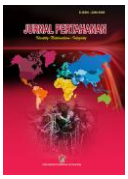

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Local and Migrant Fishermen Marine Cultures in the Atapupu Coastal Area in Supporting the Blue Economy in Maritime Security

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Abstract

Atapupu is a coastal area that has a strategic location because it is directly adjacent to the country of Timor Leste. This study aims to analyze the differences in marine culture at Atapupu Beach in supporting the blue economy in maritime security. This study uses a qualitative method with a descriptive approach. The data source comes from primary data by interviewing local and migrant fishermen and secondary data comes from journals. Data analysis in this study used descriptive qualitative. This study found that the differences between the local and migrant fishermen could be differentiated based on their time to go to sea, the fishing gear, and the type of boat used by the fishermen. The migrant fishermen, which come from Buton, are Muslim, so they do not go to sea on Fridays due to Fridays Prayers. They use fishing rods as gear and bigger boats than the local fishermen. Meanwhile, the local fishermen have no special days to go to sea, they go to sea depending on the weather conditions. The local fishermen only use nets as fishing gear and their boats are smaller compared to the migrant fishermen's boats. These conditions are affecting their range of fishing areas, the type of fish caught, and the average income per month. Cultural differences at sea between local and migrant fishermen will certainly affect maritime security in the blue economy sector. The existence of differences in types and income from catches can lead to less optimal utilization of fishery resources.

INTRODUCTION

Indonesia's position, which is traversed by the equator and is between two continents, namely the Asian continent and the Australian continent, and between two oceans, namely the Indian Ocean and the Pacific Ocean, makes Indonesia a strategic position to be a crossroads of trade traffic and sea transportation. The sea potential is wide enough to make Indonesia has a large resource potential. This of course can support the welfare of coastal communities (Listiyono, Prakoso, & Sianturi, 2019). Indonesia's geographical position as an archipelagic country is closely related to geopolitics, geostrategic, and maritime. Based on the maritime approach, Indonesia has the advantage of having four choke points out of nine strategic choke points in the world and also having three Archipelagic Sea Lanes that connect the Indian Ocean region to the Pacific Ocean and East Asia to Australia. This maritime advantage can be fully utilized by the Indonesian people so it is economically beneficial.

This geostrategic and geopolitical position provides Indonesia with opportunities not only as a global economic route but also as an international maritime security route, thus placing Indonesia at the same time as having advantages and a high dependence on the marine sector. It is very logical if then, the marine economy (maritime) is used as the foundation for the design of national economic development through the idea of the world Maritime Axis. The development of the national maritime sector is still facing several obstacles (Al Syahrin, 2018). According to Kadar (2015), The development of resources in the maritime sector is not yet optimal because it has obstacles including errors in the development paradigm to overlapping policy systems. Efforts to improve maritime infrastructure as well as enforcement of harmony in law enforcement will support maritime development in Indonesia. According to Rochwulaningsih, Sulistiyono, Masruroh, & Maulany (2019), the obstacles that Indonesia has in becoming a strong maritime country are at least 3 factors, namely the underdevelopment of sophisticated technology in the maritime sector, the unintegration of Indonesia's economy as an archipelagic country and the third failure of reforming traditional products to become modern from abundant marine resources.

Improving facilities and infrastructure at ports and fish processing facilities is one of the efforts to increase the potential of capture fisheries (Witomo & Wardono, 2012). One strategy that can be applied is to use the S-O (strength-Opportunity) strategy which this strategy optimizes the strengths of existing opportunities. This strategy includes expanding the capture fisheries market share, increasing the competitiveness of capture fisheries products, improving capture fisheries technology, and optimizing the role of stakeholders to increase production and implement sustainable fisheries development policies (Nursan & Septiadi, 2021).

The potential that exists in the outermost islands of Indonesia is the potential that comes from marine and fishery resources. Indonesia, which is an archipelagic country, is naturally the thing to have large marine and fishery resources (Solihin, Wisudo, Haluan, & Martianto, 2011). The potential for Indonesia to become a country with a marine economy that is a source of prosperity for the community. Indonesia has maritime potential in the fields of biotechnology, marine tourism, deep sea waters, and marine

minerals, but also the shipping and defense industry as well as the world maritime industry. The potential of these resources benefited from a strategic territorial location politically and economically (Chen et al., 2014). In addition, Indonesia also has very large marine and fishery products. This potential certainly results in a large catch and aquaculture production and indirectly affects processing activities at sea. Indonesia's fishery potential is 6,181,997.48 per year (Nugraha, Desnanjaya, Siregar, & Boikh, 2022).

The potential for capture fisheries in the Belu region has increased from year to year. It was recorded that in 2013 the total production of capture fisheries in Belu Regency reached 1,952.44 tons, in 2014 it was 885.76 tons, in 2015 it was 1,479.5 tons and in 2017 the total production was 1,513.7 tons. This is of course a very large fishery potential in Atapupu Beach, Belu District (Dima, 2020). The total production of pelagic fish capture fisheries in the waters of Belu Regency reached 60% yet. This shows that capture fisheries production in this region plays an important role. There are four dominant types of small pelagic fish caught in recent years and contributing about 50% to the production of small pelagic fisheries, namely Mackerel scad (*Decapterus* sp.), Yellowstripe scad (*Selaroides* sp.), and Flying fish (*Hirundichthys* sp.) (Rehatta, Kamal, Boer, Fahrudin, & Zairion, 2020).

The enormous potential for fisheries on Atapupu Beach certainly plays an important role in maritime security in the blue economy sector. Atapupu Beach supports maritime security in Indonesia because it is directly adjacent to the country of Timor Leste. Therefore, the role of fishermen on Atapupu Beach is very important in increasing the blue economy. In general, fishermen on the Atapupu beach consist of local fishermen and migrants. The differences in the culture of going to sea from these two fishermen provide different catches so there is a need for socialization from relevant stakeholders to optimize catches on the beach.

Fishermen in Atapupu consist of two groups, the first are local fishermen who come from Atapupu Beach and the second are migrant fishermen from the Buton area (Southeast Sulawesi). The existence of differences in maritime culture will of course affect the economic level of fishermen in supporting maritime security in the blue economy sector. Therefore, this study aims to analyze what are the differences in the culture of going to sea for local fishermen and migrants so that they can provide recommendations for increasing the blue economy in Atapupu Fishermen in catching fish which will provide references to policymakers for future decision-making.

METHODS

The method used in this study, using a qualitative descriptive method. According to Mulyadi (2011), qualitative research is a research approach that represents naturalistic (phenomenological) understanding. Moleong (2018) describes qualitative methodology as a research procedure that produces descriptive data in the form of observed data and behavior. Suryana (2010) explains that research methods are procedures or steps in obtaining scientific knowledge or knowledge. Descriptive research method with case study techniques. The descriptive method is the method used to find the elements, characteristics, and properties of a phenomenon.

The method used in this study, using a qualitative descriptive method. The data collection carried out in this study was using primary data and secondary data. Primary data comes from interviews with migrant and local fishermen on the Atapupu beach. Secondary data comes from books, journals, and information in print media. The results from these various sources will be summarized into one to be compared with one another. This research was conducted from November to December 2021. The research was conducted in Atapupu Beach which is located on the Trans Timor National Road, Kenebi Village, Kakuluk Mesak District, Belu Regency, East Nusa Tenggara as can be seen in Figure 1.

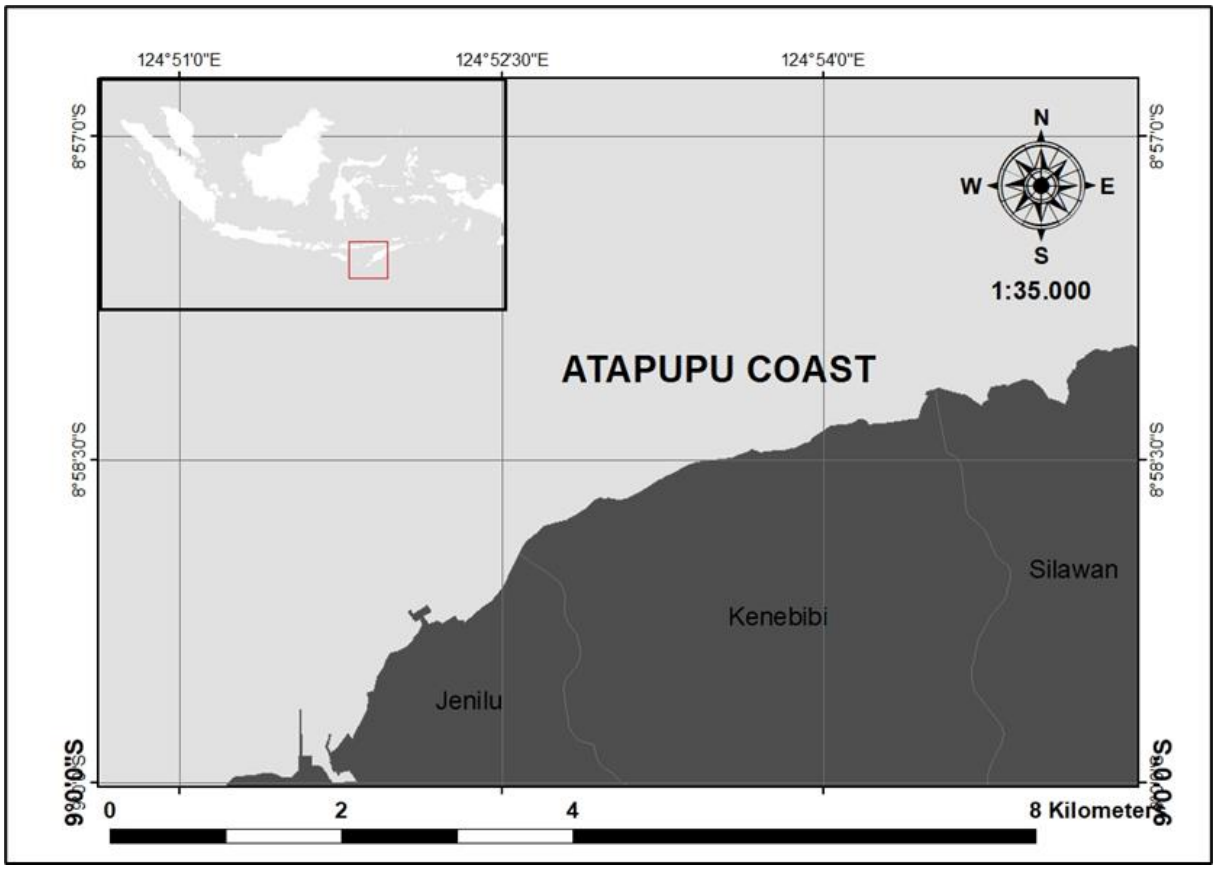

Figure 1. Research Location

Descriptive research is research that is used to reveal actual events, phenomena, variables, and circumstances when the research takes place. This study interprets and describes data related to the current situation, the relationship between variables that arise, differences between existing facts and their influence on a condition, and so on (Subandi, 2011). The steps in this research are primary data collection. In collecting primary data, the fishermen from Atapupu Beach or local fishermen as well as migrant fishermen from Buton fishermen (Southeast Sulawesi) were interviewed. The questions included aspects of fishing time, types of catches, average income, types of fishing gear, fishing traditions, types of boats, and fishing areas. The results of the interviews between the two fishermen were then compared and analyzed with the theory of maritime security supported by secondary data from several journals.

RESULTS AND DISCUSSION

Marine Cultural Differences

Broadly speaking, the most striking difference in maritime culture comes from the fishing gear. This difference in fishing gear will produce different types of catches. Local fishermen generally use nets and migrant fishermen use fishing rods. In general, fishing gear will provide a relatively larger catch of fish. Differences in marine culture between local and migrant fishermen can be seen from several aspects. Aspects used such as the length of time spent at sea, what fishing gear is used, and also the local wisdom that exists on the beach. This difference is used as an analysis of the fishing characteristics of the fishermen for further development in supporting sustainable capture fisheries. The differences between local and migrant fishermen can be briefly seen in Table 1.

Table 1. Comparison of Local Fishermen and Migrant Fishermen

No	Aspect	Local Fishermen	Migrants Fishermen
1.	Time	Depart at 4 am and return at 6 am	Depart at 4 am and return at 6 am Leaves at 2 and returns in 1 to 3 days after
2.	Types of Fish obtained	Types of mackerel fish, mackerel tuna, 30 sardine fish IDR 50,000	Mackerel fish and tuna
3.	Average Income per Month	The average income of fishermen is IDR 100,000 to IDR 500,000. So, in a month, the average earns 3 million to 5 million rupiah. Under certain conditions, in one day, IDR 5,000,000	The average income is IDR 500,000 to IDR 1,000,000. So, in a month, the average earns 5 million to 10 million rupiah. Under certain conditions, in one day, IDR 20,000,000
4.	The fishing gear	The fishing gear used is a net with a size of 1.25 to 1.5 inches.	The fishing gear used is fishing rods because the FADs (Fish Aggregating Devices) used are designed for big fish
5.	Fishing Tradition	There are no special days for fishermen to go to sea, only when they see the wind and dark cloud conditions generally do not go to sea.	On Fridays, they are closed for Friday prayers.
6.	Type of Boat used	The size of the ship is generally 7 to 8 meters with an average engine used of 5.5 HP (Horse Power).	The size of the ship is 9.5 meters with an engine of 15 to 20 HP (Horse Power) using these two engines at once
7.	Catch Area	The point of capture is only 3 to 5 miles.	The distance of Fish Aggregating Devices (FADs) from the shoreline is 28 to 30 miles.

In general, the marine culture between local fishermen and migrant fishermen is not so different. On the aspect of time, it takes local fishermen and migrant fishermen to go to

sea in general in the morning. On average, local fishermen go to sea at 4 in the morning. These fishermen go to sea as their main source of income. These fishermen do not have other jobs besides fishing, so when the weather conditions are bad the fishermen decide not to go to sea and rest at home. In general, fishermen do not have other investments besides going to sea. Fishermen's wives usually open a stall for additional income if there is no income from fishing. Therefore, there is a need for government participation in supporting the creation of other jobs when sea conditions are bad.

Types of fish that are generally obtained by fishermen are mackerel fish, tuna, and sardine. In general, local fishermen catch relatively smaller fish because FADs (Fish Aggregating Devices), a place for fish to gather made by fishermen, are relatively close to the shoreline. This is the reason why local fishermen can get fish which is relatively cheaper. In contrast to migrant fishermen, the fish obtained are relatively larger and also more expensive. The fish caught were bluefin tuna with a price of over 20 million. They vary in fish caught because they have relatively distant FADs. In the presence of such distant FADs, in general, the fish obtained must be relatively larger fish. The average income of local fishermen in Atapupu is IDR 100,000 to IDR 500,000 per day. So, in a month the average earns 3 million to 5 million. Under certain conditions, in one day, it is IDR 5,000,000, while the average income for migrant fishermen per month is up to 20 million per fish because the caught fish are bigger if using fishing rods.

FADs located close to the shoreline are generally FADs for relatively small fish. The fishing gear used by local fishermen is in the form of nets with a diameter of 1.25 to 1.5 inches. The fishing gear used is fishing rods because the FADs used are designed for large fish. The fishing tradition carried out by local fishermen does not have a special event, but migrant fishermen from the Buton tribe (South East Sulawesi) who are generally Muslims do not go to sea on Fridays because they perform Friday prayers. In general, the interaction between local fishermen and migrants is quite good because the fishing areas and types of fish caught are different. There is no clear time when migrant fishermen come to the beach or in this study.

As for going to the sea just to check FADs and do other activities that do not take a relatively long time. Local fishermen with close FADs locations use boats with a size of 7 to 8 meters with an average engine used of 5.5 HP. This is different from migrant fishermen who use a boat size of 9.5 meters with an engine of 15 to 20 HP. The fuel used by migrant fishermen is approximately 5 litters at a time at a cost of approximately IDR 50,000 in contrast to migrant fishermen who use a relatively large boat engine, the fuel used once departing costs IDR 800,000 to IDR 1,000,000 or 80 to 100 litters at a time. The local fishermen's fishing point is only 3 to 5 miles or about ±5.6 km to ±9.3 km, while migrant fishermen are from the shoreline FADs 28 to 30 miles if converted to kilometers, it is about ±52 km or ±56 km. The engines for migrant fishermen are also made double so that they are very capable of traveling long distances for FADs.

Maritim Security

Christian Bueger in his maritime security chart states that maritime security consists of four aspects, namely sea power, sea safety or marine safety, deep sea economy

or blue economy, and human security or human security. The aspect of sea power is an aspect of law enforcers at sea who support various activities at sea including sea transportation, shipping, and various economic development efforts. The aspect of safety at sea is an aspect that protects perpetrators of activities at sea in terms of safety on ships and installations at sea. The third aspect is an aspect of the field of development in the economic field. This is because the sea which has large enough resources can support the economic resources of coastal communities. The last aspect is the aspect of human security which includes the availability of jobs, food resources, and sustainable life (Bueger, 2015).

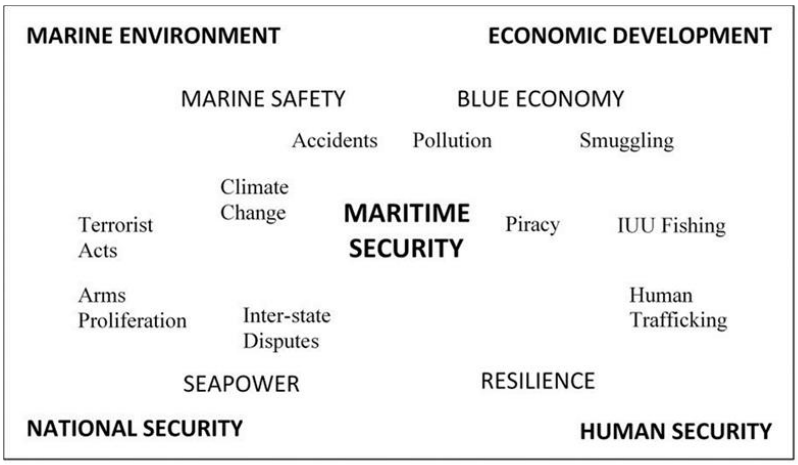

Figure 2. Maritime Security according to Christian Bueger (2015)

This analysis of marine culture is closely related to maritime security presented by Christian Bueger. The marine culture carried out by fishermen will support the blue economy on Atapupu Beach. If the fishing culture carried out by fishermen is threatened with fading, it will result in uncontrolled fishing. This will cause the loss of fish resources on Atapupu Beach. The fishing culture carried out by local and migrant fishermen is of course adapted to the catch. The different catches of fishermen will of course affect the sustainability of the fish resources caught. The existence of this difference will maintain the biodiversity in the Atapupu Waters.

Cultural differences at sea between local fishermen and migrant fishermen will certainly affect maritime security in the blue economy sector. The existence of differences in types and income from catches can lead to less optimal utilization of fishery resources. The blue economy concept consists of three pillars, namely ecosystem, social, and economy. This cultural difference at sea will of course have a different impact on the welfare of local fishermen and migrants. Differences in the culture of going to sea carried out by fishermen or the need for the government's role in socializing how to catch fish in a sustainable. The government's role is very important in educating fishermen to apply the blue economy in catching fish so that a maritime culture is created that supports maritime security. The abundant marine resources on Atapupu Beach will be able to support the welfare of coastal communities, therefore it is very closely related to the theory of maritime security. There is a difference in the culture of the sea, it is necessary

to share information so that the catches of local fishermen and migrants can have the same average income. The existence of these differences will lead to different fishermen's welfare so in this case, the government's role is needed to provide supplies to local and migrant fishermen to support the welfare of coastal communities.

In general, the use of different types of fishing gear must be provided with solutions so that they have relatively the same catches. This is because in general migrant fishermen who have fishing gear in the form of fishing rods get fish species with relatively large sizes. Local fishermen generally use nets because they have special FADs for net fishing gear, even though the fish they catch are relatively smaller. It is also important to develop local human resources so that they are hardworking in catching fish. This is because migrant fishermen generally go to sea earlier and also for a relatively long time. The process of going to sea that requires a long time will of course get relatively more catches. In addition to optimal fishing, we also need to maintain sustainable fish resources. Therefore, it is necessary to have customary law that keeps these marine resources sustainable. According to Lopo, Tnunay, & Bistolen (2022), it is also necessary for coastal fishermen to understand maritime law because it borders with Timor Leste so there are no violations in both countries. This will support maritime security as well as the blue economy (IUU Fishing) aspect.

According to Setyawati et al. (2021), The use of customary law that exists in the culture of coastal communities is one of the efforts to support the sustainability of fishery resources in the sea. These customary laws usually cover the use of environmentally friendly fishing gear used in fishing. The existence of fishing restrictions on maritime culture will certainly form a conservation area that will provide benefits in forming a new profession other than fishing for coastal communities. Increasing the welfare of coastal communities is obtained from the utilization of coastal areas for marine and marine tourism destinations. According to Estradivari et al. (2022), MPA (Marine Protecting Area) is a balance between capture and conservation in the sea. According to Rusandi, Hakim, Wiryawan, Sarmintohadi, & Yulianto (2021), the government has a special commitment to supporting sustainable resources by targeting 32.5 million hectares of land in 2020.

Besides that, it is also necessary to educate fishing communities about the use of satellite imagery in fishing. This can benefit fishermen in terms of time and the number of catches they get when fishermen go to sea. Information through satellite imagery can make it easier for fishermen to determine the catchment area when fishing. According to Widodo, Madjid, & Purwanto (2020), it is necessary to use environmentally friendly fishing gear in catching fish so that it does not have the potential to damage marine biota. One of the things that can be exemplified is the use of a lift net using solar panels. According to Putra & Nurhayati (2021), the coastal area of Belu Regency needs to maintain the stability of maritime security and the management of its marine biological resources because this area borders the country of Timor Leste. One effort that can be done is Maritime Domain Awareness.

CONCLUSIONS, RECOMMENDATIONS, AND LIMITATIONS

The differences are based on the culture adopted by each fishing community. The difference includes when to go to sea because generally, the majority of migrants are Buton (Muslim) fishermen, so they usually do not go to sea on Fridays. The fishing gear is also different because the type of target fish expected is also different, generally, local fishermen use nets and Migrant fishermen use fishing rods. In general, the fish caught with fishing rods are relatively larger when caught using nets.

Cultural differences at sea between local fishermen and migrant fishermen will certainly affect maritime security in the blue economy sector. The existence of differences in types and income from catches can lead to less optimal utilization of fishery resources. The blue economy concept consists of three pillars, namely ecosystem, social, and economy. This cultural difference at sea will of course have a different impact on the welfare of local fishermen and migrants.

Recommendations for further research are the need for an analysis of the relationship of fishermen's sea culture with relevant stakeholders in supporting the maritime sector. The role of these stakeholders is important to obtain a sustainable policy. This is to adjust the culture of fishermen with government policies to maintain sustainable resources. The limitation of this research is that there are no interviews with relevant stakeholders in supporting the progress of fisheries in the region. This is because the role of stakeholders is very important in supporting the economic progress of fishermen. Apart from that, the limitation of this research is the need for academic interviews with various scientists so that the right policy formula is obtained for the welfare of coastal communities.

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