Research Article

Combatting Illegal Fishing as a Top Priority in Developing Sustainable Blue Economy Management

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Abstract

Illegal fishing poses significant challenges to sustainable blue economy management by depleting marine resources, damaging ecosystems, and threatening livelihoods. This article highlights the profound economic, social, and environmental impacts of illegal, unreported, and unregulated (IUU) fishing, including revenue loss, job displacement, and biodiversity degradation. Efforts to combat illegal fishing require a multifaceted approach involving advanced technologies, such as Vessel Monitoring Systems (VMS), international instruments, and national laws to regulate fishing activities and enhance enforcement. Port State Measures (PSM) are vital in denying illegal vessels access to ports, while Regional Fisheries Management Organizations (RFMOs) play a key role in fostering cross-border cooperation to conserve marine resources. Additionally, illegal fishing, often linked to transnational crimes like human trafficking and money laundering, requires robust international collaboration. The research employs a library-based qualitative approach to analyze the interplay of legal frameworks, technology, and policy in addressing this issue. By integrating these strategies, nations can mitigate illegal fishing, protect marine biodiversity, and ensure economic resilience for coastal communities. This study underscores the importance of global commitment to sustainable fisheries as a cornerstone for achieving blue economy goals, securing food supply, and preserving ecosystems for future generations.

Keywords: Blue Economy; Illegal Fishing; IUU Fishing; Marine Resources; Sustainability; Transnational Crime

Introduction

The ocean, covering 72% of Earth's surface and over 95% of the biosphere, is vital for life by producing oxygen, absorbing CO2, regulating climate, and providing food, jobs, and trade routes. During the "Rio+20" Conference, coastal nations advocated for the "blue economy" over the "green economy," emphasizing the ocean's role in sustainable, low-carbon, and inclusive development. (Plan Bleu, 2020). The link between the blue economy and maritime security has been widely acknowledged, in terms of preventing harm to the environment, creating secure conditions for trade and investments in coastal economies, and the need for maritime law enforcement in this regard. It has been regularly 2 flagged as a major concern, including in the UN Sustainable Development Goal process for the oceans. (Bueger, 2023)

The concept of “Oceans Economy” or “Blue Economy” is recent and originated from the United Nations Conference on Sustainable Development held in Rio de Janeiro in 2012.4 At the heart of the concept is a separation of socio-economic development from environmental degradation, which is how it has traditionally been seen as a global status quo (Smith-Godfrey, 2016). The blue economy represents a sustainable marine economy that balances economic and social benefits with environmental preservation. It emphasizes the responsible use of marine resources to drive economic growth and improve livelihoods. This approach integrates maritime spatial planning, stakeholder consultations, natural capital assessments, enhanced data use, and 'blue financing' to manage cross-sectoral impacts. Ultimately, the blue economy aims to ensure the sustainability of marine ecosystems while fostering growth in maritime and fisheries sectors (Nasution, 2022).

The blue economy is closely linked to efforts to combat illegal fishing, as this practice depletes marine resources, disrupts ecosystems, and threatens the sustainability of legal fishers' livelihoods. Through approaches such as maritime spatial planning, stakeholder collaboration, and the use of monitoring technologies, the blue economy promotes more responsible marine resource management. Additionally, it is essential to integrate measures that ensure the restoration of marine ecosystems so that their economic benefits can be sustainably enjoyed by coastal communities.

The role of fisheries holds significant importance, especially in many of the world's poorest communities, where fish serves as a crucial source of protein, and this sector functions as a cornerstone of social safety nets. Fish consumption is increasing by 3.2 percent annually, surpassing the global population growth of 1.6 percent. Urbanization contributes to the rise in fish consumption, particularly in developing Asian economies. Asia's share of global fish consumption rose from 67 percent in 2008 to 70 percent in 2013. Many markets in Southeast Asia, including Indonesia and the Philippines, prefer fish over other animal protein types. The total global consumption of fishery products is estimated to increase by 20 percent (30 million tons) by 2030, with a significant portion of the increase in demand coming from developing countries in Latin America, Africa, Oceania, and Asia (Widjaja et al., 2020). The concept of the blue economy emphasizes the importance of sustainable management of marine resources to support economic growth and the welfare of coastal communities. In this context, reducing IUU (Illegal, Unreported, and Unregulated) fishing activities becomes a top priority for achieving sustainable development goals (SDGs), particularly SDG 14, which focuses on the preservation of marine ecosystems (Aliyah et al., 2024).

The blue economy focuses on sustainably using marine and coastal resources, balancing economic growth with environmental protection. It includes sectors like fisheries, renewable energy, tourism, and waste management, aiming to harness marine potential while preserving ecosystems. According to the World Bank, it involves using ocean resources responsibly to support economic growth and community well-being (World Bank & United Nations Department of Economic and Social Affairs, 2017). It encourages local participation in resource management and promotes technological innovation for sustainable solutions. Ultimately, the blue economy seeks to foster socio-economic prosperity, ensure healthy marine environments, and enhance resilience for current and future generations.

The blue economy aims for economic growth, ecological sustainability, and social well-being. However, illegal fishing presents a significant challenge, threatening these goals. As marine resources become increasingly vital for economic growth, combating illegal fishing has become essential. Unregulated and unlawful fishing practices not only disrupt marine ecosystems but also jeopardize the long-term sustainability of fisheries, making it a major obstacle to developing sustainable blue economic management.

The meaning of illegal fishing itself is a form of extraction carried out by parties that have not obtained permission from the country. This is considered undesirable as it violates regulations established within a country. Besides the theft of fish, illegal fishing includes several points, such as exceeding the specified quantity limits in regulations, causing damage to the water area after completing fish captures by a vessel, and other issues that will be elaborated later. Considering the issues raised, we can conclude that this problem not only disrupts at a national level but also disturbs international peace. (Harliza & Michael, 2020).

This illegal activity is not merely a problem within one country but also a transnational issue. Therefore, addressing this problem requires cross-border efforts, particularly through bilateral cooperation (Muhammad, 2012). The blue economy promotes sustainable use of marine resources, balancing growth with environmental protection. It covers sectors like fisheries, renewable energy, tourism, and waste management, aiming to support economic growth and community well-being while preserving ecosystems.

In this article, we will further explain the impact of illegal fishing on economic, social and environmental aspects. Then, the utilization of increasingly advanced technology and legal or policy measures will be explored as efforts to tackle illegal fishing. This research aims to identify the economic, social, and environmental impacts of illegal fishing, evaluate handling strategies such as VMS technology and legal frameworks, and support the sustainability of marine ecosystems through international collaboration, while also linking illegal fishing to transnational crime to promote more comprehensive solutions.

Literature Review

Illegal Fishing

Literally, "Illegal Fishing" consists of 2 (two) words: "illegal" and "fishing." "Illegal" can be interpreted as "in violation, clandestine, illicit, and entering illegally," and "fishing" involves searching for fish in lakes, fishing, and capturing fish by boats, fishing rods, or nets (Palupi, 2022). In other dictionaries, "Illegal" is defined as "not valid, prohibited, or contrary to the law," and "Fish" means fish or fish meat, while "Fishing" is the act of catching fish as a livelihood and the place for catching fish (Putri, 2017). Therefore, the understanding of "Illegal Fishing" can be interpreted as the activity of fishing conducted by irresponsible fishermen and contrary to the ethical standards of fishing or the violation of laws related to fisheries and marine activities, such as the excessive and legally prohibited use of fishing gear that can harm the marine ecosystem. (Maryani & Nasution, 2019).

In international law, the definition of illegal fishing is found in the IPOA (International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing) issued by FAO (Food and Agriculture Organization of the United Nations, 2001). which is:
Illegal fishing refers to activities:

1. Conducted by national or foreign vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations;
2. Conducted by vessels flying the flag of States that are parties to a relevant regional fisheries management organization but operate in contravention of the conservation and management measures adopted by that organization and by which the States are bound, or relevant provisions of the applicable international law; or
3. In violation of national laws or international obligations, including those undertaken by cooperating States to a relevant regional fisheries management organization.

"Illegal fishing" refers to a range of activities. It encompasses all fishing operations conducted by a specific country or foreign vessel in waters not under its jurisdiction without the necessary authorization from the relevant country. Additionally, it includes fishing activities that breach the laws and regulations of a country. This designation extends to fishing carried out by vessels flying the flag of a country that is a member of a regional fisheries management organization, as well as activities that violate the legislation of a country or international regulations (Putri, 2017).

“Illegal fishing” are those most usually associated with “pirate” fishing fishing without a licence but also cover all other elements of noncompliance with national and international laws for instance fishing in closed areas or seasons, with prohibited gears, or catching over prescribed quotas. In all these cases noncompliance may result in the quantity of catch being known, but it may also not be known (Macfadyen et al., 2016). Activities classified under the category of illegal fishing include:

1. Use of fish bombs/explosive materials.
2. Use of chemicals/fish stupefying substances.
3. Fish capture by violating fishing grounds.
4. Fish capture without possessing or falsifying permits.
5. Fish capture using prohibited fishing gear (Putri, 2017)

In international law, the regulation and term "illegal fishing" are broadly defined. The term IUU fishing, standing for illegal, unreported, unregulated fishing, is an alternate expression for illegal fishing. This designation covers not only fishing activities carried out in violation of the law but also includes the capture of fish that goes unreported or lacks proper authorization from the relevant country (Food and Agriculture Organization of the United Nations, 2016). Additionally, it includes fish capture activities that do not comply with the established regulations.

International Maritime Law

International Maritime Law is part of International Law. Maritime Law initially emerged due to issues related to sea ownership. The question of ownership of the sea is linked to the potential wealth it holds, such as fish, minerals, and other resources. Besides the potential wealth, the issue of sea ownership is also connected to security aspects, namely the control of maritime territories similar to that of land. International Maritime Law aims to regulate the competition among countries in exploring and exploiting the wealth of the sea while preserving the sustainability and conservation of the sea itself.

International Maritime Law is a collection of rules that govern the territories/parts of the sea between nations/states. These rules are established by the relevant authorities, and violations of them carry sanctions. (Palupi, 2022). In International Maritime Law, there are two opinions regarding sea ownership: Res Communis and Res Nullius. The Res Communis perspective considers the sea as common property, belonging to the global community, and cannot be claimed or owned by individual countries. On the other hand, the Res Nullius viewpoint sees the sea as belonging to no one, allowing each country to claim and own it. (Pratiwi, 2017).

The United Nations Convention on the Law of the Sea (UNCLOS), also referred to as the Law of the Sea Convention or the Law of the Sea Treaty, is an international agreement that emerged from the UN Conference on the Law of the Sea conducted from 1973 to 1982. Adopted officially during the third UN Conference on the Law of the Sea in 1982, UNCLOS delineates the rights and obligations of nations globally concerning the utilization of the world's oceans. It establishes guidelines for various aspects, encompassing business, environmental considerations, and the governance of marine resources. This convention replaced the International Treaty on the Law of the Sea, also known as the 1958 Geneva Convention (Pratiwi, 2017).

Theory of Regional Cooperation

According to the opinions of K.J. Holsti and Hans J. Morgenthau, as referenced in (Ekawahjoerihadi, 2019), regional cooperation refers to an area defined as a group of countries that share geographical proximity and societal structure due to being located in a specific region. With the need to meet national interests, particularly in terms of resources, interdependence becomes an inseparable tendency among countries in a given region. From this arises a collective desire within a region to address issues that could disrupt stability in the area

There are several factors that serve as motives for the formation of regional cooperation:

1. Building a sense of security among neighboring countries, both economically and politically.
2. Managing trade frictions.
3. Enhancing capacity for development.
4. A stepping stone for multilateral liberalization.
5. Policies to ensure trade diplomacy (Ekawahjoerihadi, 2019).

In this context, the factors that serve as motives for cooperation are to build a sense of security among neighboring countries, both economically and politically. This cooperation is usually carried out in the field of defense, but it can also extend to other areas such as law, culture, economy, and more. Cooperation can take place in various contexts, with many forms of collaborative relationships and interactions occurring directly between two or more governments that share interests or face similar issues simultaneously.

Methods

This research is a type of literature review (library research). Library research involves collecting information and data using various materials available in the library, such as reference books, similar previous research, articles, notes, and various journals related to the problem to be addressed (Sari & Asmendri, 2020)Additionally, this study employs a qualitative approach because the data sources and results of library research involve descriptive words (Abubakar, 2021). The data used consist of secondary sources, which contain the results of research or writings that do not directly conduct research or discover theories (Rahmadi, 2011). The analysis technique used is Content Analysis. Content Analysis is a methodological approach to analyze the content of text, whether written or spoken. The main goal of this technique is to identify and understand specific patterns or themes that emerge in the text, allowing researchers to gain a deeper understanding of the material under investigation.

Result and Analysis

The Impact Caused by Illegal Fishing

Economic Impact

Illegal fishing has profound implications for the blue economy, which emphasizes the sustainable use of ocean resources to promote economic growth, job creation, and environmental health. The economic repercussions of illegal, unreported, and unregulated (IUU) fishing are extensive, affecting not only the immediate income from the sale of illegally caught fish but also the broader economic ecosystem surrounding the fishing industry.
Illegal fishing has widespread impacts on various economic aspects. This includes the loss of income from the direct sale of illegally caught fish, as well as revenue losses from post-harvest activities such as transportation, processing, and packaging related to the captured yields. Moreover, there are income losses from exports and access costs that do not accurately reflect the actual amount of the catch. The decline and potential loss of marine resources, which form the foundation for the local fishing industry, contribute to a significant contraction in the industry and the potential for smaller long-term harvests. This not only affects the local industry but also results in the loss of wealth for the country as a whole (Group, 2008).

Illegal fishing also directly impacts the economies of developing countries that together comprise approximately 79% of all the countries in the world. According to some estimates, the trade in IUU fishing deprives developing countries of $9 billion a year, of which $1 billion is lost by African countries (Petrossian, 2014). A study conducted by the Marine Resource Assessment Group (MRAG, 2005) estimated that, as a result of IUU fishing, the total loss from Guinea, Liberia, Mozambique, Kenya, Seychelles, Sierra Leone, Angola, Namibia, Somalia and Papua New Guinea amounted to $372 million, or 19% of the total value of catch. Similarly, in the Asia Pacific region, IUU catches account for about $5.8 billion a year, with the total loss of between 3.5 and 8.1 million tons, or about eight to 16% of the total reported catch per year (Palma et al., 2010). Indonesia alone, which is one of the most important fishing countries in the world, loses about $4 billion a year in profit due to illegal fishing, while the Philippines' economic loss is estimated at about $894 million a year (Palma et al., 2010).

The environmental consequences of IUU fishing further complicate the economic landscape. Overfishing depletes marine resources, leading to diminished fish populations and the potential collapse of local fisheries. This depletion not only threatens food security but also impacts related sectors such as tourism, particularly in marine protected areas that rely on healthy ecosystems to attract visitors. The loss of biodiversity and the degradation of marine habitats can deter tourists, resulting in decreased income for communities dependent on tourism revenue.

In conclusion, combatting illegal fishing is not merely an environmental issue; it is a critical economic imperative for developing countries striving to build a sustainable blue economy. By addressing IUU fishing, stakeholders can protect marine resources, enhance economic resilience, and promote sustainable livelihoods, ultimately contributing to the long-term health of both the ocean and the communities that depend on it.

Social Impact

Illegal fishing has broad-ranging impacts, including the loss of job opportunities associated with fishing and post-harvest activities. Furthermore, there is the potential for social dislocation due to excessive exploitation of key stocks that are vital to coastal communities. Nutritional consequences can result from the excessive exploitation of stocks essential for the subsistence of coastal communities. The safety of individuals engaged in illegal fishing operations is also a significant concern. Furthermore, a reduction in overall employment opportunities may occur as fisheries resources continue to decline (Group, 2008).

IUU fishing often leads to unsustainable impacts on target species and surrounding ecosystems. The most evident effects include overfishing, which depletes target fish stocks due to uncontrolled activities. Additionally, the use of prohibited gear and fishing in protected areas damages vulnerable habitats, while the incidental capture of protected species—such as turtles, sharks, albatrosses, and marine mammals—further exacerbates the problem. The discarding of non-target and low-grade fish also contributes to reduced overall productivity, biodiversity, and ecosystem resilience. Consequently, legal fishers face income losses, and coastal states miss out on potential fisheries revenue. The core issue is that illegal operators lack incentives to adhere to regulations designed to conserve fish stocks and protect the marine environment (MRAG, 2009).

Illegal, unreported, and unregulated (IUU) fishing poses a significant threat to the principles of the blue economy, which aims to promote sustainable use of ocean resources for economic growth and community well-being. The overexploitation of fish stocks due to IUU activities not only depletes vital marine resources but also leads to job losses in fishing and post-harvest sectors, threatening the livelihoods of coastal communities that depend on these resources for sustenance and income. Additionally, the environmental degradation caused by illegal fishing practices undermines ecosystem resilience and biodiversity, further jeopardizing food security and economic stability. As a result, addressing IUU fishing is crucial for fostering sustainable livelihoods, enhancing community nutrition, and ensuring the long-term health of marine ecosystems, all of which are foundational to achieving a thriving blue economy.

Enviromental Impact

The fisheries sector is crucial for jobs and food security for billions, but it also has significant negative environmental impacts. The Food and Agriculture Organization (FAO) reports that the proportion of fishery stocks fished within biologically sustainable levels dropped from 90 percent in 1974 to 64.6 percent in 2019. Destructive fishing practices have led to declines in non-target fish stocks and increased mortality of marine mammals and seabirds, exacerbating marine ecosystem degradation. Illegal, unreported, and unregulated (IUU) fishing further amplifies these issues, accounting for about 20 percent of wild-caught ocean fish annually and undermining conservation efforts. The United Nations has called for an end to IUU fishing by 2020 under Goal 14 of the Sustainable Development Goals (SDGs). As the largest market for fisheries products, the European Union (EU) faces a high risk of importing IUU products, with inconsistencies in import controls allowing significant amounts to enter the market despite existing regulations (*Ensuring Companies Address Adverse Environmental Impacts in Their Value Chains: The Case of Illegal Fishing*, 2023).

The loss and depletion of target fish stocks, as well as broader impacts on habitats and ecosystems, occur due to several factors. One of them is overfishing, which results in the depletion of fish stocks. The use of illegal fishing methods, such as dynamite fishing or drift nets, also contributes to the harm. There are fishing methods applied that have a significant impact on the seabed habitat. The lack of compliance with management measures, including bycatch mitigation measures, undertaken by illegal fishermen, also contributes to this issue. Serious impacts are also felt by protected or endangered species, exacerbating the vulnerability of certain populations and harming the overall balance of the marine ecosystem (Group, 2008).

The blue economy promotes sustainable use of marine resources, balancing growth, livelihoods, and ecosystem protection. The fisheries sector faces challenges like overfishing, destructive methods, and IUU fishing, which accounts for 20% of global wild-caught fish annually, depleting fish stocks and threatening food security. Addressing these issues requires sustainable practices, stronger regulations, and technology to monitor supply chains, ensuring biodiversity and long-term marine ecosystem health.

Efforts to Combat Illegal Fishing

VMS (Vessel Monitoring System)

The VMS technology is part of the Global Fishing Watch System (GFWS). GFWS is a consortium comprising Google Earth Outreach, Sky Truth, and Oceana, offering a visualization tool for tracking global vessel movements. It utilizes the Automatic Identification System (AIS) in conjunction with Vessel Monitoring System (VMS) technology. Google, being the world's largest technology company, provides services through Google Earth and Google Maps to visually monitor the movements of fishing vessels on a global scale. AIS serves as a safety platform for vessels to prevent collisions at sea, accurately presenting information such as the vessel's identity, location, speed, and destination. Meanwhile, VMS technology is a vessel monitoring system in the form of a transmitter that is mandatory and continuously activated on fishing vessels larger than 30 Gross Tons (Soemarmi et al., 2020).

The GFWS technology was launched on September 15, 2016, during the Our Ocean Conference in Washington DC. Indonesia was the first to adopt this technology for monitoring fishing vessels across its Fisheries Management Areas (WPP). Available to the public for free, it was made possible through collaboration between the Ministry of Maritime Affairs and Fisheries (KKP), Google, Oceana, and Sky Truth, providing access to fishing vessel data on the website www.globalfishingwatch.org (Soemarmi et al., 2020).

This technology aims to monitor the utilization and management of marine resources. The transmitters installed on each fishing vessel, using satellites, will provide transparency in the management and utilization of marine resources by every fisherman in a country as well as fishermen worldwide (Basuki & Wuryandari, 2016). The data collected from transmitters with satellites will be monitored by supervisors or operators at the Fisheries Monitoring Centre (FMC) or the VMS secretariat and supervisors at the port (Soemarmi et al., 2020). Therefore, with transparency in the management and utilization of marine resources, it is expected to reduce the number of crimes in the maritime sector, such as illegal fishing.

Port State Measure (PSM)

The 2009 Port State Measures Agreement is a significant advancement in the fight against illegal, unreported, and unregulated (IUU) fishing. While not operational yet, it calls for port states and Regional Fisheries Management Organizations (RFMOs) to implement its provisions. This globally binding agreement represents a shift from flag states' control to a more active role for port states in combating IUU fishing. It addresses issues like open registries, where countries sell flags for economic gains, and the ineffective regulation of vessels by flag states. The agreement reflects a growing international shift toward stronger port state control in managing IUU fishing (Witbooi, 2014).

In an effort to address illegal fishing, countries are expected to implement control measures in their ports against fishing vessels in accordance with international law. These measures, ideally implemented fairly, transparently, and non-discriminatively, aim to prevent, deter, and eliminate the practice of illegal fishing. This includes granting port entry permits for purposes such as refueling, provision of supplies, transshipment, and loading and unloading. Additionally, vessels should be granted port access in emergency situations or to provide assistance. Before granting port access permits, countries must ensure that fishing vessels and vessels involved in related activities meet permit requirements and that the port has the capacity to conduct inspections (Food and Agriculture Organization of the United Nations, 2001).

Port states should inspect fishing vessels and report key information—such as vessel identification, crew qualifications, fishing gear, and catch results—to the flag state and relevant fisheries management organizations. This information must be kept confidential per national laws. Countries must also develop and publish strategies for port control, including training, technical support, and guidelines. International cooperation is essential for effective port control and addressing violations, while regional measures should target vessels not cooperating with fisheries management organizations. These efforts aim to combat illegal fishing and support fisheries conservation (Food and Agriculture Organization of the United Nations, 2001).

The 2009 Agreement on Port State Measures allows port states to deny access at three stages: before entering, upon arrival, and after inspection. Before entry, port states can refuse foreign vessels suspected of engaging in IUU fishing, based on credible evidence and information the vessel provides when requesting entry. Effective identification of IUU vessels requires quick communication with other countries and Regional Fisheries Management Organizations (RFMOs) to verify or raise concerns about a vessel’s activities. While many RFMOs maintain lists of suspected IUU vessels, these lists often lack updates, essential information, or accessibility across organizations, which hinders their effectiveness (Witbooi, 2014).

If a port state suspects a foreign vessel of illegal fishing but lacks sufficient evidence before its arrival, the port state can still allow the vessel entry solely for inspection. If violations are detected, such as missing fishing permits or the flag state failing to verify the legality of the catch, the port state must deny the vessel access to port services like unloading, transshipment, or fish processing. After the denial, the port state must promptly notify the flag state, coastal state, Regional Fisheries Management Organizations (RFMOs), and international bodies to enable coordinated, real-time action. The aim is to prevent other nearby ports from granting access to the vessel and to monitor its movements, ensuring that illicit catches do not enter the market (Witbooi, 2014).

In the final stage, the port state can deny a foreign vessel access after inspection. While the agreement doesn't specify the inspection level, parties must inspect enough vessels annually to meet the agreement's goals. Priority should be given to vessels previously denied entry, under inspection requests from other parties or RFMOs, or suspected of illegal fishing. If violations are found, the port state must deny access to port services like loading, unloading, transshipment, and maintenance. The port state must also promptly report the inspection results to the flag state, coastal state, RFMOs, and international bodies (Witbooi, 2014).

It is important to note that port state measures, while effective when used in conjunction with other tools, will only succeed if there is a high standardization of measures across various ports. A lack of uniformity in port state controls may lead to the emergence of "ports of convenience," where illicit vessels choose to visit ports with the least stringent control standards. Hence, it is imperative for Regional Fisheries Management Organizations (RFMOs) to play a pivotal role in promoting increased harmonization of their port state measures in accordance with the Agreement.

Implementing International Instruments and Combating Illegal Fishing Through National Laws

Nations are obligated under international law, including agreements like LOSC, UNFSA, the Compliance Agreement, and PSMA, to promote sustainable fisheries. These obligations are typically incorporated into national laws and policies. While non-binding instruments do not compel nations to adopt them, they provide valuable guidance and practical measures to support the enforcement of binding agreements. These instruments are particularly useful in interpreting and implementing international treaties at the national level. As noted by Edeson, many voluntary instruments, such as IPOAs and the Code of Conduct, would not have been as successful if not for their non-binding nature. Most participants in the fisheries sector recognize the role of these soft law instruments. They assist countries in integrating provisions into national policies and stimulate action, as seen in the Voluntary Guidelines for Flag State Performance, which have significant potential to combat illegal fishing by encouraging effective flag state responsibilities. (Kuemlangan et al., 2023).

National fisheries laws are crucial for translating international commitments into enforceable legal mandates for individuals and groups. They help convert voluntary measures from non-binding instruments into binding national laws. These laws oversee fisheries, regulate fishing activities, and define the rights and obligations of stakeholders for sustainable management. Regarding illegal fishing, national laws establish compliance and enforcement mechanisms. Member states of regional organizations, like the European Union, may also have specific legislation to address illegal fishing in line with regional policies (Kuemlangan et al., 2023).

Illegal fishing is primarily caused by weak Monitoring, Control, and Surveillance (MCS) systems and insufficient enforcement of national fisheries laws, undermining effective fisheries management. MCS is crucial for ensuring compliance and promoting sustainable resource use. National fisheries laws typically define the authorities, roles, and responsibilities of management bodies, regulate fishing activities, and outline enforcement powers, including appointing observers and enforcement officers, using tools like vessel monitoring systems, and safeguarding confidential information. These laws also empower authorities to detain or seize vessels involved in illegal activities and set penalties for violations. To improve enforcement, especially in developing countries, it is essential to support efforts to strengthen MCS systems and enforcement capabilities (Kuemlangan et al., 2023).

Nations are required by international law to promote sustainable fisheries by incorporating instruments like LOSC, UNFSA, and PSMA into national laws. Non-binding instruments also play a key role in guiding actions and encouraging state compliance. National fisheries laws enforce these international obligations by establishing law enforcement mechanisms. Illegal fishing is largely driven by weak Monitoring, Control, and Surveillance (MCS) systems and inadequate law enforcement, highlighting the need for strong legislation to support effective MCS and compliance.

The Role of Regional Fisheries Management Organizations (RFMO)

The challenge of achieving fisheries sustainability is intricately linked to the global fisheries crisis, for which Regional Fisheries Management Organizations (RFMOs) are considered a crucial intervention. This is stipulated by various international provisions, with UNCLOS 1982 being particularly noteworthy. The regulation of the management and utilization of fishery resources by RFMOs is outlined in Articles 61-67 of UNCLOS 1982, encompassed within Part V that addresses the Exclusive Economic Zone (EEZ). Moreover, UNCLOS 1982 mandates cooperation among nations in the conservation and management of biological resources, as articulated in Article 118, which falls under Part VII focusing on the high seas (United Nations Convention on the Law of the Sea, 1998).

As stipulated by the United Nations Convention on the Law of the Sea (UNCLOS), Regional Fisheries Management Organizations (RFMOs) hold the status of an international organization. An international organization is an intergovernmental entity acknowledged as a subject of international law with the capability to engage in international agreements. When examining an international organization, three crucial aspects need to be considered: the philosophical aspect, which involves historical values and core themes; the administrative aspect, which pertains to the level of personality and capacity; and the legal aspect, which emphasizes constitutional and procedural issues, including authority and limitations, both on the organization itself and its members (Indriyani, 2015).

An RFMO is an international organization working in the realm of fisheries, comprising coastal states possessing fishery resources that require conservation efforts. The members of an RFMO include countries and organizations with vested interests in fishery resources. Typically, membership is contractual, with member countries abiding by the established legal framework if issues or disputes arise in the fisheries sector within their respective territories. However, member countries of an RFMO also have obligations that they are required to fulfill for the organization. There are at least 8 (eight) RFMOs worldwide, including the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), the General Fisheries Commission for the Mediterranean (GFCM), the North East Atlantic Fisheries Commission (NEAFC), the North Pacific Fisheries Commission (NPFC), the Northwest Atlantic Fisheries Organization (NAFO), the South East Atlantic Fisheries Organization (SEAFO), the South Indian Ocean Fisheries Agreement (SIOFA), and the South Pacific Regional Fisheries Management Organization (SPRFMO) (Yuliantiningsih, 2019).

The development of RFMOs is based on the migratory nature of fish that cross the boundaries of different countries. The increasing awareness that fishing activities in one country can affect the status of fishery resources and the performance of fishing fleets in other countries exploiting the same resources has been a key factor in the establishment of cooperation within RFMOs.

RFMOs play a crucial role in the global fisheries system, particularly in the conservation and management of fisheries. In their operations, RFMOs employ different approaches, including regional approaches where management and conservation are carried out in specific regions, or species-based approaches. RFMOs also consider trade sanctions as a means to enforce fisheries management and conservation measures. Trade sanctions may include measures such as refusal of landings and transshipments, denial of port facilities, discrimination against vessels from specific countries, and import bans (Indriyani, 2015).

The Urgency of Illegal Fishing as a Transnational Crime

Wayan Parthiana argues in (Banjarani, 2020) that transnational crimes have a nature that recognizes no boundaries of national territory. These crimes surpass the borders of national territories in terms of the location of occurrence, the consequences they generate, and the goals of the crimes themselves (Agustina, 2006). "Transnational" is a specific term that refers to individuals committing a crime, allowing them to be held accountable for their actions based on both international and national laws of a country. The characteristics of "transnational crimes" are regulated in the Convention Against Transnational Organized Crimes, also known as the Palermo Convention, held in 2000. In Article 3 of the UNTOC Convention, it asserts that the elements of transnational crimes are as follows (United Nations, 2004):
1. Carried out in more than one territorial jurisdiction of a country;
2. The crime is controlled, prepared, directed, and planned in one specific country, but the execution of the crime takes place in a different country;
3. The crime is carried out within one country but involves individuals or organized groups committing the crime in another country; or
4. The crime is committed in one country, but the consequences of the crime affect another country.

As outlined in the United Nations Convention Against Transnational Organized Crime (UNTOC), transnational crimes encompass 18 distinct forms of criminal activities. These include human trafficking, trafficking in human organs, trafficking in persons and weapons, illicit drug trafficking, money laundering, fraudulent bankruptcy, intellectual property theft, corruption, terrorism, bribery of party officials, aircraft hijacking, theft of art and cultural objects, piracy of ships, bribery of public officials, infiltration of legal businesses, insurance fraud, cybercrime, and environmental crime.

According to a report by Global Financial Integrity 2017, transnational crime is viewed as a profit-driven enterprise. The estimated annual revenue generated from transnational crime is estimated to be between US$1.6 trillion and $2.2 trillion. This income not only serves the personal interests of the perpetrators but also finances various other forms of transnational crime. Therefore, transnational crime should not be underestimated, as it has the potential to endanger a country's national economy, pose risks to the health and well-being of the population, and even threaten environmental damage (May, 2017).

The international community has begun to recognize the dangers of illegal fishing practices, addressing it as a new global issue by categorizing illegal fishing as a new form of transnational crime in the 2000s. This is evident in the establishment of the definition of illegal fishing itself, formulated by the United Nations (UN), describing it as a legal concept that is unclear and refers to a series of illegal activities in the fisheries sector. Illegal fishing is often transnational and organized, encompassing illegal trading, document fraud, drug trafficking, and money laundering (de Coning, 2016).

Therefore, it can be seen that the elements of transnational crime in the forms of illegal fishing and fishing crime necessitate international cooperation to address them. Until now, there has been no international cooperation that Indonesia can utilize to eradicate illegal fishing and fishing crime as a crime that requires international collaboration. International law has not designated illegal fishing as a crime with transnational organized crime characteristics. Similarly, there is no coordination in the prevention and eradication of illegal fishing with local governments. To date, there has been no coordination between the central government and local governments in establishing a mechanism and efforts for the prevention and eradication of illegal fishing. The involvement of the central government, local governments, and the community will significantly determine the effectiveness of legal aspects, including those related to the prevention and eradication of illegal fishing (Banjarani, 2020).

International cooperation among countries is needed to designate illegal fishing as a transnational crime because in illegal fishing, there is not only a singular crime but also interconnected crimes related to fishing crimes (fishing crime) such as human trafficking, money laundering, forced labor, and crimes in the oil and gas sector. This certainly requires a different conceptual approach than the current concept (Banjarani, 2020). The importance of identifying these cross-border crimes is not only due to the increasing prevalence of illegal fishing cases involving legal aspects from other countries, thus requiring proper law enforcement. This is because, in law enforcement, the qualification of the appropriate type of crime is necessary to avoid errors in categorizing the type of crime. If a mistake occurs, it will impact the misplacement of legal principles themselves as the goal is to create justice. If there is an error in the qualification of the crime, law enforcement will deviate from its purpose. As is known, the goal of formal law enforcement is to achieve peace in society.
Hence, there is an expectation that the government of each nation will persist in making endeavors to foster collaboration between countries as a preventive measure against illegal fishing. It would be unfortunate if the marine resources of a country were exploited by external entities rather than benefiting its own citizens.

Conclusion

Illegal fishing, which includes illegal, unreported, and unregulated (IUU) fishing, has serious impacts on the economy, society, and the environment. Economic impacts include revenue losses from the sale of illegal fish and the contraction of the local fishing industry. Social impacts include the loss of job opportunities, social displacement, and nutritional impacts on coastal communities. Environmental impacts encompass the depletion of fish stocks, harm to marine habitats and ecosystems, and damage to protected or endangered species.

Efforts to combat illegal fishing involve various strategies. The Vessel Monitoring System utilizes technology to globally monitor the movements of ships, enabling transparency in marine resource management. Port State Measures (PSM) regulate controls in ports to prevent illegal vessels from engaging in activities such as loading and unloading. The implementation of international instruments and strengthening national laws is a crucial step in enforcing regulations and imposing penalties on illegal fishing perpetrators.

The role of Regional Fisheries Management Organizations (RFMOs) is crucial in global fisheries conservation and management efforts. RFMOs work across national borders to address fish migration and ensure the preservation of fishery resources. The existence of RFMOs provides a framework for cooperation among coastal countries to regulate fishing activities in their respective regions.

Illegal fishing needs to be treated as a transnational crime. As a crime that knows no borders, addressing it requires international cooperation through agreements and coordination among countries. The sustainability of efforts to combat illegal fishing requires synergy between technological monitoring, port regulations, the implementation of international instruments, and cross-border collaboration.

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