

## **The Fishermen Conflicts Management as Results of Illegal Fishing in Coastal Waters of Meranti Island**

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### **Abstract**

Illegal fishing is one of the biggest problems currently being faced from various existing marine and fishery activity problems. The fishing ground in other countries has started to run out, while the abundance of fish in the Indonesian seas makes foreign fishermen tempted to exploit fish in the Indonesian sea illegally, especially in the areas around the coast of Riau province, for example, in the Kabupaten of Meranti. This research with the systematic literature review method attempted to analyze how Indonesia's strategies and policies are in maintaining the defense of the border areas to prevent illegal fishing in the coastal waters of Riau Province in a sustainable manner using a systems approach. The results of the study stated that the occurrence of illegal fishing is also triggered by the need and demand for certain fish stocks that have high economic value, especially those consumed by visitors of expensive restaurants overseas.

**Keywords:** The Fishermen, Management, Illegal.

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## **1. Introduction**

Indonesia, known as the largest maritime country globally, boasts a vast expanse of water that constitutes the majority of its territory. It comprises approximately 16,056 islands and an extensive coastline measuring 99,093 kilometers, making it the world's fourth-longest coastline, surpassed only by Canada, the United States, and Russia. The total area of Indonesia spans 7.9 million km<sup>2</sup>, with 1.8 million km<sup>2</sup> designated as land area and 5.8 million km<sup>2</sup> as water area. Within this water area, there are 3 million km<sup>2</sup> of territorial sea and 2.8 million km<sup>2</sup> of exclusive economic zone (EEZ), accounting for 62% of the country's overall area (Lasabuda,2013).

The United Nations Convention on the Law of the Sea 1982 (UNCLOS, 1982) grants Indonesia the rights to utilize 2.7 million km<sup>2</sup> of marine waters within its EEZ. This includes the exploration, exploitation, and management of biological and non-living resources, as well as research activities and the establishment of installations or artificial islands. Essentially, Indonesian waters encompass 75% of the country's total area, which is three times larger than its land area (Kusumaatmadja,2000).

Coastal areas in Indonesia are home to a significant portion of the country's population, with approximately 65% of the total 467 regencies/cities located along the coast. By 2018, Indonesia's population had surpassed 265 million people, and more than 80% of them resided in coastal areas, as reported by Akhmad in 2005. The marine resources within Indonesia's vast waters, ranging from inland waters to the Exclusive Economic Zone, offer abundant potential in terms of both biological and non-biological resources. This potential, particularly in the fisheries sector, has the capacity to bolster the country's economy and serve as a catalyst for social development.

Given Indonesia's status as a developing nation with a sizable population and a geographical structure surrounded by the sea, the ocean plays a crucial role in the livelihoods of many Indonesian individuals, particularly those living in coastal regions. The sea serves as a fundamental resource for meeting their basic needs. Moreover, as an archipelagic country, Indonesia recognizes the strategic importance and immense potential of the sea in various aspects, including the economy, defense, and security.

If efficiently utilized, the exploitation of these resources would bring benefits to the country's foreign exchange reserves and the sustainable improvement of social well-being, particularly for coastal communities. However, the vast potential of marine waters also creates opportunities for

theft and illicit exploitation of marine resources, posing risks to the nation and society, including illegal fishing, piracy, smuggling, human trafficking, piracy, and unlawful migration. Gallic (2004) disclosed that illegal fishing activities contribute up to 30% of the global fish catch. Apart from its economic drawbacks, illegal fishing poses a threat to the preservation of fish resources.

According to data from the Ministry of Maritime Affairs and Fisheries, there are 14 fishing zones worldwide, with one of them situated in Indonesian waters (T. Sihotang, 2012). The Malacca Strait, within Indonesia, is a highly potential area prone to illegal fishing. Considering these circumstances, illegal fishing can undermine the management of fishery resources in Indonesian waters and lead to overfishing in several Indonesian Fishery Management Areas/WPP resources (Sunyowati,2013).

The term "illegal fishing" derives from the word "illegal," meaning unauthorized, and "fishing" as a noun referring to the act of catching fish (Mahmudah, 2015). Foreign fishermen engaging in illegal fishing activities in Indonesian waters are believed to be part of a transnational network operating systematically and sustainably (Purdjiantoro,2019).

Illegal fishing activities predominantly occur within fisheries management areas, involving foreign fishing vessels/KIA from neighboring countries (Mitha Dwi Utari, 2018). As an archipelagic country rich in fish resources, Indonesia faces a widespread problem of illegal fishing. The country's limited capacity for sea surveillance and the vastness of its waters exacerbate the issue of illegal fishing activities.

Lewis Alfred Coser (Juju and Kun Maryati,2007:54) defines social conflict as a disagreement concerning values, status, power, and limited resources, which leads to neutralizing, harming, or eliminating the opposing party. On the other hand, Duane Ruth-Heffelbower (G.Pruitt Dean,2011:9) describes social conflict as a situation that arises when two or more parties perceive misalignment in their positions, inadequate resources, or actions taken by one party to hinder or undermine the success of another's goals. Illegal fishing activities are carried out by foreign fishermen from neighboring countries.

Fisheries and marine resources are inherently transboundary, making them prone to power conflicts. These resources have long been associated with complex issues related to property rights (Hardin,1968; Charles,2001). At the community level, especially among coastal communities, it is crucial to

consider the various ecosystems present in the sea. The fishing community relies on the sea as a source of economic livelihood, which supports their daily needs. The utilization of the sea has become a traditional practice passed down from ancestors. According to data from the Ministry of Maritime Affairs and Fisheries (KKP), Indonesia's fishery exports have shown a tendency to increase annually. In 2009, the value of fishery exports reached 2.5 billion USD, and in 2010, it rose to 2.8 billion USD.

A trawl survey conducted in 2008 revealed differences in the dominant demersal fish species caught in the Malacca Strait. The southern part of the Malacca Strait (Bengkalis waters and surrounding areas) showed a dominance of Sciaenidae (gulamah/tigawaja fish), Pomadasidae (gerot-gerot fish), Soleidae (tongue fish), and kurau fish (*Polidactylus* sp.). In contrast, the northern part of the Malacca Strait (Belawan waters to Tanjung Balai Asahan) was dominated by fish species from the families Synodontidae (beloso fish), Mullidae, Nemipteridae (shrimp fish, brownies), and Leiognathidae (petek fish). Economically important reef fish species include yellowtail grouper, napoleon, coral grouper, duck grouper, bluffed grouper, mud grouper, sunu grouper, lingkis bear, and yellow bear, as indicated by Fisheries Statistics (DJPT,2012).

A significant portion of the world's fish supply comes from the exploitation of marine resources, which has reached overfishing levels in several countries and international waters. This is primarily driven by the increasing global demand for fish. Population growth, improved quality of life, and changing dietary preferences towards healthy foods (low cholesterol and high protein) have contributed to the rising demand for fish. Additionally, fish is a quick and internationally accepted source of nutrition that transcends age, nationality, and religion.

As an archipelagic country with 70 percent of its territory consisting of ocean, Indonesia possesses enormous potential for marine and fishery resources. However, this potential has not been optimally utilized or made a significant contribution to national development. Irresponsible exploitation of marine and fishery resources and the emergence of Illegal, Unreported, and Unregulated (IUU) Fishing have resulted in losses for the country (Lamintang,2013). IUU Fishing activities within Indonesia's territorial waters not only harm the nation's maritime sector revenues but also impact its relations with foreign parties and other countries. Many experts attribute the occurrence of IUU Fishing to large-scale fishing operators rather than

small-scale ones, suggesting that foreign fishing industries are more prone to violations in terms of IUU Fishing (Dermawan,2013).

This research is continued with research questions such as.

RQ 1: What is the condition of illegal fishing in international waters?

RQ 2: What are the characteristics of fishing communities?

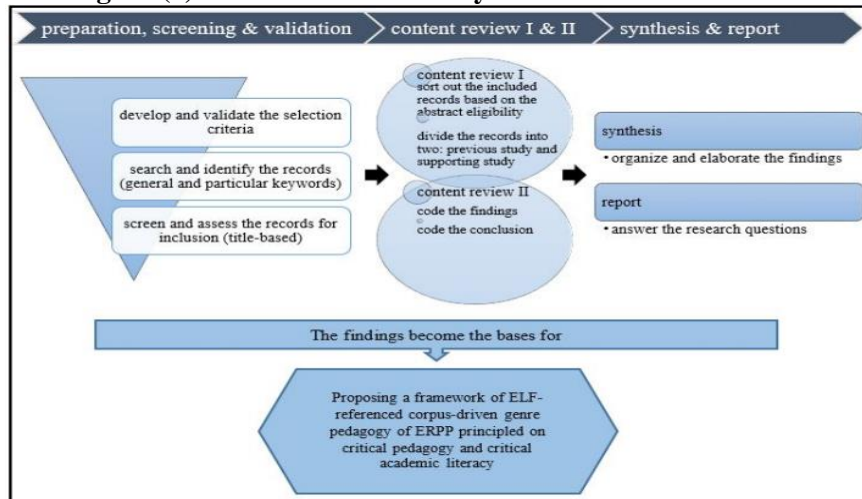
RQ 3: How is the implementation of prevention and control of illegal fishing?

## **2. Research Methods**

This study tries to analyze how Indonesia's strategy and policies in maintaining the defense of the border area to prevent illegal fishing in the coastal waters of Riau Province in a sustainable manner using a systems approach (Winardi,1989). In this study, researchers used indirect research data as a support in conducting research. Researchers collect data through the study of relevant literature so that the type of data is secondary data. Data were obtained from several written sources such as journal articles, books and online newspapers related to research. This data is obtained through the internet and libraries (Kitchenham and Charters,2007; Pati and Lorusso,2018).

This research using the systematic literature review method adopted the framework of Xiao and Watson (2017) as a guideline for implementing a systematic qualitative review using the thematic synthesis method (Lubis, 2020). The procedures for this framework consist of three main steps: (1) preparation, screening, and validation, (2) content review, and (3) synthesis and reporting. Each stage of this framework consists of several steps.

**Figure (1): Data Collection Analysis Procedure**



The first stage is to search for relevant literature. In searching and browsing the literature, several things must be considered, including the database used. To identify published studies on illegal fishing, a literature search for articles, book chapters, theses was performed using all databases such as Science Direct, Psyc Info, Sage, Taylor & Francis, Online thesis databases, etc. The findings also cover relevant journals in this field, such as Aquatic Sciences and Management, Journal of Indonesian Law, Journal of Indonesian International Law, Journal of The National Maritime Foundation, International Journal of Multicultural and Multireligious Understanding, Journal of Indonesian Fisheries Science and Technology, Journal Coastal Development. The search determined that the term "illegal fishing management",

Overall, from the search results, there are 9,262 literature relevant to the keyword. Literature consists of articles (6740), encyclopedias (278), and book chapters (1335). From these findings, researchers sort references based on the year of publication. Only references in the last ten years can be used, namely as many as 4,132 literature that meet these criteria.

Literature review and analysis I was then carried out to select and sort literature according to the theme studied. From the results of this study and analysis I, there are 39 literatures which are then classified into three main categories based on the subject matter: existing illegal fishing, profiles of fishing communities, and implications for preventing illegal fishing.

Overall, there are 19 literatures on illegal fishing. Although with a different focus of discussion, in general it discusses illegal fishing. Furthermore, there are 10 literatures on the profile of fishing communities and 10 literatures on the implementation of illegal fishing prevention.

Literature review and analysis II begins by reading all sections of the paper but focuses on findings, discussion, and conclusions for the synthesis and reporting stages. Furthermore, the synthesis and reporting phase aims to integrate findings from different studies, highlight critical contradictory data, and provide suggestions on how these contradictions can be resolved by future research (Piper,2013).

### **3. Results and Discussion**

#### **3-1.RQ1: Existing Illegal Fishing**

There are 19 literatures discussing illegal fishing. These articles discuss the meaning, legal basis, and impacts of illegal fishing. Illegal fishing, or currently better known as Illegal Unreported Unregulated (IUU) fishing, is the act of stealing natural resources (plants, fish, marine biota) from the waters of other regions/countries. Illegal fishing is a criminal act. Illegal fishing doesn't just happen in one country. Every country with large territorial waters has the same problems regarding illegal fishing (Nova, 2017). Countries experiencing problems with illegal fishing include Indonesia, Australia (Williams and et al,2020), Thailand (Kadfak and Linke, 2021), Iran (Daliri and et al,2015), Russia (Sukhodolov and et al,2021), United States of America (Pramod and et al,2014), South Africa (Coning and Witbooi,2015) and others.

Illegal fishing backgrounds vary. Priscoli (2002) states that illegal fishing can be caused by miscommunication, different perceptions, ego battles, personality differences, different views about good and bad (value conflicts), different interests and structural factors (Marteache and et al,2015; Mirrasooli and et al,2019; Rusmilyansari,2012).

The impact of IUU Fishing certainly reduces resources in the ocean (especially fish) (Williams and et al,2020). In addition, it is felt in the economic sector and has an impact on environmental sustainability and coastal seas. (Wisdom,2013.; Nova,2017). Illegal fishing activities are usually followed by other crimes such as the entry of illegal immigrants, slavery, narcotics, human trafficking, arms trade, carried out by foreigners, across national borders, and of course have a negative impact (Lewerissa, 2018). This is reinforced by (Kadfak and Linke,2021) which explain that

illegal fishing has resulted in the practice of slavery among immigrant fish workers (Kartawidjaja,2020).

### **3-2.RQ2: Fisherman Community Profile**

Ten literatures discuss fishing communities. The focus of the discussion is how the characteristics of fishing communities, fishing conflicts, human resource management, etc. The fisheries sector is considered very important because it has social and economic benefits for coastal communities and the wider community. At the national and local levels, fisheries contribute to food security, employment, domestic income, foreign exchange earnings, and fiscal revenues. The fishing industry is dominated by the small-scale sector, which currently supports around 83,157 small-scale fishers and their 583,625 dependents, about 667,000 people (Alabsi and Komatsu,2014).

From the analysis of the literature regarding fishermen's conflict resolution strategies, it is concluded that fishermen must carry out a scoping strategy in all economic activities, both fishing activities and non-fishing activities. Not all fishermen work as full-time fishermen. Some only work certain peaks and seasons, while others do non-fishing work. There are several variations of production activities in fishermen's economic adaptation strategies outside the peak season, such as cultivating forest land and becoming tour guides (Alexander and et al,2018; Belachew and et al,2013; Blythe and et al,2017).

### **3-3.RQ3: Implement Illegal Fishing Prevention**

Ten literatures discuss efforts to prevent and deal with illegal fishing. This literature discusses the efforts made by a country to prevent and combat illegal fishing. Every country has a different way of dealing with the situation and conditions of its territory.

One of the efforts to handle and eradicate illegal fishing is to strengthen related policies and regulations so as to increase the complexity of a country's maritime security (Dian Anggraini and et al,2018). This follows Daliri (2015), who explains that the Iranian Parliament adopted the Protection and Exploitation of Fisheries Resources Act in 1995 to promote sustainable development and exploiting Iranian fisheries through responsible management. Meanwhile, Indonesia implemented a policy of sinking foreign illegal fishing vessels, with the hope of further strengthening national sovereignty (Muhammad Insan,2018). Another strategy used is the

development of performance monitoring of fishing vessels at the Monitoring Post (Juned and et al,2019).

#### **3-4. Illegal Fishing in the Coastal Waters of Meranti Regency**

Indonesia, as an archipelagic country, boasts a coastline stretching 108,000 km and is home to numerous small islands, including those bordering other countries. These small islands possess valuable natural resources, particularly in the realm of fisheries. The management of fisheries and marine resources involves various stakeholders, including the Central Government, Regional Governments, Related Agencies, Fisheries Entrepreneurs, Fishermen, Local Communities, Academics and Researchers, and Non-Governmental Organizations. These parties play a significant role in formulating policies related to the utilization and management of fisheries and marine resources. However, the effectiveness of these policies remains suboptimal, impacting the utilization and management of these resources. Consequently, legal measures are necessary in accordance with relevant provisions and laws in the field of fisheries (Yourdy,2019).

Riau Province, characterized by its extensive coastal waters, holds considerable maritime potential. With such potential, it should ideally uplift the lives of fishermen who depend on marine resources. However, in reality, fishing communities continue to suffer from persistent poverty, with fishermen often being identified as the poorest segment of society within the agricultural sector.

The utilization and management of marine and fishery resources encompass ecological, economic, social, institutional, and scientific aspects. Unfortunately, due to irresponsible practices and violations of regulations, the utilization and management of these resources fall short, resulting in significant resource loss each year. In the case of illegal fishing in Riau Province, two sectors are directly threatened: the economy and the environment. Illegal fishing activities by foreign vessels inflict damage on marine ecosystems through the use of destructive fishing gear, such as explosives and trawls.

Illegal fishing in the coastal waters of Riau Province is carried out by both local and foreign fishermen. Numerous instances have been reported of illegal foreign fishermen deliberately entering Riau Province waters. The issue of illegal fishing has also sparked conflicts between the Indonesian government and neighboring countries in the waters of the Malacca Strait. Patrol boats from other nations have frequently encroached upon Indonesian

waters along the Malacca Strait, a practice that contravenes the law (Kusumo,2010).

According to Fisheries Law number 11 of 2019 (amending Law number 31 of 2004), illegal fishing refers to the act of stealing fish without the necessary permits (SIUP and SIPI) and employing destructive methods such as explosives, toxic substances, or hazardous materials that cause damage. Such acts are considered criminal offenses and are punishable under Article 84, paragraph (1) of Law Number 31 of 2004.

The abundant and high-value marine resources found in the waters of the Malacca Strait entice fishing entrepreneurs, both local and foreign, to continue their exploration. However, this pursuit has also led to illegal practices such as environmentally unfriendly fishing techniques and overfishing, which are collectively known as illegal fishing.

Theoretically, the crime of illegal fishing is the act of catching fish: (Silalahi,2006)

1. Without a Fishing Permit (SIPI).
2. Using a fake Fishing Certificate (SPI).
3. The contents of the permit document do not match the vessel and type of fishing gear used to catch the type and size of fish that are prohibited.

During the period from 2014 to 2016, the policy of sinking foreign vessels involved in illegal fishing witnessed a positive trend. Law enforcement cases relating to maritime and fishery crimes, particularly illegal fishing, increased during this period. In 2014, 58 cases were handled, while the number rose to 198 cases in 2015 and further increased to 237 cases in 2016.

Data published by the FAO reveals that the losses incurred by the state due to illegal fishing amount to 30 trillion rupiah annually. Assuming the loss rate is 25% of the total fishery potential, which is estimated to be 6.4 million tonnes, it equates to 1.6 million tonnes or 1.6 billion kilograms. TRUST's economic magazine adds that economic losses resulting from illegal fishing in Indonesia reach 300 trillion rupiah, nearly half of the state budget. This implies that the economic loss surpasses 20% of the current education budget in Indonesia.

Illegal fishing within Indonesian waters diminishes the contribution of capture fisheries in the Indonesian Exclusive Economic Zone (EEZ) and the high seas to the national economy (GDP). It also leads to the depletion of

fishery resources that rightfully belong to Indonesia. The government claims that losses resulting from illegal fishing practices amount to US\$ 4 billion annually. Assuming the price of illegal fish falls within the range of US\$ 1,000-2,000 per tonne, Indonesia loses around 2-4 million tonnes of fish each year. Another calculation suggests that the total loss to the state due to illegal fishing reaches US\$ 1.924 billion annually, comprising US\$ 537.75 million in violations of operational areas, US\$ 142.5 million from forged documents, US\$ 1.2 million from undocumented or illegal vessels, and US\$ 780 million from foreign crew members. The coastal areas of Riau province, such as Bengkalis and Rokan Hilir, possess an abundance of fish, mainly due to their proximity to the Malacca Strait and the South China Sea. The area sees significant maritime traffic, which also leads to numerous cases of illegal fishing conducted by foreign entities.

Illegal fishing impacts all aspects of life, including the state, society, and the marine environment. Overfishing, overcapacity, threats to fish resource conservation, an unfavorable business climate, and weakened company competitiveness are examples of the consequences of illegal fishing activities. According to calculations by Susi Pudji Astuti, losses resulting from illegal fishing activities amount to US\$ 20 billion or approximately Rp. 240 billion. Mrs. Susi also mentioned that illegal fishing in Indonesia is the largest in the world. Moreover, the damage to Indonesia's image in the international arena due to mismanagement of fishery resources is another loss affecting national dignity.

In 2016, a total of 243 cases of maritime and fisheries crimes were reported. Of these cases, 218 were related to fisheries crimes, primarily illegal fishing. Information obtained from officials at the Directorate General of PSDKP KKP's Violation Handling Directorate indicates that out of the 218 cases of illegal fishing, 174 cases involved fishing vessels flying foreign flags. The data includes 1 case involving a Chinese-flagged vessel, 1 case with a Thai-flagged vessel, 1 case with a Japanese-flagged vessel, 91 cases with Vietnamese-flagged vessels, 44 cases with Malaysian-flagged vessels, and 36 cases with Philippine-flagged vessels.

Data on the results of the operation of the surveillance vessels of the Directorate General of PSDKP during 2016 in Indonesian waters show that the government has arrested fishing vessels that have committed illegal fishing. As a result of these operations, as many as 140 fishing vessels with

foreign flags have been secured for processing according to the provisions of the applicable laws and regulations.

The Directorate General of Maritime and Fishery Resources Supervision of the Ministry of Maritime Affairs and Fisheries emphasized that since 2014, the sinking of foreign vessels carrying out illegal fishing has always been carried out through the mechanism provided for in Article 76A. Law Number 45 of 2009 concerning Amendments to Law Number 31 of 2004 concerning Fisheries juncto Article 38 jo. Article 45 of Law Number 8 of 1981 (KUHAP). The mechanism stipulates that objects and/or tools used in and/or the results of fisheries crimes can be confiscated for the state or destroyed after obtaining approval from the Head of the District Court, and based on a court decision that has permanent legal force. forced (inkracht) as stipulated in the Criminal Procedure Code. This is reinforced by the Supreme Court Circular Letter No. 01/Bua.6 /HS/SP/III/2015.

The Ministry of Maritime Affairs and Fisheries has recorded the sinking of fishing vessels, both Indonesian-flagged (KII) and foreign-flagged (KIA), which carry out illegal fishing. From 2014 to 2016, there were 236 vessels. The details are as follows: 15 Indonesian-flagged fishing vessels, 39 Malaysian-flagged fishing vessels, 58 Philippine-flagged fishing vessels, 98 Vietnamese-flagged fishing vessels, 21 Thai-flagged fishing vessels, 2 Papua New Guinea-flagged fishing vessels, 1 Chinese-flagged fishing vessel, 1 fishing vessel fishing vessel with the Nigerian flag, and 1 fishing vessel with the Belize flag.

Even though the ship's evidence has been destroyed during the investigation stage at sea or in court proceedings, the process can still be continued at the investigation stage, prosecution stage, and trial stage in court. Regarding the evidence that will be presented at trial, it can be in the form of documentation using either a camera (photo) or audiovisual (video), fish that have been caught set aside for the purpose of proof, as well as making a report on destruction (burning and/or drowning), as long as it is supported by at least at least two pieces of valid evidence.

The Ministry of Maritime Affairs and Fisheries noted, from 2010 to 2016, there was a trend of increasing law enforcement against maritime and fishery crimes, especially illegal fishing. Law enforcement on marine and fisheries crimes from 2010 to 2016 recorded 951 cases.

**Table (1): Factors Encouraging Illegal Fishing in the Coastal Waters of Riau Province**

Illegal Fishing Factors in Meranti Waters	Information
<b>Increasing world demand for fish</b>	World fish supply is decreasing amid higher prices. When supply in other countries decreases, there is an excess demand for most types of fish from the sea, such as tuna. These fish entrepreneurs eventually diverted and looked for new fishing areas. This is what then drives the world's fishing industry to hunt fish everywhere by any means (legal or illegal). They take advantage of every opening to continue fishing.
<b>Overfishing</b>	The scarcity of fish is caused by overfishing because fishing is carried out continuously. Fishing areas in other countries have started to run out, while Indonesia is still promising. Even though there are fisheries management areas in Indonesia that are also experiencing overfishing, most of them still have potential. With dwindling supplies in their home countries, foreign ships are struggling, and they must maintain supplies of fish for consumption and maintain processing production in that country to survive.
<b>World fish price disparity</b>	Apart from high fish prices globally, another factor in illegal fishing is the difference in fish prices. Both fresh whole fish and other fish products in countries other than Indonesia are quite high, so there is still a surplus of income.
<b>Opening permits and management</b>	The fishery management system in the form of a permit system is currently open. Restrictions are only limited to fishing gear (input restrictions). This is not appropriate when faced with the factual conditions of Indonesia's geography, especially Indonesia's exclusive economic zone which borders the high seas.
<b>Indonesia's wealth of natural resources</b>	Indonesia's coastline is the 4th longest globally, and the Indonesian Sea area is very open. On the other hand, surveillance capacity, especially national surveillance vessels, is still minimal compared to the need to monitor vulnerable areas. The vast sea area under Indonesia's jurisdiction, as well as Indonesia's exclusive economic zone which borders the high seas, has become a magnet for foreign and local fishing vessels to carry out illegal fishing.
<b>Lack of supervision</b>	This reason continues to be a classic problem. Starting from the lack of budget and the lack of human resources that cannot be seriously optimized. One of the unresolved problems is the limited facilities and infrastructure for supervision and supervisory human resources, especially in terms of quantity.
<b>Weak law enforcement</b>	According to the 2008 final report submitted by KIARA, the loss was due to the large number of illegal fishing cases which until now have shown no signs of decreasing. In 2008 it increased to 198 cases, more significantly than in 2007 which only had 160 cases. Fisheries Supervisory Vessels have successfully inspected 14,951 fishing vessels and arrested 492 fishing vessels suspected of carrying out illegal fishing. These cases continue to increase from year to year because the handling has not touched the root of the problem.

(Source: Researchers,2021)

Nationally, the state is a party that is directly harmed by the crime of illegal fishing. According to Kompas, in areas such as North Sumatra, the amount of material losses due to illegal fishing can reach IDR 875 billion per year. With the calculation of North Sumatra's total fish production, namely 10 percent of the total national fish production which reached 424,201.03 tons in 2007, of which 358,072.39 tons were the result of fishing in the sea.

### **3-5.Characteristics of the Meranti Coastal Fisherman Community, Riau Province**

Coastal communities are cohesive groups of people residing in coastal regions, characterized by their reliance on coastal resources and the development of a distinct culture associated with their dependence (Satria, 2004). As per the Minister of Maritime Affairs and Fisheries' Decree Number: KEP.10/MEN/2002 on General Guidelines for Integrated Coastal Management Planning, the coastal area is designated as a transitional zone where terrestrial and marine ecosystems interact. The province is allocated the area up to 12 nautical miles from the coastline to the sea, while one-third of the sea area falls under the authority of districts/cities, and the administrative boundary of districts/cities extends 12 miles from the coast to land.

The ecological characteristics of the coastal area are unique, featuring landscapes that are resistant to change and the convergence of fresh water and seawater, resulting in several distinctive ecosystems. In terms of ownership, coastal and marine areas and the associated resources are often regarded as open access, lacking proper regulation. Consequently, everyone has the freedom to utilize these resources, leading to conflicts of interest. Most coastal communities have limited education levels, and their settlements, particularly those of fishermen, are often poorly organized and resemble slums. Given the typically low socioeconomic status of these communities, the pressure on coastal resources intensifies over time to meet their needs.

The characteristics of coastal communities are as follows: Firstly, their dependence on environmental conditions. Indonesia possesses a coastline of 108,000 kilometers, making it the world's fourth longest after Canada, the United States, and Russia. Approximately 140 million individuals (60% of Indonesia's population) live in coastal areas, with an average annual growth rate of 2%. Most cities, both provinces and regencies, are situated in coastal

areas. The marine sector contributes to around 20.06% of the national income and directly employs over 16 million individuals (Lasiki, 2012).

Natural resources and the environment are valuable development assets that can be effectively managed to provide goods and services for the well-being of society and the nation. Coastal areas, given their potential and development opportunities, play a vital role in national development, particularly during times of economic crisis. This role extends beyond economic growth to encompass the improvement of people's welfare and the equitable distribution of wealth. However, fulfilling this role requires prioritizing environmental sustainability and national unity. Coastal communities heavily rely on environmental conditions and are highly vulnerable to environmental degradation, particularly pollution, which significantly impacts their socioeconomic livelihoods.

Secondly, coastal communities experience seasonal dependence. Fishermen are occupied with fishing activities during the fishing season but face reduced fishing opportunities during the dry season, resulting in many of them being unemployed. This situation has significant implications for the socioeconomic conditions of coastal communities, especially fishermen. While they may be able to afford expensive items during the fishing season, their income plummets during the dry season, leading to deteriorating living conditions. Many fishermen must borrow money or sell goods to meet their daily needs.

The income of fishing communities is not stable on a daily basis. Some days yield abundant catches, while on others, the catch may be scarce or non-existent. The income of fishing communities is also influenced by the number of fishermen competing for fish in a particular fishing area, causing a continuous decline in catches and ultimately affecting fishermen's income. This circumstance has fostered a prevalent pattern of the patron-client relationship within fishing communities and fish pond farmers. Due to dire economic conditions, small-scale fishermen, fishing workers, and fish pond farmers often find themselves borrowing money and goods for their daily necessities from employers, referred to as "tauke" within the fishing community. Sociologically, coastal communities exhibit unique characteristics in terms of social structure, with a strong relationship between patrons and clients in the fishing business market. Patrons typically assist clients by providing capital.

Third, there is social stratification in the Meranti coastal community. There are three types of social stratification that are formed in fishing communities:

**Table (2): Social Stratification of Coastal Meranti Fishermen**

Social Stratification	Information
<b>Economically stratified</b>	The economic status of fishing communities is divided into three levels: Upper Level, namely those who have motorized boats equipped with fishing gear. This level is commonly known as big or modern fishermen. Usually, they do not go to sea, having hired labor to catch fish . Usually large fishermen also act as collectors/middlemen. Intermediate level is the group that has a boat with an outboard motor. At this level, the owner usually goes out to sea and leads fishing activities. Participating workers may exist but are limited and often only family members. The lowest level is fishing workers. Although fishermen can also work as laborers, there are many more of these workers who do not have production facilities and infrastructure at all. They only rely on their strength.
<b>Political stratification</b>	Stratification is formed based on one's authority, prestige, honor, and title. For example, someone with the title of village head and village head has a higher strata than ordinary citizens.
<b>job stratification)</b>	Stratification is formed because of differences in one's work status. This stratification is divided into three groups; Top level, those who control the big ponds. Intermediate level, namely those with medium/small pond area. At a lower level, those who do not own ponds but only manage or work as labourers.

(Source: Researchers,2021)

Fourth, Women and Children Activities: A notable characteristic of coastal communities is the active involvement of women and children in economic activities. Women and children often contribute to the household income, while boys are commonly engaged in fishing activities. As a result, many children of fishermen are unable to attend school.

Fifth, Vulnerability to External and Market Influences: The abundance of natural resources in coastal and marine areas attracts human intervention, leading to significant changes. A substantial portion of these interventions comes from outside the community, both from other regions within the country and abroad. The high level of human activity makes coastal communities heavily dependent on market conditions. Their catches must be sold in order to meet daily needs, making them vulnerable to price fluctuations. Changes in the prices of fishery products have a significant impact on the socio-economic conditions of the community.

Sixth, Strong Personality Traits, Temperamental Nature, Extravagance, and Limited Knowledge: Fishing communities are accustomed to dealing with high levels of uncertainty, as fishery resources are inherently unpredictable and difficult to forecast. In contrast, agrarian communities, for example, have more visible and predictable resource characteristics, making it relatively easier to anticipate socio-economic expectations. Consequently, it is not uncommon to find fishing communities characterized by strong personalities, temperamental behavior, and occasional extravagance due to the perception that fishery resources can be "easily obtained" from the sea.

Seventh, Strong Belief Systems and Customs: Coastal communities often maintain a strong belief in the mystical powers of the sea, leading to the observance of sea feasts or marine alms. However, in recent times, some residents have become less inclined to believe in such customs and may only carry out these rituals as a formality. Additionally, fishermen generally occupy a lower social caste within the community.

Coastal communities rely significantly on the potential and condition of coastal and marine resources. The majority of these communities consist of fishermen, individuals whose livelihoods depend on fishing. Fishermen can be categorized into four levels based on their market-oriented technological capabilities and production relations (Nasution,2005).

1. **Self-fulfillment** (livelihood). In general, fishermen in this group still use traditional fishing gear such as paddles or non-motorized canoes, and still involve family members as the main workforce.
2. **Fishermen post farmer** . This is marked by the use of more advanced fishing technologies such as outboard motors or motorized boats. Mastery of motor boats allows fishermen to catch fish in waters that are farther away and get a surplus of catches because they have greater catching power. In general, this type of fishermen still operates in coastal areas. In this type, fishermen are market oriented. While the workforce used is widespread and does not depend on family members only.
3. **Commercial fisherman**. It is fishermen who have been oriented towards increasing profits. The scale of the business is large, which is indicated by the large number of workers with various statuses ranging from workers to managers. The technology used is more modern and requires special expertise in operating the vessel and its fishing gear.

4. **Industrial fisherman.** The characteristic feature of this type of fisherman is that it is organized in a way similar to agro-industrial enterprises in developed countries. It is relatively more capital intensive, provides higher incomes than a simple fishery for both boat owners and crew members, and produces export-oriented canned and frozen fish.

The socio-economic conditions of fishermen in this coastal area are still at the poverty level. Therefore, there needs to be an effort from the government and all parties to pay attention to it. Coastal areas have strategic value because they contain potential coastal resources, biological and non-biological resources, as well as environmental services which are very vulnerable to various changes due to development.

**3-6.Prevention and Illegal Fishing in the Meranti Islands**

Meranti Islands Regency with its capital in Selatpanjang, namely on Tebing Tinggi Island, is led by a regent and deputy regent as regional heads who are elected through a democratic process. Currently, Meranti Islands Regency is administratively divided into nine sub-districts consisting of 101 villages. The districts with the highest number of villages are Rangsang and Tebing Tinggi Barat Districts with 14 villages; while the district with the least number of villages is Tebing Tinggi District with nine villages.

Geographically, Meranti Islands Regency is located at coordinates between approximately 0°42'30" -1°28'0" North Latitude, and 102°12'0" - 103°10'0" East Longitude, and is located on the east coast of the island of Sumatra. . Its coastline is bordered by several neighboring countries and is included in the Indonesia - Malaysia - Singapore Economic Growth Triangle (IMS-GT) area and has indirectly become the Hinterland Free Trade Zone (FTZ) Batam - Tj. Karimun Hall.

**Table (3): Matrix for Handling Illegal Fishing in the Meranti Islands in 2020**

NO	Location	Cases of Illegal Fishing	Case Resolution
1	Meranti Islands	In 2020: There was a conflict between the stone nets and longlines between Meranti fishermen and Bengkalis fishermen.	In 2016, there was one criminal case. The solution is to carry out coaching, empower SDKP assisted communities, empower POKMASWAS

For the Meranti Islands Regency, several potentials that can be developed and make a significant contribution to regional economic growth include the Maritime and Fisheries Minapolitan sector. All parts of the government directly regulate their activities. Minapolitan can be defined as fisheries in

the city or city area based on fisheries. In other words, Minapolitan is a fishery-based city that grows and develops due to the operation of fishery agribusiness systems and businesses that can serve, encourage, and attract fishery development activities in the surrounding area. However, this strategy is still constrained by various problems in the waters of the Meranti Islands, such as illegal fishing which is still rife so that capture fisheries income is also hampered.

**Table (4): Matrix for Handling Illegal Fishing in the Meranti Islands in 2020**

NO	Location	Cases of illegal fishing	Case Resolution
1		2017: cases of fishing by local fishermen in the forbidden zone of Meranti waters.	In 2020, there were seven criminal cases. The solution is given directions from the SDKP supervisor.

Crime prevention is a coordinated effort to suppress crime so that it does not appear or is suppressed at a level that can be tolerated by society and can be intervened by the police (Dermawan,2013). The concept of integrated crime prevention is understood as an effort to prevent crime that requires a form of cooperation between multi-professional/multi-agency actors, including the community (Kushrawanti,2016).

In overcoming the problem of illegal fishing in the Meranti Islands Regency which is sustainable and no longer causes significant damage, an appropriate solution is needed to suppress the occurrence of these activities, including:

1. Increasing awareness of fishing communities about the dangers of illegal fishing (catching fish using illegal fishing gear).
2. Increasing understanding and knowledge of fishermen about illegal fishing.
3. Rehabilitate coral reefs.
4. Creating alternative coral habitats as fish habitat so that natural coral areas are not damaged by fishing.
5. Finding the root cause of every problem that arises and looking for the right solution to overcome it.
6. Carry out law enforcement regarding fisheries, especially in terms of responsible utilization.
7. Increase supervision by establishing a special agency to handle and be responsible for illegal fishing activities.

Meranti Islands Regency also has cases of illegal fishing which are quite troubling to the community and local government. At that time, the Ministry

of Maritime Affairs and Fisheries (KKP) through the Monitoring Vessel (KP) of the Directorate General of Maritime Affairs and Fisheries conducted sea patrols around the waters of the Meranti Islands. This patrol is carried out to follow up on monitoring of the sea area to prevent fishing or illegal fishing by irresponsible persons such as foreign fishing vessels (KPA). Especially in areas where the islands face or are directly related to the Malacca Strait.

#### **4. Conclusion**

This qualitative study focuses on the management of conflicts among fishermen resulting from illegal fishing activities. The findings highlight that illegal fishing is a significant problem in marine and fishery activities, posing numerous challenges. In Meranti Regency, for instance, which includes coastal areas directly adjacent to the Malacca Strait, fishing areas in other countries have depleted while Indonesia's waters remain promising. The abundance of fish in Indonesian seas attracts foreign fishermen who are enticed to illegally exploit fish, particularly in areas around the coast of Riau province, such as Meranti Regency.

Sociologically, coastal communities possess unique characteristics, especially regarding their social structure, which involves strong customer-client relationships within the fishing market. The coastal community of Meranti Islands Regency heavily relies on the potential and condition of coastal and marine resources. These communities, comprised of fishermen, fish cultivators, fish traders, and others, reside in coastal areas and have developed distinct cultures based on their dependence on coastal resource utilization.

The occurrence of illegal fishing is primarily driven by the demand and market value of specific fish stocks, particularly those sought after by upscale restaurants abroad. The coastal community of Meranti Islands Regency, being highly reliant on coastal and marine resources, is significantly impacted by these illegal fishing practices. The community's economic well-being and cultural practices are intricately tied to the utilization of coastal resources.

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