



Addressing Illegal, Unreported and Unregulated Fishing of Vietnamese Fishing Vessels in Foreign Waters

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Abstract

Vietnamese illegal fishing in foreign waters is a prominent issue that has led to a yellow card warning from the European Commission (EC) on 23 October 2017. Although Vietnam has made considerable efforts to halt illegal, unreported and unregulated (IUU) fishing and clear this yellow card, the results were insufficient to remove the yellow card as of the beginning of 2022. The present study analyses why addressing this issue has been so challenging. Specifically, the following questions are addressed: i) how do local fisheries authorities implement central regulation policies against IUU fishing and ii) what are the bottlenecks in legal enforcement for both fisheries agencies and fishers? The secondary data analysis and the findings from interviews with government officials and fishers are presented. The authorities have implemented various approaches to prevent illegal fishing in foreign waters. These include an improved policy framework, law enforcement, fishing vessel management and supervision with vessel monitoring system (VMS), and increased responsibilities attached to the local fisheries authorities. Despite the several measures taken, illegal fishing in foreign waters continues. There are several reasons for the failure to control illegal fishing, including exhausted local marine resources, too many fishing boats operating in the same areas, unclear responsibilities of stakeholders, and lack of coordination among implementing authorities. Several recommendations are suggested for addressing the problem of IUU fishing of Vietnamese vessels in foreign waters to meet the criteria set by the EC to remove the yellow card and ensure that the results are long-lasting and substantive.

Keywords: Vietnamese fishing vessels, foreign waters, illegal fishing, yellow card

Introduction

Vietnamese fisheries are essential to the nation's socioeconomics, especially in the country's 28 coastal provinces (Pomeroy et al., 2009). The fisheries sector provides 500,000 direct jobs for fishers, about 4 million indirect labour jobs related to fisheries activities, and total fish exports of ~USD8-9 billion annually (Office of the Party Central Committee, 2020). In the past two decades, over 100,000 fishing vessels using a variety of fishing gear have consistently been deployed. However, only ~30 % of these vessels were eligible for offshore fishing in 2020 (Office of the Party Central Committee, 2020). Vietnam's seafood catch has grown continuously, with an average increase of

9.07 % per year, of which the marine landing is 6.42 % annually (VASEP, 2018; Phuong and Pomeroy, 2022).

Illegal, unreported, and unregulated (IUU) fishing is a widely used term worldwide. It refers to fishing-related activities conducted contravening national or international laws and regulations. In general, IUU fishing encompasses three different types of fishing activities: i) illegal fishing conducted in contravention of national or international laws and regulations; ii) unreported fishing operations or misreported to the regional fisheries management organisation (RFMO) or relevant national authority; and iii) unregulated fishing in the water zone of a relevant RFMO or nation conducted by fishing boats without nationality, those

flying the flag of a state not a party to the organisation, or a fishing entity in a manner that is not consistent with or contravenes the measures of the organisation (FAO, 2001; Phuong and Pomeroy, 2022). On a scale of 1 to 5 (1 being the best and 5 the worst), an index has been used to aggregate transparency and allow countries to assess their vulnerabilities and responses to IUU fishing activities (Hoang, 2021). Vietnam's score is 3.16, the fifth-worst IUU fishing score for a country or territory after China, Taiwan, Cambodia, and Russia (Hoang, 2021).

Vietnamese illegal fishing in foreign waters is a prominent issue that led to a yellow card warning from the European Commission (EC) on 23 October 2017. Under the IUU regulation, the carding process begins with a dialogue between EC and a country to assess compliance with its international fisheries obligations to combat IUU fishing. Depending on the results of this assessment and subsequent efforts by the country to undertake necessary reforms, the EC's yellow card is issued to countries which fail to prove sufficient progress in combating IUU fishing worldwide. Consequently, 27 yellow cards were handed out from 2012 to 2021 (Hoang, 2021; EJF, 2022). Vietnam has made considerable efforts to stop IUU fishing and clear this yellow card by improving policy frameworks, law enforcement, fishing vessel management, supervision, and fisheries traceability. However, the results did not remove the yellow card as of the beginning of 2022 (Tuan, 2020; Hoang, 2021; Phuong and Pomeroy, 2022). Notably, Vietnamese vessels regularly fishing illegally in foreign waters is complicated; thus, the EC could not remove the yellow card for Vietnamese fisheries. According to the Directorate of Fisheries (DoFi), from 2013 to 2016, Vietnam dealt with thousands of issues related to illegal fishing, including 726 fishing boats and 5,752 fishers captured by the authorities of other nations (DoFi, 2020a).

Although Vietnam's Prime Minister has tasked the relevant agencies, ministries, and People's Committees of the 28 coastal provinces with eliminating IUU fishing, eradicating violations of foreign sea zones by the end of 2021 was impossible (SGGP NEWS, 2021; Phuong and Pomeroy, 2022). Indeed, illegal fishing still occurs and seems to be unstoppable. However, the number of illegal fishing boats arrested by neighbouring countries, including Thailand, Malaysia, Indonesia, Brunei, the Philippines, and Cambodia (DoFi, 2020b), did decrease from 253 cases in 2019 to 92 cases in 2020 and 53 cases in 2021, suggesting progress.

The present study explores why it has been challenging to address the issue of Vietnamese vessels fishing illegally in foreign waters. It addresses the following questions: i) how do local fisheries authorities implement central regulation policies against IUU fishing, and ii) what are the legal enforcement bottlenecks for fisheries agencies and fishers? This

study uses secondary data analysis and interviews with government officials and fishers. The study provides several recommendations for addressing the problem of IUU fishing of Vietnamese vessels in foreign waters.

Materials and Methods

Ethical approval

Nha Trang University approved the interviews and surveys related to IUU fishing and research on the causes of offshore fishing vessels violating in foreign waters (17/01/2023). Studies involving human participants and all interviews were conducted after obtaining the consent of the appropriate authorities or the person interviewed.

Data collection and analyses

Several methods were used in this study to collect data and conduct analyses. First, document analysis determined how measures to solve the illegal fishing in foreign waters are proposed in fisheries legislation. In Vietnam, the central Government, specifically the Ministry of Agriculture and Rural Development (MARD), is responsible for sequentially building fisheries policies and regulations. Additionally, the ministry is accountable for surveillance and control of the legislative implementation by local fisheries agencies. All official and scientific documents were collected, including the Vietnamese fisheries law, fisheries-related decrees, circulars, official telegrams, directives, decisions, and other documents originating at central to local government levels. The MARD officials confirmed the completeness of all documents. The documents were analysed to understand the key measures and core requirements to combat and eliminate illegal fishing in foreign waters and the stakeholders' responsibilities in achieving these goals.

This method used the keywords "illegal fishing in foreign water" and "Vietnamese fishing vessels" to search all official documents published between 2010 and 2021, especially from 2017 to 2021, given that the EC yellow card was issued in 2017. The Government's website (www.chinhphu.vn; <https://vietnam.gov.vn/> in English) and DoFi's website were used for this purpose, and DoFi or provincial fisheries management officials were required to provide these documents. In addition, official government reports, academic articles, media coverage, and fisheries-related papers on implementing and evaluating illegal fishing regulations and policies were reviewed to understand how measures were performed in practice.

Second, three group discussions were performed offline or online via the Google Meet app, which was necessary due to the COVID-19 pandemic. The face-to-face discussion was held with a group of fisheries authorities and Hon Ro fishing port officials in Khanh Hoa province, and the online discussion included two

groups of fisheries authorities in Binh Dinh and Binh Thuan Provinces (Table 1). The provincial fisheries officials involved in the three group discussions are directly or closely related to managing illegal fishing activities. They requested to remain anonymous as discussions on government regulations and policies could negatively affect their jobs. Some officials were interviewed using other data collection methods, including discussions at the conference or workshop meeting, and chatting via the Zalo app and Gmail. Each group discussion included 3–6 fisheries officials and lasted 1–2 h. The group discussions aimed to investigate, among other topics, how authorities deal with illegal fishing in foreign waters and why they could not prevent such fishing. The disadvantages of implementing regulations and the information and data collected from the interviews were triangulated with that from government officials and local fishers.

Third, interviews were conducted with three central government officials at DoFi. The interviews were used to determine the advantages and disadvantages of building and implementing the policies and regulations to prevent illegal fishing in foreign waters and to understand why this issue has not yet been resolved.

Fourth, 30 interviews were conducted with fishers who did or did not violate fishing laws to understand their motives and drivers concerning illegal fishing. The following questions were addressed: who decides to fish in foreign waters, and how do they balance the risks (enforcement and capture) with the rewards (money)?

Results

Combating illegal fishing in foreign countries' waters at the national level

Nine recommendations from the EC to combat IUU fishing in Vietnam's fisheries

Five reasons related to IUU fishing activities caused the issuance of the yellow card from EC in October 2017 (Phuong and Pomeroy, 2022). Vietnam's efforts to prevent national fishing vessels from violating neighbouring waters have been inadequate and ineffective (The World Bank, 2021). In particular, four

of nine recommendations provided to help Vietnam overturn the issuance of the yellow card warning were associated with remote illegal fishing (the third, sixth, seventh, and eighth recommendations in Figure 1).

How the national authorities address illegal fishing in foreign waters in Vietnam

At the national level, nine core legislations related strictly to illegal fishing in foreign waters were issued between 2010 and 2021 (Phuong and Pomeroy, 2022; VASEP, 2022a). This subsection describes the nation's efforts to combat illegal fishing before and after the EC yellow card warning, as summarised in Figure 2.

Notably, the measures proposed to stop illegal foreign fishing were robust and resolute with three deadlines mentioned, i.e., "30 June 2018", "the end of 2020", and "the end of 2021" by Directive No. 45, Decision No. 78, and Directive No. 245, respectively. Nevertheless, these deadline targets were not met. "Third time lucky" is a familiar Vietnamese idiom meaning "When attempting to complete a task, if you have been unsuccessful three times, you should stop, think, and find another effective strategy". In contrast, to provide comfort, encourage perseverance, and remain consistent with a chosen goal, the phrase "no more than three", meaning "you will not be defeated more than three times", may apply. These idioms indicate the challenges faced when attempting to stop Vietnamese vessels from illegally fishing in foreign waters.

Combating illegal fishing in foreign countries' waters at the local level

Over the past 4 years, combating IUU fishing to remove the EC - issued a yellow card, and preventing illegal fishing in foreign waters were priority tasks and assignments issued from the top (national) government level to various lower (local) government levels. Specifically, the coastal provinces have taken several urgent measures to handle fishing vessels violating foreign waters.

First, all coastal provinces have strictly implemented various promulgated national legislations and issued hundreds of documents that specify or provided

Table 1. Methods used to obtain the information and data on various aspects of illegal, unreported and unregulated fishing used in this study.

Methods	Places/provinces					
	DoFi	Binh Dinh	Khanh Hoa	Binh Thuan	Ca Mau	Kien Giang
Group discussions		1	1		1	
Interview						
Fisheries officials	3	2	2	2	2	2
Local officials		2	2	2	2	2
Fishers		5	10	5	5	5

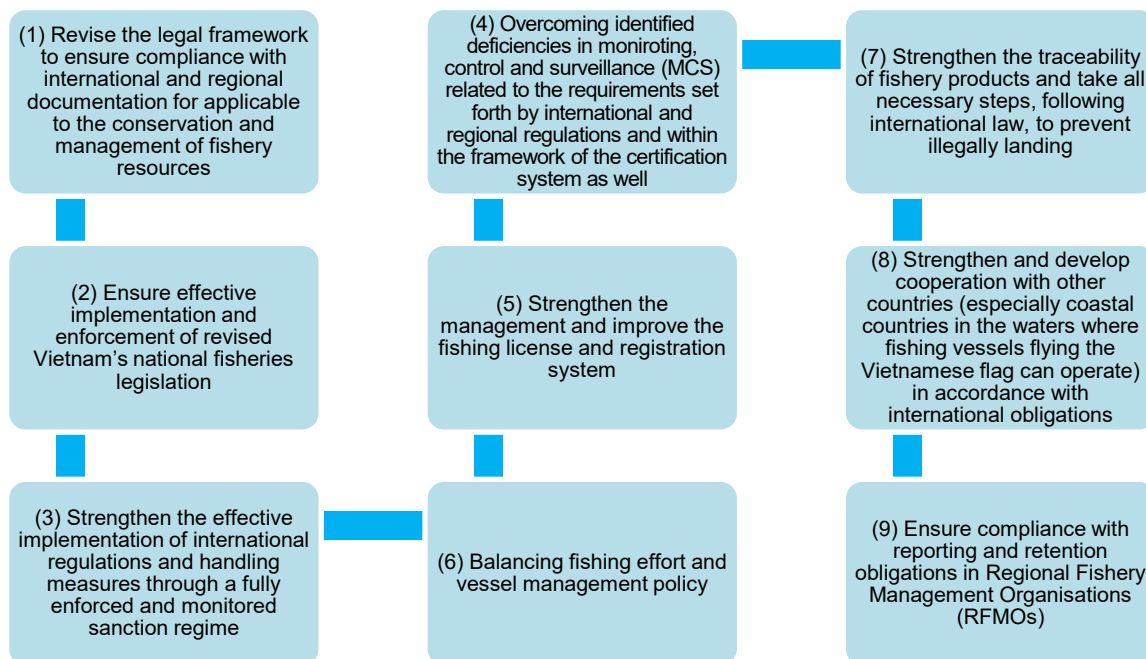


Fig. 1. Nine recommendations from the European Commission to Vietnam's fisheries-related to illegal, unreported and unregulated fishing activities.

more details on several central regulations to combat IUU fishing and ensure suitable local characteristics. For example, the People's Committee of Binh Dinh province, Vietnam's central coastal province, has established a Steering Committee, issued 68 guiding documents, including one directive, 35 decisions, and 17 directing documents, and held around 15 annual meetings to address this issue. In addition, the Department of Agriculture and Rural Development in this province also established a Steering Committee, issued 50 guiding documents, and organised 30 visits to the local community (Phuong, 2022; VASEP, 2022b). The other provinces' efforts were similar to those of Binh Dinh province.

Second, during the enforcement process, the provincial authorities have placed the issue of "fishing vessels violating foreign waters" into the Annual Emulation and Commendation Criteria (DoFi, 2020b; Phuong, 2022; VASEP, 2022b). Furthermore, illegal foreign fishing vessels have been publicised in public media and listed at the national level on a blacklist (<https://tongcucthuysan.gov.vn/iuu/doc-tin/014906/2020-09-08/danh-sach-tau-ca-khai-thac-bat-hop-phap>). Consequently, the responsibility is attached to the head of authority if its vessels violate foreign waters. Specifically, the heads of the lower local government authorities are responsible for this issue and are criticised by the higher authorities if local vessels violate foreign waters.

Third, through banners and posters placed in fishing ports and cabin vessels, the coastal provinces have promoted enhanced awareness to vessel owners and captains, i.e., i) knowledge of maritime boundaries and legal fishing grounds and ii) the consequences of

issuance of the yellow card and IUU fishing. Notably, local governments have organised for fishers to sign "commitments to NO illegal fishing in foreign waters" annually before leaving fishing ports. These agreements state that fishers will not engage in illegal fishing operations in foreign waters. They have even established Women's Unions for the wives of men fishing at sea to propagate support against IUU fishing.

In various localities, provinces have proposed and applied other measures to strengthen their ability to prevent fishing vessels from violating neighbouring waters. For example, the discussion surveys showed they are punished under the legal regulations of Decree 42. They are also cleared and blocked from receiving support for loans and fuel subsidies under policies No. 48 and No. 67 (Decision No. 48 stipulates the fuel subsidies for offshore fishing vessels; Decision No. 67 stipulates several development policies in marine fisheries), such as in Binh Dinh and Binh Thuan Provinces. Fisheries authorities have reportedly penalised violators with sanctions as high as USD43,500.

Fourth, equipping fishing vessels with VMS has positive outcomes. It is a vital measure that can control and monitor the status of vessels at sea, and the technology can quickly warn fishers close to violating neighbouring water zones. Up to 2021, 83 % of national fishing vessels were equipped with VMS (Phuong and Pomeroy, 2022). Coastal provinces have offered subsidy policies for VMS budgets and equipment to encourage fishing vessel owners to equip their vessels with VMS. Specifically, all fishing vessels required to install VMS were supported with 50% of the VMS price (about USD500) (DoFi, 2020b;

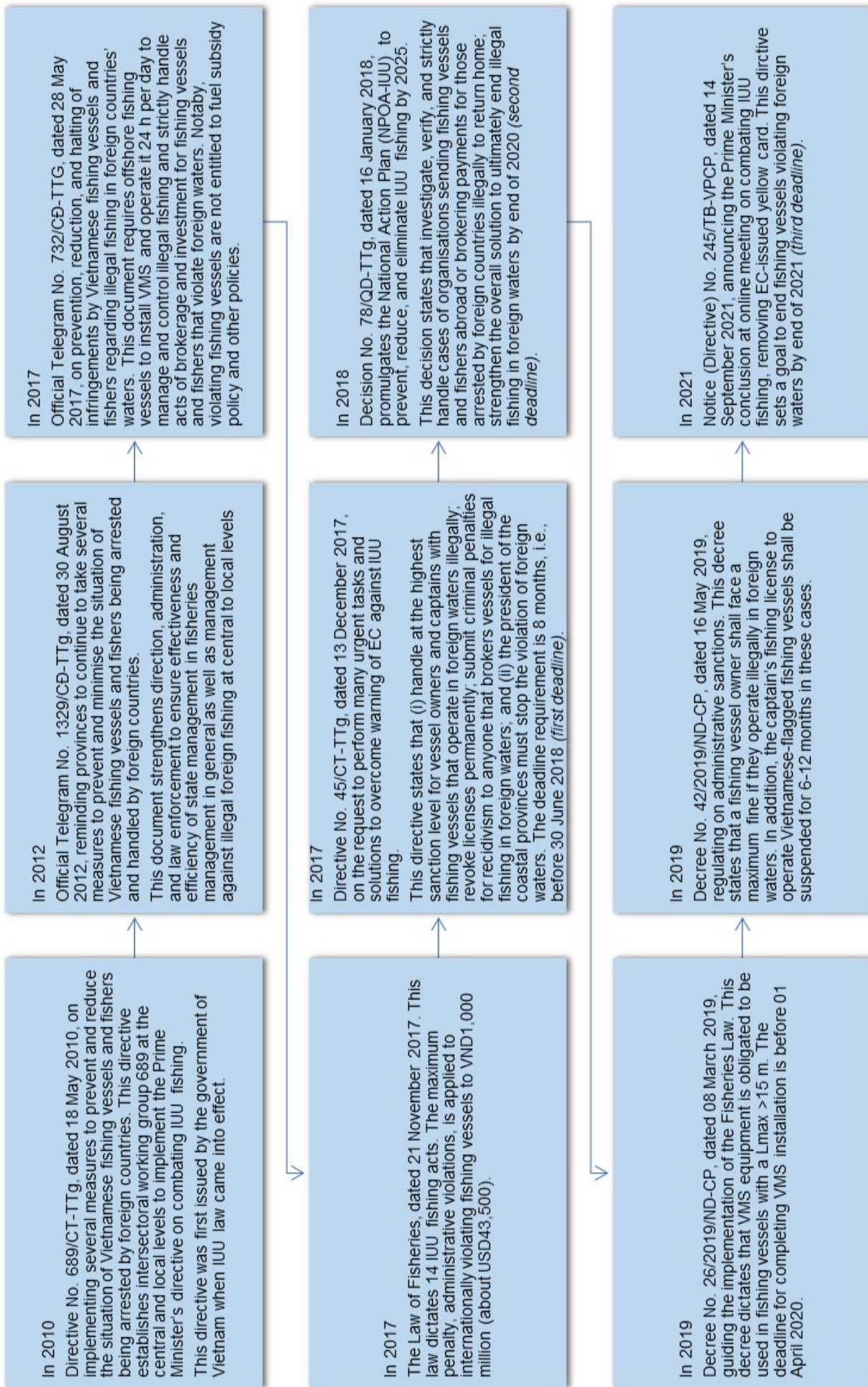


Fig. 2. Summary of the Vietnamese central government documents related to halting illegal fishing in foreign waters.

Phuong, 2022; VASEP, 2022b).

Additionally, all provincial authorities stipulated the process for receiving, delivering, and handling VMS data on fishing vessels more than 15 m long operating at sea, including handling the vessels disconnecting VMS and violating foreign water zones. The process also regulates the specific responsibilities of stakeholders to eliminate Vietnamese fishing vessels violating foreign water zones, including the province's Department of Agriculture and Rural Development, Provincial Border Guard Command, the district's People's Committee, and fishing vessel owner (DoFi, 2020b; VASEP, 2022b).

However, Vietnamese fishing vessels have continued to violate foreign waters (Ngan, 2018; Tuan, 2020; Phuong and Pomeroy, 2022). Nevertheless, the number of reported illegal foreign fishing vessels has decreased from 364 vessels in 2016 to 53 in 2021, i.e., since Vietnam's fisheries received a yellow card in 2017 (Fig. 3).

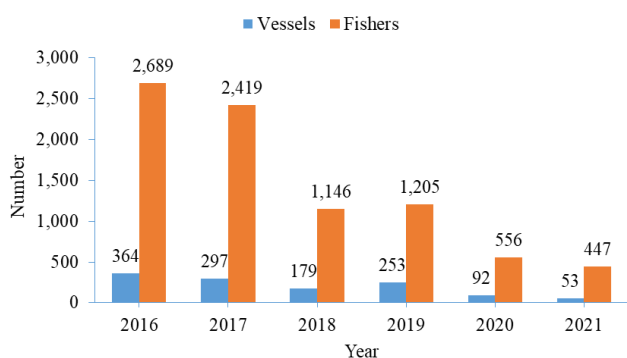


Fig. 3. Trend of Vietnamese illegal fishing in foreign waters from 2016 to 2021.

Notably, actual figures might be higher than those recorded in the official reports. In the group discussion, fisheries officials stated the following:

"They only counted the number of illegal vessels seized by neighbouring countries and detected through VMS. The national management agencies could not record vessels without VMS equipment or disconnected equipment that entered foreign waters for illegal fishing".

According to incomplete statistics, 42 and more than 64 Vietnamese illegal fishing vessels were detained by Indonesia and Malaysia authorities in 2021, respectively, including more than 670 fishers. Based on satellite monitoring, Indonesia's Maritime Justice Initiative detected at least 153 Vietnamese fishing vessels illegally fishing in Indonesia's and Malaysia's jurisdictional water zones in April and July 2021 (Tengfei and Runxi, 2021). Notably, Malaysia lost about MYR6.0 billion (USD1.4 billion) in fishing revenue in 2018 and 2019 due to poaching by illegal fishing boats.

According to Malaysian authorities, Operation Dragon, led by the Malaysian Maritime Enforcement Agency, made 445 arrests and seized MYR476.5 million (USD111.2 million). In 2021, the operation made 97 arrests and 982 crew members of various nationalities were detained, mostly Vietnamese (New Sunday Times, 2023). Indonesia sank more than 500 illegal fishing vessels until 2019. Indonesia sank 51 foreign vessels and 38 of which were from Vietnam in 2019. The Malaysian authorities also warranted urgent attention to selling diesel to foreigners and Vietnamese vessels besides illegal fishing activities (New Sunday Times, 2023).

Reasons why illegal fishing activities in foreign countries' waters continue

The discussions and in-depth interviews with fisheries managers and fishers revealed the following core explanations for why Vietnamese boats' violation of foreign waters had not ended.

Depleted marine resources and overlapping fishing grounds

The depletion of marine resources in Vietnam's waters is the main reason why fishers have to fish unlawfully in foreign waters for extended periods. Both fishers and management officials have concluded that marine resources are exhausted when too many fishing boats operate, leading to unavoidably inefficient fishing activities. Interestingly, comparing fishing vessel capacity and harvest statistics suggests a decreasing efficiency of the Vietnamese marine fisheries. The productivity (Catch per Unit of Effort - CPUE) has declined from 1.11 tonnes per Hp in 1985 to 0.36 tonne per Hp in 2008 to 0.25 tonne in 2016 (Pomeroy et al., 2009; The World Bank, 2021). In recent years, fishing in Vietnamese waters has brought low profits and even losses, which have caused some vessels to "stay ashore". Thus, limited awareness and high economic returns motivate fishers to persistently conduct illegal fishing activities in foreign waters because the negative aspects of violating foreign waters outweigh the profit earned. Typically, fishers only need to fish for two trips and are willing to trade off if arrested on the third trip. In the interview, fisheries officials stated the following:

"They accept abandoning the vessel as they are already profitable. That is a crucial reason why many fishers still intentionally violate foreign waters".

"Thailand's sea zones have abundant "coconut" sea cucumber resources. We can earn VND700-1,000 million (about USD35,000-46,000) when illegal fishing there for only 1-20 days. Contrarily, we earn only VND200-300 million if we fish within our nation's allowable fishing ground zones. Luckily, we were not arrested. If unfortunately, we were arrested, we can still come back" (a fisher who

violated Thailand's waters).

Similar opinions were expressed by general fishers and those detained while illegal fishing:

"While Vietnamese marine fisheries resources have been depleted for a long time without recovering, we must find other fishing grounds to maintain our family life. We are fishers; we cannot transfer to other jobs, and our areas have no alternatives. The fishing ground areas outside Vietnam are abundant, and we can earn more profit, even 2–3 times more, compared with our profits in the national fishing grounds. Notably, we have to loan capital from banks or private fast money lenders with high-interest rates for fishing trip expenses. As a result, we are under pressure during our fishing activities. We must be responsible for ourselves and our families first, and we cannot expect anything from supporters".

Vietnamese fishers have a "habit" of violating foreign waters (path dependence). Since ancient times, the fishers in southern provinces, such as Khanh Hoa, Ca Mau, and Kien Giang, have fished in waters overlapping those of Cambodia, Malaysia, Indonesia, and Thailand. After receiving a yellow card in 2017, Vietnam resolved to stop violating foreign waters. However, fishers are the last to stop illegal fishing because some think these areas are still their fishing grounds. For example, in 2020, three fishing vessels and 26 fishers in Khanh Hoa province were operating in overlapping waters between Vietnamese and Indonesian when the neighbouring country's authorities detained them (Lang, 2020; Viet Tuan, 2022).

Limited law enforcement and the unclear responsibilities of stakeholders

Legal enforcement from local fisheries authorities and punishment of illegal fishing in foreign waters is generally weak, even when punishing decisions are issued. However, many sanctions remain on the paper, i.e., they are not executed and are "still standing still". Indeed, the authorities and fishers almost ignored several implemented decisions. The management agencies are "powerless" in sanctioning and "loose" in enforcing their sanctioning documents because the decision-making procedure for implementing penalties is complicated and cumbersome. Although the level of punishment is high and might be a deterrent, the process and mechanism of punishment implemented are time-consuming and almost unfeasible in practice (Phuong and Pomeroy, 2022).

According to interviews with provincial fisheries officials, penalties could be too high for fishers' livelihoods. Mr. L. stated the following:

"Although the highest sanctions are USD43,500 for illegal fishing in foreign waters only, which could be an effective deterrent, this sanctioned level is

unfeasible and unrealistic in the context of Vietnam's fisheries status. Although illegal foreign fishing occurs continuously, sanctions are not enforced in practice".

An owner of an illegal fishing vessel responded as follows:

"We are illegal fishing in foreign countries' waters and must be responsible for this action. These vessels are our only valuable assets and help us earn our livelihoods, and foreign authorities arrest us, so we are willing to sign the sanction papers but cannot pay the money. We have to pay the wages of the crew, bank loan interest, etc..".

In addition, unclear responsibilities and coordination of the ministry, provincial agencies, and other stakeholders leads to limited legislation enforcement (Phuong and Pomeroy, 2022). In a group discussion, an official stated the following, with agreement from other group members:

"Although the higher authorities have assigned clear responsibilities to the lower authorities, verifying the roles of each stakeholder when vessels violating foreign countries' waters are recorded is not simple. At that time, numerous reasons were given that did not identify the faults and roles of anyone".

A central government official responded as follows:

"When the arrest of fishers on fishing vessels is clear, the rest of the work involves the administration of sanctions according to the regulations. However, the local fisheries authorities have not strictly implemented the sanctions for various subjective and objective reasons. This does not exclude the possibility of corruption or "fear of collision" occurring somewhere in the penalty process. As a result, the fishers avoid the regulations".

Notably, the handling of violations has not been consistent among provinces. Some localities have implemented sanctions fiercely, whereas others have not been strong enough with deterrents, leading to fishers being oblivious to the fisheries' laws and regulations. Therefore, determining the locality or the central government's responsibility when illegal fishing occurs in foreign waters is still complicated. The responsibility may even be pushed to others from related stakeholders. Overall, the handling of sanctions is cumbersome, weak, and incomplete.

According to a provincial fisheries official, crucial reasons for illegal fishing in foreign waters mentioned by the Prime Minister in a workshop on combating IUU fishing by the end of 2021 were as follows:

"Some central and local officials and administrative

agencies still lack a sense of responsibility in performing their official duties. In particular, they have not yet ensured the principle, when addressing illegal fishing in foreign countries' waters, of what fishers know, understand, believe, follow, and do".

Fishers' limited awareness

The fisheries authorities face many difficulties using VMS to monitor and control their province's fishing vessel activities at sea. Although fishers' awareness is limited, they have fully recognised the risk of violating foreign countries' waters. In reality, fishers have tried to deliberately avoid and break the rules in various ways to continue illegal fishing because of the high economic returns.

First, to escape the monitoring from the VMS of provincial fisheries authorities' centres, the fishers remove the VMS equipment with "intact lead stamps" to install on other small vessels or aquaculture sea cages at sea before illegally fishing in foreign waters. In the discussion group, Mr. K., a fisheries official, indicated that an illegal fisher in his province admitted the following:

"These small vessels could be mounted with 10–20 VMS units from illegal vessels. The fishers of each illegal fishing vessel have to pay VND2–3 million (USD100–150) per vessel per fishing trip to mount their VMS on other vessels. When the illegal vessel returns to the landing, the VMS is transferred back to the original vessel. Consequently, the fisheries agencies cannot detect any signs of illegal fishing on the VMS centre".

Second, when the fishing vessels were close to overlapping or foreign countries' water boundaries, they intentionally turned off their VMS or disconnected it in some way, regardless of the consequences, to escape the monitoring of the fisheries authorities based on the VMS centre. Given the expenses, seafarers' wages, and fuel costs involved in fishing, captains and owners usually agree. In some cases, the captains illegally decide to fish in foreign countries' water zones. Therefore, sanctioning remains a challenge because the vessel's owner and captain may make false declarations and blame each other.

Barriers to eliminating illegal fishing

Technical barriers to monitoring fishing vessels

VMS plays a vital role in supporting the province fisheries authorities in monitoring vessels at sea effectively. However, the functions of VMS in monitoring fishing vessels and providing warnings when they cross the nation's boundary are not stable and smooth. Many VMS units are disconnected and interrupted during management (The MARD, 2021; Office of the Government, 2021). When their VMS

devices are in trouble, the responsibilities of VMS providers are unclear, and major sanctions have not been applied when they do not ensure equipment quality (Phuong and Pomeroy, 2022). Two of sixteen Binh Dinh province fishing vessels with a length greater than 15 m are equipped with VMS. However, the equipment has not been functional since its installation when they were arrested by foreign countries' authorities (Phuong, 2022).

Even when fisheries authorities believe fishing vessels have violated foreign waters, the fishers often protest officials' claims. In particular, fishers and management officials have complained and doubted the accuracy of the electronic navigation chart on the VMS. Consequently, officials have faced many difficulties in verifying, investigating, and handling fishing vessels under illegal fishing acts.

In the following statement, an official provides an opinion similar to that of all fishers and other provincial officials interviewed:

"The determination of the position on the chart from the VMS system in general and the electronic navigation map of the national fisheries management system have not yet ensured that the legal regulations to assess vessels' positions at sea are conducted accurately".

In addition, several surveyed officials made comments similar to the following:

"When the vessels' position provided by the VMS cannot be verified, it is complicated to determine conclusively whether vessels are operating illegally in foreign waters".

Fisheries officials find it difficult to determine whether fishers enter foreign waters for illegal fishing, for innocent reasons, or in case of an emergency. Thus, although fishers may have been operating commonly within Vietnamese waters in practice, provincial fisheries authorities believed they were illegally fishing in foreign waters.

Notably, an issue was raised at the central level related to disagreement about using VMS data as a key indicator in sanctioning fishers. A leader of the provincial fisheries department made the following comment:

"At the conference, the MARD's Directorate of Fisheries tried to halt IUU fishing and stop illegal violations in foreign waters in several ways. However, a representative of the Ministry of Justice affirmed that the MARD's use of VMS data is insufficient to provide a legal basis for handling violating fishers due to the lack of regulations related to using VMS data and GPS for fisheries' administrative sanctions".

Issues with management mechanisms

Two problems related to Vietnam's fisheries management structure model strongly affect the ability to prevent illegal fishing and must be addressed. First, fishing policies are unsuitable, continuously causing fishing boats to operate in foreign waters. Specifically, the division of sea areas is considered inappropriate. Several fisheries officials from different coastal provinces stated that partitioning fishing areas according to the length of fishing vessels is unconvincing and unscientific. Consequently, many vessels of 12–15 m in length operated in a highly concentrated manner in the coastal and near-shore areas, placing substantial pressure on these marine resources. Therefore, the fishers must travel offshore and violate foreign waters to fish efficiently and make profits.

Second, Vietnam's patrol model at the provincial level is inconsistent, as each province has a different government structure. For example, patrol activities in the Fisheries Inspectorate Division of the Fisheries Branch Department belong to the Department of Agriculture and Rural Development in Binh Dinh and Khanh Hoa provinces. In contrast, the patrol tasks are run directly by the Department of Agriculture and Rural Development in other provinces, such as Kien Giang and Binh Thuan. Thus, coordination in implementing joint patrol missions in provinces is inconsistent, leading to weak law enforcement and a lack of clarity on responsibility for sanctions.

Discussion

Illegal fishing in foreign countries' water zones is arguably the primary IUU fishing-related issue in Vietnam's fisheries. Since the EC-issued Vietnam with a yellow card warning, illegal fishing has been a major concern across the political system. Numerous directives, regulations, and official telegrams have been issued at both national and local government levels, with directions given at the central to the local levels. However, various challenges and constraints still need to be addressed.

First, although the legal framework has been reformed comprehensively and the magnitude of sanctions for violating foreign waters provides a sufficient deterrent, enforcement and compliance are weak; indeed, no sanctions have been enforced in practice. Notably, from the central to the local level, all political systems only stop at "calling upon, not actions yet". There must be more political will to reduce overcapacity, impose sanctions and enforce laws at all levels of government. Therefore, administrative sanctions must be strictly implemented while executing judgment, from decisions on paper to monetary fines. Central and local government authorities must find a "common voice" to solve the problem of illegal fishing. Responsibilities, specific roles, and coordination must be clarified among all

stakeholders, including fisheries, sea-border stations, portside authorities, and others. There is a requirement for more appropriate, strict, and robust solutions to meet the criteria set by the EC to remove the yellow card and ensure that results are long-lasting and substantive.

In Viet Nam, although fishers sign the penalties and confirm their violations, enforcement is challenging (e.g., fishers do not pay fines). Punishment had been imposed on paper, but fishers were hesitant to pay or could not pay because they had lost their boat assets and had to pay compensation to foreign countries' authorities to be allowed to return to Vietnam. In a study conducted in Malaysia, Ghazali et al. (2019) found that the existing legal framework is considered comprehensive, but further stringent and fair law enforcement is required to fight IUU fishing in Malaysian waters. New Sunday Times (2023) reported that Malaysia lost 96 % of its demersal fish stock in less than 60 years, and only 50 % of the fish caught landed in Malaysia while foreign fishers stole the rest. As a result, a special task force involving the Defence, Agriculture, Home and Foreign Ministry was formed to go all out to protect Malaysian waters. They tend to take one of the strictest measures to prevent the theft of marine resources: re-establish Op Naga (Operation Dragon), including burning and sinking captured foreign fishing vessels (New Sunday Times, 2023).

Second, fisheries-related authorities' motivation, commitment, and responsibility are crucial to preventing illegal fishing in foreign countries. Therefore, overcoming the general lack of motivation and commitment will be difficult if the authorities' responsibilities and roles are unclear between the central and local governments. According to Hanh (2021), who conducted a study on Vietnam's small-scale fisheries, it was found that the fisheries authorities are unable to facilitate the development of alternative livelihoods due to a lack of motivation, commitment, and unclear responsibility. During the penalty process, corruption, avoidance, and a mentality of being afraid of confrontation with various stakeholders is possible. Contributing factors to weak governance in Vietnam's fisheries sector might include a lack of political will or political capacity, corruption, and conflicts of interest (Carbonetti et al., 2014).

In addition, efficient reforms have been thwarted by complacency and open denial from central officials (EJF, 2019). Specifically, in early May 2018, the MARD declared that there had been no recorded cases of illegal fishing by Vietnamese fishing vessels in domestic or international waters since the start of the year. This statement was at odds with official media reports from several ASEAN countries, including Thailand, Indonesia, and the Philippines, where Vietnamese vessels were arrested continuously due to violations of foreign countries' waters (EJF, 2019).

According to Bergseth and Roscher (2018), fishers

know the management's legitimacy and understand that poaching is socially and personally unacceptable. Due to false consensus, pluralistic unawareness, social learning, and a perceived deficiency of deterrence, fishers could be continued non-compliance. Therefore, fear-stimulating communications, social outreach, and strengthened coercive deterrence measures will likely increase compliance. From the fishers' perspective, the most critical factor in non-compliance is economic motivation, besides weak law enforcement (Ha and van Dijk, 2013). Fishers in Vitoria Lake, East Africa, believe regulations are essential to support fisheries management action. Nevertheless, given the extent of fishing illegally, they stated the futility of legal fishing. They justify their non-compliance by considering the cost of legal fishing compared to illegal and the need for better catches and income related to illegal fishing (Cepić and Nunan, 2017). Vietnamese fishers try to avoid and break the rules in various ways to continue illegal fishing trading off the risk of arrest from foreign authorities.

Furthermore, the economic, social, and institutional factors motivating fishers to violate foreign waters are closely related and not mutually exclusive. Besides, Vietnamese fishers' primary motivation for roving banditry is the displacement from the South China Sea. This shows the climbing geopolitical tensions due to China's increasing territoriality and reveals the larger regional implications that can affect countries as far away as Australia or Vanuatu (Wilcox and Bergseth, 2021). As the cost of illegal fishing increases, the action level will decrease, whereas increasing profits from the action will exacerbate the problem (Lee and Visawanathan, 2020).

Third, several studies found that arrangements are often made to allow Vietnamese fishing boats to operate in foreign waters illegally. Payments are also made for Vietnamese fishing vessels and fishers arrested by foreign countries to be returned (VASEP, 2018; EJF, 2019; Phuong and Pomeroy, 2022). Confirming illegal fishing violations is challenging because sophisticated tactics are used to escape detection from the Vietnamese authorities (Phuong and Pomeroy, 2022). Such actions might be related to organised crime groups (OCGs) or/and transnational organised crimes (TOCs) in Vietnamese fisheries.

However, the criminal handling of illegal fishing in foreign waters has not been possible because no law explicitly regulates this behaviour in Vietnam's legislation framework (Ngan, 2020; Thanh and Minh, 2021). Notably, several studies have mentioned the involvement of OCGs/TOCs in IUU fishing in various countries and global regions (Liddick, 2014; van Hum, 2016; van Uhm and Siegel, 2016; Warchol and Harrington, 2016; Stefanus and Vervaele, 2021). Therefore, measures will not be successful without fishers' support and their awareness of the consequences of violating foreign waters. Fishers

must be involved in the decision-making processes related to fisheries' policies and regulations at the national and local levels. Authorities should be "fellow travellers" and seek to gain an understanding of fishers and the condition of fisheries communities. Only then will national governments solve the problem of illegal fishing in foreign waters and facilitate the removal of the EC-issued yellow card.

Notably, international fisheries instruments only provide general guidelines and lack consideration for OCGs/TOCs in IUU fishing. Different countries formulate legal and enforcement systems and solutions for addressing illegal fishing activities related to OCGs/TOCs broadly and at their discretion, e.g., by implementing administrative sanctions, civil penalties, or imprisonment (Stefanus and Vervaele, 2021). For example, some nations, including Malaysia, Indonesia, Nigeria, and Tanzania, handle IUU fishing in their territories by relying more on criminal penalties against lawbreakers (Palma et al., 2010), whereas other nations, including Vietnam, Spain, and Portugal, prefer to use administrative sanctions (FAO, 2003). Thus, foreign illegal fishing actors can exploit the different national regulations, implementation schemes, and practices, e.g., operating in jurisdictions where sanctions are least effective and continuing their activities without substantial hindrance (Stefanus and Vervaele, 2021).

After reviewing substantial literature and two case studies, including examples from Vietnam and Indonesia, Stefanus and Vervaele (2021) suggested that to address IUU fishing, it is necessary to oblige all nations' governments to criminalise specific actions and provide legal support to other nations to suppress OCGs/TOCs in IUU fishing. This has a clear transnational and organised crime dimension and causes major harm to the state. Because IUU fishing, including illegal fishing in foreign waters, fits the criteria for criminalisation, suppression conventions should be implemented to limit OCGs/TOCs in such fishing activities in Vietnamese fisheries sectors (Boister, 2002; Stefanus and Vervaele, 2021).

However, in an all-inclusive sense, it is necessary to consider the diversity, legitimacy and sustainability of small-scale fisheries and their governing systems. A consider equalities between different sectors and countries, creating a fair burden on small-scale fisheries and countries who depend on them, especially when IUU is increasingly approached as OCGs. Therefore, the need for more sensitive and ultimately more equitable incorporation of small-scale fisheries can be supported in the global fight against IUU fishing (Song et al., 2020). In Vietnam, it will be necessary to add criminal sanctions to the legislation for acts of brokering and organising the use of fishing vessels abroad for fishing related to OCGs/TOCs. Furthermore, authorities must strengthen their patrols and control work at sea, especially in bordering and overlapping sea areas with foreign waters.

Fourth, the Fisheries Law regulates that fishing vessels must install the VMS, comply with port control measures, and meet the patrolling control requirement at sea (Office of the National Assembly, 2017). Circular No. 21/2018/TT-BNNPTNT (issued by MARD dated 15 November 2018) guides the submission of catch logbooks and reports, the announcement of 60 fishing ports designated to certify the origin of captured aquatic products, the list of IUU vessels; and guidance on the validation of raw materials. Circular No. 21 is the prevailing legal basis for Electronic Catch Documentation and Traceability (eCDT) in Vietnam. The Circular provides detailed regulations on catch documentation (logbook). The Circular also states that such data and information could be in either paper-based or electronic form to ensure that the data and information are accurate, contributing to the prevention of IUU products into and from Vietnam (MARD, 2018). However, in large vessels required to install the VMS, fishers remove the equipment with an "intact lead stamp" and install it on other vessels at sea.

Moreover, smaller vessels easily escape detection in national foreign water areas because they are not required to install VMS equipment and are not controlled or monitored by government fisheries authorities. Additionally, fishers who break or avoid fisheries management rules often employ tactics such as registering their vessels under foreign flags, commonly known as "flags of convenience" to perform illegal activities (Petrossian et al., 2020). Vietnamese fishers deliberately violate foreign waters for immediate economic benefits. They use several sophisticated methods to "bypass the eyes of the government authorities" and illegally fish using their vessel outside national fishing grounds.

Notably, the almost complete absence of transparent mechanisms sheds some light on the blur fishing practices described here. Fishing vessels can operate without flags and partially obscured registration numbers and names due to rare and cursory portside inspections (EJF, 2019). Indeed, marine landings are not adequately verified or documented at fishing ports. In particular, the crew's identification papers and crew list are not adequately checked by provincial authorities (EJF, 2019). Importantly, the capacity of Vietnamese authorities to enforce or manage fishing activities at sea using patrol vessels and other direct monitoring tools is costly and unfeasible (Ha and van Dijk, 2013). Consequently, the authorities cannot detect illegal labourers, particularly child crewmembers, or illegal landings of fish from overseas (EJF, 2019).

Finally, illegal fishing in foreign waters is strictly related to Vietnam's marine resources and fishing grounds. These marine resources are exhausted while too many fishing boats operate in national waters, leading to inefficient fishing activities in domestic water zones, pushing fishers to violate international waters (Phuong and Phu, 2013; Carbonetti et al., 2014;

David, 2017; EJF, 2019). Regulations for partitioning fishing areas by the length of fishing vessels are considered unconvincing and unscientific. As a result, many vessels with lengths <15 m are too concentrated in the coastal and near-shore areas, placing too much pressure on marine resources. Overcapacity in Vietnam fisheries has long been identified, leading to a dilemma in which reducing the number of fishing vessels will strongly influence the socioeconomic issues of poor fishers (Phuong and Phu, 2013). Therefore, the local fisheries authorities' responsibilities must be reviewed when they cannot enforce their regulations.

When fishers could not operate near the shore with no catch, they either travelled offshore to neighbouring water zones to search for more productive and high-risk fishing grounds overseas or stayed near the shore. However, fishers will likely become unemployed if they stay near the shore (EJF, 2019). According to Tengfei and Runxi (2021), rampant illegal fishing activities and intensified fishing conflicts with foreign countries are closely related to the Vietnamese government's numerous fisheries policies. Specifically, the Government's standpoint tends to encourage, support, mobilise, and protect Vietnamese fishers fishing far from the shoreline. Thus, several policies have been introduced, e.g., a program of offshore fisheries development; support for fishers to upgrade, transform, or build large fishing vessels; fuel subsidies; and soft loans and other financial support. These policies might be related to political factors, such as the sovereignty of oceans and islands (Tengfei and Runxi, 2021).

The Vietnamese government must balance marine resources and fishing vessel scale to reduce fishing pressure on coastal and near-shore fishing grounds. This could be achieved by scientifically assessing Vietnam's fish stocks and marine resources to convince stakeholders to reduce the number of fishing vessels. The means of undertaking such a reduction should be established, possibly including international cooperation for fishers to upgrade their vessels for high-sea fishing or providing alternative livelihoods to allow fishers to exit the fishery industry.

Conclusion

Illegal fishing in foreign waters is a prominent issue in Vietnam. The central government authorities have implemented various approaches to prevent this practice, including reforming the legal framework and issuing directive documents. Provincial authorities have major concerns related to legal enforcement, including publicising illegal foreign fishing vessels on public media, the responsibilities attached to the heads of authorities, propagating an enhanced awareness in vessel owners and captains, and equipping fishing vessels with VMS. However, illegal fishing in foreign waters continues. Several reasons exist for this continuation, including exhausted marine

resources, too many fishing boats operating in the same areas, unclear responsibilities, and coordination of authorities, and even being pushed among related stakeholders. Fishers have also tried to avoid and break the rules due to economic motivations. Thus, balancing socioeconomic factors with ecological resilience will be necessary to deal with the exacerbated issue of illegal fishing in foreign waters.

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