picture taken from Kapoposang Island by the researcher, which shows that on Kapoposang Island, there is a mess of Management Employees of the Kapoposang Islands Marine Tourism Park and the surrounding sea.



Figure 6. Picture of Mess of the Employees of the Management of the Kapoposang Islands Marine Tourism Park and the Surrounding Seas

Source: Researcher Team

Kapoposang Island is one of the best diving spots in South Sulawesi, and it presents the island's beautiful underwater topography. In addition to marine tourism, Kapoposang Island also offers natural beauty in the coastal area or beach. Having a natural feel on land that is no less beautiful than the sea area, Kapoposang Island is enriched with clean white sand. Fir trees and coconut trees also add to the aesthetic value of Kapoposang Island (Pratama, 2024). As an island with natural wealth, especially the marine environment, Kapoposang Island has considerable marine ecotourism potential.

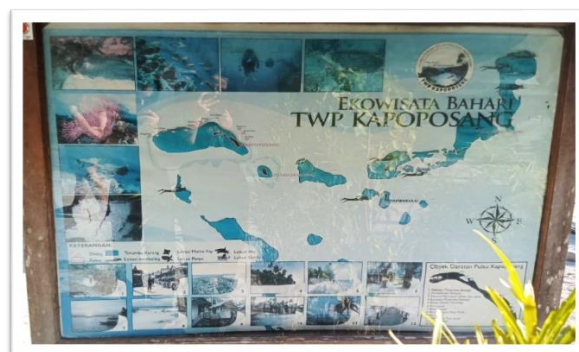


Figure 7. Picture of Marine Ecotourism in Kapoposang Island

Source: Researcher Team

According to one of the local tourists, the underwater beauty in the waters of Kapoposang Island is an advantage possessed by Kapoposang Island. Moreover, the local community on Kapoposang Island is very protective of the natural resources owned by Kapoposang Island. This statement also emerged from several local people's narratives (Interview, Kapoposang Island, October 4th, 2024). The awareness possessed by local communities is very influential on the development of marine ecotourism on Kapoposang Island, one of which is the awareness that they must maintain the natural wealth they have, especially the wealth in the marine sector. This condition shows that community participation on Kapoposang Island is carried out continuously based on awareness owned by the community on Kapoposang Island.



Figure 8. interview with respondents

Source: Researcher Team

Marine ecotourism on Kapoposang Island offers biodiversity, one of which is the beauty of coral reefs. However, some coral reefs on Kapoposang Island have been damaged due to using explosives and tranquilizers to catch fish (Leo, 2020). The destruction of coral reefs is feared to hurt the development of marine ecotourism on Kapoposang Island. Coral reefs are an attraction of Kapoposang Island for tourists who like to snorkel and dive, so if the coral reef ecosystem on the island is damaged, it will affect tourists' interest in visiting Kapoposang Island. The use of explosives and tranquilizers to catch fish included in destructive fishing causes damage to the marine environment on Kapoposang Island.



Figure 9. Picture of Information about destructive fishing on Kapoposang Island

Source: Researcher Team

According to several fishermen on Kapoposang Island, the perpetrators of destructive fishing in Kapoposang Island waters are not locals on Kapoposang Island but fishermen from other islands (Interview, Kapoposang Island, October 4th, 2024). Furthermore, according to one stakeholder, destructive fishing can damage other biota in the sea, such as the use of bombs that affect not only the target catch but also the marine biota around the target catches (Interview, Kapoposang Island, October 4th, 2024). This condition shows that destructive fishing can damage the marine environment by damaging or killing marine life. In addition, damage to the marine environment also impacts the reduction in the number of tourists due to damage to the beauty of the sea.

In general, the profession carried out by most people on Kapoposang Island is fishing (Kadir & Santoso, 2024). However, the fishing gear some fishermen use on Kapoposang Island can hurt marine ecosystems, including coral reefs. This condition is proven by fishermen on Kapoposang Island who are suspected of destructive fishing, namely, fishing by drugging using potassium in Kapoposang Tourism Park, South Sulawesi (Rosana & Cahyani, 2020). Fishermen generally use methods that can damage marine ecosystems because these methods are more accessible and efficient. However, these fishermen need to consider the sustainable impact of the methods they use to catch fish. This condition indicates that there are people around Kapoposang Island who are involved in destructive fishing activities.

According to several fishermen and local communities, the perpetrators of destructive fishing in Kapoposang Island are fishermen from other islands. There are no fishermen from Kapoposang Island who engage in the destructive fishery. According to one of the fishermen in Kapoposang Island, some fishermen who come from other islands do destructive fishing in the form of using shooting methods that can damage coral reefs and using Bubu methods which are carried out by dismantling corals so that they can damage corals (interview, Kapoposang Island, October 4th, 2024). This condition shows how destructive fishing can damage marine biota through the fishing methods used by fishermen.

In addition to not conducting destructive fishing, local communities on Kapoposang Island also participate in preventing destructive fishing by forming Community Supervisory Groups. The Community Supervisory Groups is a group under the supervision of the Marine Resources and Fisheries Supervisor and was established to conduct surveillance related to destructive fishing in Kapoposang Island (interview, Kapoposang Island, October 4th, 2024). This condition shows how the local community play a role in preventing destructive fishing by participating in monitoring Kapoposang Island.



Figure 10. interview with respondents

Source: Researcher Team

In addition to paying attention to the issue of destructive fishing, developing marine ecotourism also requires the involvement of local communities as subjects and objects to achieve its vision. Local communities play an essential role in the development process. Ecotourism development needs to emphasize community participation in development planning. Ecotourism will only be able to develop with the support of local communities. (Prakasa, Sawu, & Ulinuha, 2023, p. 94). The role of local communities in tourism development, especially in the development process, can be done through community participation in decision-making about the development.

According to several community leaders, development in the tourism sector on Kapoposang Island has involved local communities on Kapoposang Island. This condition is evidenced by the existence of a resort built by the local community and employing local people in the operation of the

resort. However, a development related to tourism on Kapoposang Island needs to be known by the community on Kapoposang Island (Interview, Kapoposang Island, October 4th, 2024). The condition where local people are directly involved in developing and operating one of the resorts on Kapoposang Island shows that community participation on Kapoposang Island is valid, especially in decision-making, community empowerment, and sustainability of community participation.

5. CONCLUSION

As an archipelago with an ocean area more significant than its land area, Indonesia certainly has a wealth of marine resources. The enormous wealth of marine resources can be utilized, one of which is in the tourism sector, namely marine ecotourism. One island with great potential in tourism development is Kapoposang Island in Pangkajene and Islands Regency, South Sulawesi Province, Indonesia. The community on Kapoposang Island is involved in developing the tourism sector on Kapoposang Island. Initially, most people on Kapoposang Island depended on working as fishermen. Still, since the development of the tourism sector on Kapoposang Island, many people have worked in the tourism sector, so the income of the people on Kapoposang Island has increased along with the development of the tourism sector on Kapoposang Island.

In marine ecotourism on Kapoposang Island, destructive fishing can threaten the development of the tourism sector. Fishermen who do destructive fishing are fishermen from other regions. The people of Kapoposang Island are very protective of their natural resources and continue to strive to preserve the biological resources on Kapoposang Island. However, the number of fishermen who come from other regions and conduct destructive fishing in the waters of Kapoposang Island can undoubtedly damage the marine ecosystem or marine environment on Kapoposang Island. Damage to the marine ecosystem can affect the lives of local communities, both fishermen and tourism businesses.

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REFERENCES

- Adikampana, I. M. (2017). *Pariwisata berbasis masyarakat*. CAKRA PRESS.
- Afrillia, D. (2022, March 15). Destructive fishing, cara penangkapan ikan yang merugikan ekosistem perairan. *Good News From Indonesia*. Retrieved from <https://www.goodnewsfromindonesia.id/2022/03/15/destructive-fishing-cara-penangkapan-ikan-yang-merugikan-ekosistem-perairan>
- Arief, A. A. (2022). Social economic analysis of illegal fishing fishers in Spermonde Island. *Jurnal IPTEKS PSP*, 9(2), 59-75.
- Arismiyanti, N. K. (2019). Development strategy of sustainable marine ecotourism in Indonesia. *ASEAN Journal on Hospitality and Tourism*, 15, 118-138.
- Badan Pusat Statistik Kabupaten Pangkajene dan Kepulauan. (2021, February 24). Retrieved from Badan Pusat Statistik: <https://pangkepkab.bps.go.id/id/statistics-table/2/NzkjMg==/jumlah-penduduk-menurut-kecamatan-dan-jenis-kelamin-kabupaten-pangkajene-dan-kepulauan--hasil-sensus-penduduk--jiwa.html>
- BPSPL Makassar. (n.d.). Retrieved from Layar Phinisi: <https://layarpinisi.id/sulsel/>
- Carneiro, M., & Martins, R. (2022). Destructive fishing practices and their impact on the marine ecosystem. *ResearchGate*, 1-11.
- Kadir, A., & Santoso, B. (2024, July 27). FDC Unhas bentuk desa wisata bahari di Kapoposang Pangkep. *ANTARA*. Retrieved from <https://www.antaraneews.com/berita/4221059/fdc-unhas-bentuk-desa-wisata-bahari-di-kapoposang-pangkep>
- Kuba, A. (2024, August 11). Pemkab Pangkep luncurkan desa wisata Pulau Kapoposang, kolaborasi FDC FIKP Unhas. *Herald Sulsel*. Retrieved from <https://sulsel.herald.id/2024/08/11/pemkab-pangkep-luncurkan-desa-wisata-pulau-kapoposang-kolaborasi-fdc-fikp-unhas/>
- Leo, O. N. (2020, May 11). Taman Wisata Perairan Kapoposang, 6 hal unik yang bisa dilakukan di Kapoposang. *POS-KUPANG*. Retrieved from <https://kupang.tribunnews.com/2020/05/11/taman-wisata-perairan-kapoposang-6-hal-unik-yang-bisa-dilakukan-di-kapoposang?page=4>
- Nurdin, N., & Grydehøj, A. (2014). Informal governance through patron–client relationships and destructive fishing in Spermonde Archipelago, Indonesia. *Journal of Marine and Island Cultures*, 54-59.
- Prakasa, Y., Sawu, M. R., & Ulinuha, M. F. (2023). Opportunities and challenges in development community-based marine ecotourism on Samalona Island, Makassar City. *Journal of Tourism Sustainability*, 3(2), 94-100.
- Pratama, A. (2024, April 25). Kapoposang, spot wisata bawah laut eksotis di Pangkep. *IDN TIMES SULSEL*. Retrieved from <https://sulsel.idntimes.com/travel/destination/idn-times-hyperlocal/kapoposang-spot-wisata-bawah-laut-eksotis-di-pangkep>

- Purnama, A. O. (2021). Partisipasi masyarakat dalam pengembangan wisata bahari Pulau Kapoposang Kabupaten Pangkep Sulawesi Selatan. *Culture & Society: Journal of Anthropological Research*, 3(2), 113-126.
- Redaksi. (2022, August 28). KKPN Kapoposang, kawasan konservasi perairan lestari dan membanggakan di Sulawesi Selatan. PELAKITA. Retrieved October 1, 2024, from <https://pelakita.id/2022/08/28/kkpn-kapoposang-kawasan-konservasi-perairan-lestari-dan-membanggakan-di-sulawesi-selatan/#:~:text=Dalam%20prosesnya%2C%20TWP%20Kapoposang%20ditetapkan%20oleh%20Menteri%20Kelautan,Provinsi%20Sulawesi%20Selatan%2C%20pada%20tan>
- Rombe, K. H., Rosalina, D., Rahmawati, G., Surachmat, A., Sabilah, A. A., Rahman, A., & Hermawan, R. (2023). Kondisi terumbu karang di Pulau Kapoposang Kecamatan Liukang Tuppabiring Kabupaten Pangkajene Provinsi Sulawesi Selatan. *Jurnal Sumberdaya Akuatik Indopasifik*, 7(4), 515-525.
- Rosana, F. C., & Cahyani, D. R. (2020, October 2). KKP bekuk 8 nelayan, tangkap ikan pakai potassium. *Tempo*. Retrieved from <https://bisnis.tempo.co/read/1392454/kkp-bekuk-8-nelayan-tangkap-ikan-pakai-potassium#:~:text=TEMPO.CO%2C%20Jakarta%20-%20Delapan%20orang%20yang%20diduga%20menangkap,dan%20Perikanan%20%28PSDKP%29%20KKP%20pada%202028-30%20September%202020>.
- Singh, A., & Easow, D. T. (2023). A systematic review on the benefits and challenges of maritime tourism. *Journal of Advanced Zoology*, 44(03), 725-745.
- Sulaksana, I. G., Susianti, H. W., & Dianasari, D. A. (2023). Application of eco-tourism principles in the development of marine tourism in Sanur. *Tourism Research Journal*, 7(1), 98-109.
- Thetsane, R. M. (2019). Local community participation in tourism development: The case of Katse villages in Lesotho. *Athens Journal of Tourism*, 6(2), 123-140.
- Wardani, P. A., Rahmanita, M., Farhan, M., & Pramudita, R. F. (2023). Community participation in tourism destination development: Lesson from Kelor Tourism Village. *JLCT*, 1(2), 1-9.
- Willer, D. F., Brian, J. I., Derrick, C. J., Hicks, M., Pacay, A., McCarthy, A. H., . . . Steadman, D. (2022). 'Destructive fishing'—A ubiquitously used but vague term? Usage and impacts across academic research, media and policy. *Fish and Fisheries*, 1039-1054.