

Defense Management for Overcoming Illegal Fishing in Indonesian Waters: Impact Analysis and Handling Strategy

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Abstract

Indonesia, as an archipelagic nation rich in marine resources, faces a serious issue related to illegal fishing. This illegal fishing practice involves foreign vessels entering Indonesian waters without permission and violating established fishing regulations. The phenomenon of illegal fishing has been a major concern for several decades due to its detrimental impact on marine resources, ecosystems, and the livelihoods of local fishermen. The purpose of this research is to provide a comprehensive understanding of the issue of illegal fishing in Indonesia. Additionally, it aims to respond to this challenge by exploring the role and strategies of defense management in addressing illegal fishing in Indonesian waters. The method used in this research is qualitative, with data collection techniques including interviews, journals, books, and documents. The results of this study indicate that illegal fishing poses a significant threat to Indonesia's marine resources, security, and the livelihoods of coastal communities. To address this issue, cooperation between the government, communities, and relevant institutions is necessary. Firm measures such as strong law enforcement, maximum maritime surveillance, and international cooperation are crucial. The role of fishermen in collaboration with law enforcement authorities is also crucial in protecting Indonesia's waters. Defense management, including maritime surveillance and the development of stringent policies, must also be considered to protect the country's security from the threat of illegal fishing.

Keywords: Defense Management, Illegal Fishing, Indonesia

INTRODUCTION

Indonesia, as a country consisting of many islands, is recognized by the international community (based on UNCLOS 1982) and has ratified the agreement through Law No. 17 of 1985. The total area of Indonesia's sea area is 5.9 million km². This area consists of 3.2 million km² of territorial waters and 2.7 million km² of Exclusive economic zone. (Lasabuda, 2013). Furthermore, geographically Indonesia is located between two oceans (the Pacific Ocean and the Indian Ocean) and is one of the largest archipelagic countries in the world, so Indonesia has very high marine biodiversity.

Indonesian waters provide a habitat for various fish species, coral reefs, and other marine organisms. This makes Indonesia one of the centers of global marine biodiversity (Sukanto, 2017). Management of marine resources is crucial for Indonesia, an archipelagic country with a sea area covering an area of more than 5 million km². However, the abundant natural wealth in Indonesian waters also invites serious risks in the form of illegal fishing, which poses a serious threat to marine ecosystems, the livelihoods of coastal communities, and the stability of maritime security and the geographical condition of Indonesia as an archipelagic country with a long coastline and deep waters. The area's vast waters make it vulnerable to illegal fishing activities. Illegal vessels can enter Indonesian waters relatively easily and avoid detection by authorities. This condition causes an increase in the risk of illegal fishing in Indonesian waters.

Indonesia, as an archipelagic country rich in marine resources, faces serious related problems with *fishing* or illegal fishing. Practice illegal fishing This involves foreign vessels entering Indonesian territorial waters without permission and violating established fisheries regulations. Phenomenon illegal fishing has become a major concern in recent decades due to its devastating impact on marine resources, ecosystems, and the livelihoods of local fishermen. Indonesia's vast territorial waters consisting of thousands of islands make monitoring and law enforcement difficult to carry out effectively.

Illegal vessels can sneak in and operate in Indonesian waters without being detected. Lack of coordination and cooperation between related institutions is also an obstacle in handling legal *fishing*. Weak coordination between the Maritime Security Agency, Ministry of Maritime Affairs and Fisheries, Indonesian Navy, and other agencies is considered to hamper effective law enforcement efforts (Muhammad, 2012). Apart from that, there is low public awareness about the importance of protecting marine resources and stopping illegal activities fishing is also a problem. Several local fishermen are allegedly involved in illegal fishing practices due to economic pressure.

The impact of illegal fishing is very detrimental. This practice causes a decline in fish populations which hurts the livelihoods of local fishermen, food security, and the national economy. Besides that, illegal fishing also damages marine ecosystems, including coral reefs and other habitats, and threatens the long-term sustainability of marine resources (Rahman, 2016). The rampant practice of IUU fishing in Indonesian waters has resulted in significant consequences for the country. Broadly speaking, there are three main impacts of IUU fishing on Indonesia: ecological, economic, and international reputation.

Ecological impact pertains to the sustainability and preservation of fisheries resources. One of the ecological consequences of IUU fishing is the use of toxins and other harmful substances, which have devastating effects on coral reef ecosystems and pose threats to human health and other fish species. In terms of economic impact, IUU fishing in Indonesian waters leads to losses in potential revenue for the country's fishing industry. This occurs because illegal fishers do not bear the various costs that should be incurred, resulting in unfair competition.

IUU fishing also affects Indonesia's international image. As a signatory to UNCLOS, Indonesia is committed to combating any maritime crimes that violate international or national laws. However, IUU fishing practices in Indonesia are viewed as a failure to control fishing activities within its territory. As a result, Indonesia's reputation in the international community is tarnished, increasing the risk of protests, criticism, and potential sanctions or embargoes by international organizations or other countries (Desi Yunitasari, 2020).

In this context, handling illegal fishing in Indonesia is very important. Strengthening regulations, strict law enforcement, international cooperation, and empowering local communities are factors that must be considered to overcome the problem of illegal fishing and protect Indonesia's valuable marine resources.

This research aims to provide an in-depth understanding of the problem of illegal fishing in Indonesia. Apart from that, it is also a response to this challenge because it is important to explore the role and strategy of defense management in dealing with illegal fishing in Indonesian waters. It is hoped that this scientific article can provide recommendations for strategic studies that the government, related institutions, and the community in efforts to overcome illegal fishing effectively and sustainably because by understanding the socioeconomic impact and analyzing the factors that influence this illegal activity, strategic steps can be taken. appropriate actions can be taken to protect and maintain valuable marine resources for future generations.

RESEARCH METHODS

In this article employs a qualitative approach, which involves a methodical exploration of human or social phenomena to present a nuanced and comprehensive understanding, conveyed primarily through descriptive narratives derived from informant sources. Operating within a scientific framework, qualitative research is rooted in post-positivism philosophy, offering a means to scrutinize natural occurrences. Researchers function as pivotal instruments, utilizing purposive and snowball sampling techniques to gather data. Triangulation methods ensure data reliability, while inductive qualitative analysis facilitates uncovering underlying meanings. Unlike quantitative research under positivism, which prioritizes generalizations, qualitative research delves deep into human and social issues, aiming to unveil profound insights rather than merely scratching the surface of reality (Fadli, 2021). This method involves collecting data from various sources, such as interview documents, journals, books, Indonesian government strategic plan documents, and other relevant sources, which are related to the strategic study of handling illegal fishing in Indonesia.

RESULT AND DISCUSSION

Reason for Illegal Fishing in Indonesian Waters

The abundant fisheries resources in Indonesian waters attract the interest of many parties to gain large profits. Several perpetrators of Illegal Fishing do not pay attention to the sustainability of fisheries resources and violate fishing limits, use prohibited fishing gear, or catch protected species.

Here's illegal fishing is two words in English. *Illegal* which in terminology is something that is prohibited, opposed, and legally invalid, meanwhile *Fishing* means the activity of catching fish so it can be interpreted as illegal Fishing is a fishing activity carried out illegally/without a permit and violates the law (Banjarani, 2020).

Cause of occurrence Illegal Fishing in Indonesia is a complex problem and involves several factors. One of the main causes is economic motives. Activity Illegal Fishing is usually carried out by foreign fishermen who come from neighboring countries that border Indonesian waters. They use various methods to catch fish in Indonesian waters and then sell the catch abroad for large profits (Muhammad, 2012). Besides that, Illegal Fishing can also occur in various forms, including violating established fishing rules, where the activity is carried out beyond the specified limits. Actions like this threaten Indonesia's aquatic ecosystem. (Nurhakim, 2017). The following is activity data for Illegal Fishing during the last 6 years in Indonesian waters:

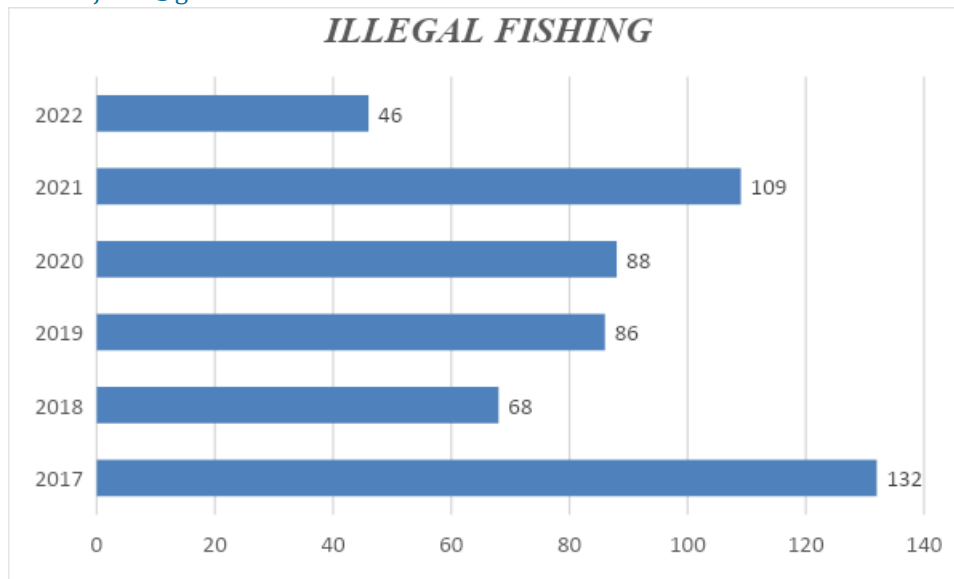


Figure 1. Data on Types of Maritime Crime Violations
(Source: Bakamla)

The data diagram above shows that activity illegal fishing In Indonesia there are still quite a lot because if we accumulate violations of Illegal Fishing over the last 6 years there were 529 cases. Based on the data provided, the number of cases of illegal Fishing in 2017 it was 132, then decreased to 68 in 2018. However, in 2019 there was an increase again to 86 cases. In 2020, the number of cases of illegal Fishing rose slightly to 88 and increased again in 2021 to 109. However, in 2022 there was a drastic decrease to 46 cases of Illegal Fishing.

From this data, fluctuations in the number of cases can be seen in illegal Fishing from year to year. There was a downward trend in 2018, but then there were up-and-down fluctuations in the following years. Even though there will be a significant decline in 2022, further analysis needs to be carried out to understand the factors that influence these fluctuations, such as law enforcement efforts, supervision, or changes in response policies. Illegal Fishing in Indonesia.

The results of interviews with Bakamla (Maritime Security Agency of the Republic of Indonesia) revealed several factors that contributed to the rise and fall of the number of illegal fishing. Bakamla collaborates with the Indonesian Navy, the Ministry of Maritime Affairs and Fisheries, and the Indonesian Maritime Police in efforts to enforce the law and prevent illegal fishing. Apart from that, joint maritime security operations involving Bakamla and other related institutions are also being carried out actively. These efforts include patrolling, inspecting, and arresting vessels involved in illegal fishing.

Bakamla RI has a Legal Enforcement Unit (UPH) which is tasked with coordinating criminal acts at sea caught by Bakamla RI operations with PPNS (Civil Servant Investigators), the Republic of Indonesia Police, and the Prosecutor's Office. International cooperation is also an important factor in dealing with the problem of illegal fishing. In the context of foreign cooperation, Indonesia has established partnerships with international organizations and neighboring countries through exchanging information and joint patrols.

Impact of Illegal Fishing On Indonesian People

In general activities Illegal fishing has detrimental consequences for the environment, security stability, and livelihoods of the Indonesian people. Indonesian waters, especially areas such as the Coral Triangle, are home to the highest diversity of reef fish and coral species in the

world. However, with illegal fishing, fish populations decline and damage to marine ecosystems occurs which has long-term impacts. In addition, the fishing methods used in illegal fishing, such as the use of fish bombs, cyanide poisons, and trawls, also have negative effects on the sustainability of marine ecosystems which are very important for the survival of various species. These practices not only harm target fish but also harm non-target marine organisms and damage complex ecosystem structures.

Further, illegal fishing also poses a serious threat to the livelihoods of millions of Indonesians, especially those living in coastal communities. Fishermen do illegal *fishing* can damage fish resources which are the main source of livelihood for many coastal communities. Besides that, illegal fishing It also disrupts the sustainability of legal fishing and has an impact on reducing catches which can affect fishermen's income and welfare. In line with this problem, it can be concluded that illegal fishing has a complex relationship with economic losses, and environmental damage, and ultimately will hurt national food security.

A *Causal loop diagram* or cause-and-effect loop diagram is a method used to map cause-and-effect relationships between related factors in a particular system or case. In context *fishing*, a *causal loop diagram* can be used to analyze the factors that contribute to the problem of illegal *fishing* and its impacts. First, *illegal fishing* causes significant economic losses. Illegal fishing activities disrupt legally operating fishermen, reduce their income, and create instability in fish prices in the market. Besides that, *illegal fishing* also creates unfair competition in the fishing industry, disrupts market balance, and harms fishermen who comply with regulations.

Second, *illegal fishing* also has serious impacts on the environment. Practices of illegal *fishing* such as the use of destructive fishing gear, *overfishing*, and unselective fishing, result in a decline in fish stocks and damage to marine ecosystems. Biodiversity in Indonesian waters is threatened due to activities *illegal fishing* which contributes to the decline of fish populations and damage to coral reefs. This disrupts marine ecosystem cycles, reduces fisheries productivity, and threatens the sustainability of fisheries resources in the future.

Third, *illegal fishing* hurts national food security. Indonesia is a maritime country with abundant fisheries resources. However, as it is *illegal fishing*, these potential resources are exploited uncontrollably, threatening the availability of fish and marine food sources. National food security is disrupted due to a decline in fish stocks, economic losses in the fisheries sector, and instability in food prices. Additionally, if *illegal fishing* If allowed to continue, the impact will spread to other sectors such as the food industry, distribution, and community welfare. (June et al., 2019). Then, there are violations of water areas due to activities of *illegal fishing* often involving vessels fishing in Indonesian waters or sea areas without having a permit. This is of course considered a violation of state sovereignty and of course, can trigger tensions between countries.

The ongoing impact of *illegal fishing* will have serious implications for security stability, especially with the increased risk of conflict with countries around the border. When fishermen are involved in activities *illegal fishing* in waters that are the sovereign territory of other countries, this can trigger tensions between countries and disrupt bilateral relations. Conflicts related to *illegal fishing* include incidents of ship arrest, disputes related to maritime borders, and threats to state sovereignty. This illegal action could trigger regional instability and disrupt peace and cooperation in maritime areas that are prone to disputes. Therefore, handling *illegal fishing* is not only an environmental and economic issue but also has important implications for regional security stability. (Rahman, 2016).

The Role of Defense Management in Protecting State Security From Illegal Fishing

From the perspective of national defense, especially in Indonesian waters, it is clear that the perpetrator's *fishing* has violated state sovereignty. These violations include exceeding established territorial boundaries, illegally exploiting resources in Indonesian waters, and committing maritime crimes such as theft of fish resources without heeding Indonesian law. All of these actions are by the concept of sovereignty which states that the state has the highest authority within its territorial boundaries, including air, land, and sea areas. (Sartono *et al.*, 2019) therefore defense management plays a key role in protecting state security from illegal fishing practices. Following are some of the important roles of defense management in this context:

I. Monitoring and Care of Waters

Collaborate with related institutions to improve supervision and protection of national waters. This includes strengthening the presence of patrol and surveillance vessels using advanced technology to detect and prevent illegal fishing in Indonesian waters (Harruma, 2022).

II. Hard Policy Development

Defense management plays a role in designing and implementing tough policies regarding illegal fishing. This policy aims to provide a deterrent effect to perpetrators of illegal fishing and minimize the occurrence of this practice.

III. International Cooperation

Cooperate with other countries and international institutions to tackle illegal fishing across borders. This includes cooperation in terms of information exchange, law enforcement, and coordination of joint maritime operations.

IV. Use of Sea Power

Ensure that the country's sea power or maritime power does not only depend on the Navy but also involves other aspects such as handling illegal fishing to ensure the security of Indonesian waters.

Thus, defense management has a strategic role in protecting state security from the threat of illegal fishing and ensuring the sustainability of fisheries resources in Indonesian waters.

Handling Efforts Illegal Fishing

Indonesian waters attract the interest of foreign fishermen in Illegal Fishing because there is potential for abundant fish resources and vast sea waters. In addition, the lack of adequate supervision in the fisheries sector makes Indonesian waters vulnerable to illegal fishing. Adequate monitoring requires a large budget allocation and an effective water area monitoring system. Apart from that, there are weak policies that regulate the problem of illegal fishing and the vulnerability of the legal system in Indonesia provides gaps for activities to occur in illegal fishing. Therefore, more effective efforts are needed to eradicate illegal fishing by optimizing water surveillance, increasing law enforcement capabilities, and strengthening maritime policies.

Furthermore, enforcement of legal regulations at sea is still not integrated in Indonesia. With the vast area of Indonesia's marine waters, fisheries supervision cannot be fully carried out by one agency alone. Therefore, synergy is needed between various related agencies in water monitoring to reach all Indonesian waters. On the other hand, the lack of effective supervision and law enforcement is also a contributing factor. Indonesia's vast and complex maritime territory and abundant resources make it difficult to carry out comprehensive monitoring. The lack of adequate human resources, technology, and facilities to carry out supervision has also worsened the situation. Furthermore, weak coordination between various related agencies such as the Ministry of Maritime Affairs and Fisheries, the Police, and the Indonesian Navy also affects response efforts. Illegal Fishing (Suharto *et al.*, 2018)

To overcome fisheries crimes, Bakamla RI collaborates with PSDKP (Marine and Fisheries Resources Supervision) and the Indonesian Navy in carrying out maritime security patrols. These two institutions have authority in the EEZ area. Perpetrator *illegal fishing* Domestically, they tend to fish outside the boundaries of the areas designated for fishing. Meanwhile, foreign fishermen generally catch fish around the border or within the Indonesian EEZ area, and their activities are monitored through monitoring carried out by Puskodal (Sea Patrol Command and Control Center) Bakamla RI.

The role of the Indonesian people in maintaining maritime security in Indonesia has a significant impact. Especially in efforts to eradicate illegal fishing, communities play an important role in maintaining the sustainability of fisheries resources and protecting Indonesian waters. Indonesian fishermen, as an integral part of coastal communities, have extensive knowledge and experience regarding navigation, sea characteristics, and fish potential in various regions. They have a deep understanding of the existence of fish species, appropriate fishing seasons, and sustainable fishing techniques.

However, in some cases, there is a lack of awareness and understanding in fishing communities regarding the regulations and boundaries of designated fishing areas. This can lead to unintentional or even intentional violations of these regulations. For example, fishing is carried out outside the designated area limits or the use of fishing gear that damages the environment. To increase the role of the community in maintaining maritime security, it is important to carry out more intensive education and outreach. Efforts are needed to increase the fishing community's understanding of the importance of sustainability of fisheries resources and the need to comply with fishing regulations. In addition, active community participation in monitoring and reporting activities of *illegal fishing* can also be an effective step in maintaining maritime security.

Bakamla RI realizes the importance of community involvement in eradicating illegal fishing. Therefore, Bakamla has launched the Rapala (Volunteer Guardians of the Archipelago) program which aims to involve the maritime community, including fishermen, as the eyes and ears of law enforcement officers regarding criminal acts at sea. This program aims to cadre the maritime community so that they can play an active role in reporting activities of *illegal fishing* and protecting Indonesian waters.

A concrete example that shows the importance of collaboration between fishermen and law enforcement officials is when fishermen in Natuna reported the presence of Chinese fishing vessels and Chinese Coastguard vessels violating Indonesian territorial boundaries. However, when the Indonesian patrol boats arrived at the location, the ships had already moved away and moved to another place to leave Indonesian waters. This incident emphasizes that collaboration between fishermen and law enforcement officers can be an effective step in eradicating illegal fishing. The community, including fishermen, needs to collaborate actively with law enforcement officers and change the paradigm that law enforcement officers are a threat to them. By working together, the public can provide valuable information to law enforcement officials, report activities of illegal fishing, and protect fish resources in Indonesian waters.

In this regard, to prevent and eradicate cases of illegal fishing In Indonesian waters, several treatment recommendations are needed that can be taken by both the government and the community to overcome this problem of illegal fishing:

a. Government

1. Strictly implement applicable laws against perpetrators of illegal fishing, in this case, such as fines and prison sentences for individuals involved in illegal fishing. By the provisions of Law No. 45 of 2009 on fisheries and Law No. 3 of 2004
2. Maximizing surveillance in border waters, such as the North Natuna Sea, by deploying patrol boats from the Navy, BAKAMLAH, or the Ministry of Maritime Affairs and Fisheries to arrest foreign fishermen who carry out these actions. *illegal fishing* in Indonesian waters.
3. Implementing the ship sinking policy for *legal fishing* that has been caught, which has been authorized by article 69 of Law No. 45 of 2009 concerning fisheries.
4. Increasing international cooperation

b. Community Role:

1. Increase public awareness about the importance of preserving fish resources and the negative impacts of illegal fishing.
2. Helps to report activities of illegal fishing that have been detected by authorities such as the Indonesian Navy, Police, or Bakamla.
3. Support government efforts to overcome *illegal fishing* by not buying the catch illegal fishing.

It is important to note that controlling *illegal fishing* requires close cooperation from the government, society, and various stakeholders. In addition, efforts to resolve the problem of Illegal Fishing, community participation, comprehensive supervision, and law enforcement are needed. Stricter supervision and law enforcement needs to be carried out by increasing the number of personnel, developing sophisticated monitoring technology, and strengthening cooperation between related agencies.

CONCLUSION

Illegal fishing is a serious problem that has a major impact on Indonesia, especially in terms of the sustainability of marine resources, security stability, and the livelihoods of coastal communities. Indonesia as an archipelagic country with a vast sea area has big challenges in monitoring and dealing with illegal fishing. Serious efforts are needed from various parties, including the government, society, and related institutions, to overcome this problem. The government must take firm steps, including strong law enforcement, maximum water monitoring, and implementation of applicable policies. International cooperation is also an important key in dealing with illegal fishing in Indonesian waters. The role of the community, especially fishermen, is vital in efforts to eradicate illegal fishing. They have extensive knowledge and experience of local waters and fish potential. Collaboration between fishermen and law enforcement officers can be an effective step in protecting Indonesian waters. Defense management also plays an important role in protecting national security from the threat of illegal fishing. Water control, development of firm policies, international cooperation, and use of maritime force are key aspects that must be considered.

Overall, joint efforts from all parties are key to overcoming the problem of illegal fishing and protecting the valuable natural resources in Indonesian waters for future generations.

REFERENCES

- Banjarani, D. R. (2020). Illegal Fishing in the Study of National Law and International Law: Its Relation to Transnational Crime. *Kertha Patrika*, 42(2), 150. <https://doi.org/10.24843/kp.2020.v42.i02.p04>
- Desi Yunitasari. (2020). Penegakan Hukum Di Wilayah Laut Indonesia Terhadap Kapal Asing Yang Melakukan Illegal Fishing Mengacu Pada Konvensi United Nations Convention on Law of the Sea 1982. Penegakan Hukum Di Wilayah Laut Indonesia Terhadap Kapal Asing Yang Melakukan Illegal Fishing Mengacu Pada Konvensi United Nations Convention on Law of the Sea 1982, 8(1), 1–18. <https://ejournal.undiksha.ac.id/index.php/JJPP>
- Fadli, M. R. (2021). Memahami desain metode penelitian kualitatif. *Humanika*, 21(1), 33–54. <https://doi.org/10.21831/hum.v21i1.38075>
- Harruma, I. (2022). *Government Efforts to Overcome Illegal Fishing*. Kompas.Com. <https://nasional.kompas.com/read/2022/05/18/00150031/usaha-Pematasi-illegal-fishing#:~:text=The government's next effort to overcome illegal fishing is to strengthen security, add and strengthen vessel patrol.>
- Juned, M., Galby, :, Samhudi, R., Rahmat, :, & Lasim, A. (2019). Comparative Study of Post-Marriage Nationality Of Women in Legal Systems of Different Countries The Impact Indonesia's Sinking of Illegal Fishing Ships on Major Southeast Asia Countries 62 International Journal of Multicultural and Multireligious Understanding The Impact Indonesia's Sinking of Illegal Fishing Ships on Major Southeast Asia Countries. *International Journal of Multicultural and Multireligious Understanding*, 6(2), 62–76.
- Lasabuda, R. (2013). Development of Coastal and Ocean Areas in the Perspective of the Archipelagic State of the Republic of Indonesia. *Platax Scientific Journal*, 1(2), 92. <https://doi.org/10.35800/jip.1.2.2013.1251>
- Muhammad, S. V. (2012). Illegal fishing in Indonesian waters: problems and efforts to deal with them bilaterally in the region. *Politics Journal*, 3(Illegal Fishing in Indonesian Waters), 59–86. <https://doi.org/10.1002/asi>
- Nurhakim, S. (2017). Implications of Iuu Fishing in Fish Resource Management in Indonesia. *Journal of Indonesian Fisheries Policy*, 1(1), 61. <https://doi.org/10.15578/jkpi.1.1.2009.61-66>
- Rahman, A. (2016). The Impact of Illegal Fishing on Fishermen's Income in Liukang Tangaya District. In *Digilibadmin.Unismuh.Ac.Id*.
- Sartono, Prakoso, L. Y., & Sianturi, D. (2019). Government Policy in Efforts to Handle Illegal Fishing from the Point of View of National Defense at Sea. *Maritime Defense Strategy*, 5(1), 51–72.
- Suharto, B. Y., Budiman, J., & Karwur, D. B. (2018). Analysis of Fishing Vessel Supervision on Overcoming Illegal Fishing in the Waters of Sangihe Islands Regency, Indonesia. *Journal of Maritime and Fisheries Socio-Economic Policy*, 7(2), 115. <https://doi.org/10.15578/jksekp.v7i2.6099>