



Blue boats in deep waters: how aspects of IUU policy impact Vietnamese fish workers

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Received: 15 May 2022 / Accepted: 14 March 2023 / Published online: 4 April 2023
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Abstract

Illegal, unreported, and unregulated (IUU) policies in the Asia–Pacific region are impacting Vietnamese blue boats. We examine several aspects of IUU policy, including the effects of hardening marine borders in the Southeast Asian region and the increased surveillance of Vietnamese blue boats, to understand how such policies impact blue boat owners, captains, and workers. We find that under increased surveillance, fishers face greater precarity as they become subject to the legal and political actions of multiple states. When blue boats are caught outside Vietnamese waters, boat owners, captains, and workers face significant, albeit differentiated, livelihood challenges. We argue that policies designed to stop IUU or unsustainable fishing should also proactively address working conditions on blue boats; if not, policies may unwittingly cause problems for those directly involved in the industry, with hired workers facing particular hardships. For these reasons, Vietnam’s IUU yellow card can also be seen as an opportunity for fisheries labor reforms.

Keywords Working conditions · Labor · IUU policy · EEZ · Vietnam

Introduction

Vietnamese “blue boats,” named for their brightly painted blue hulls, fish throughout Southeast Asia, often far beyond Vietnam’s territorial waters (Song et al. 2019). Workers on blue boats spend weeks and sometimes months at sea before returning to shore: boats and workers are constantly moving across ocean spaces as they seek out particular fish species. Vietnam’s blue boat fleet—wooden boats between 15 and 24 m in size, utilizing 90 + horsepower engines (Wilcox and Bergseth 2021)—grew 25% between 2012 and 2019, rising to 33,000 vessels in 2019 (EJF 2019). Blue boats most commonly target squid, skipjack tuna, mackerel, and trash fish (Marschke and Betcherman 2016; World Bank 2021) and fish along the continental shelf using a mix of trawls, purse seines, and hook and line vessels. The growth of blue boats reflects a series of trends in Vietnam’s fisheries: resource depletion in nearshore waters (Pomeroy et al. 2009; Teh et al. 2014), a market for trash or small forage fish used as feed for fish farming (Marschke and Betcherman 2016),

and a labor force of workers with limited options that can support blue boat activities (EJF 2019). Reasons for fishing beyond territorial waters are also linked to the mobile nature of seafaring life that spans territories and boundaries (Roszko 2021).

In recent years, enforcement of maritime borders has intensified in the Southeast Asian region, linked to the creation of national institutions to govern ocean and maritime resources (Raharja and Karim 2022) and to global seafood trade policies, particularly the European Union’s policy related to illegal, unreported, and unregulated (IUU) fisheries (Kadfak and Linke 2021). IUU fishing policy in the EU emerged in the late 2000s out of concerns related to fishing fleets operating in the high seas, but also as an explanatory tool for global fisheries decline (Song 2021). IUU policy has a broad mandate, requiring states to implement a catch certification scheme to ensure seafood traceability (from vessel to market) to be compliant with conservation and management measures. It also encourages careful monitoring and strict enforcement of a country’s exclusive economic zone (EEZ) territory, up to 200 nautical miles out at sea (Kadfak and Linke 2021). EEZ fisheries policies can further be used by individual countries to strengthen their territorial and political control (Raharja and Karim 2022).

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The policy shifts towards EEZ regulation and IUU management in the region and in Vietnam are impacting blue boats and their crews. Indonesia began to remove Vietnamese crew and, at times, destroy blue boats found in Indonesian waters in the mid-2010s, as part of a campaign to portray IUU fishing as a global crime, not only as illegal fishing, but as a crime that includes drug smuggling, human trafficking, and slavery (Raharja and Karim 2022). Meanwhile, Thailand has cracked down on arrests of Vietnamese crew on blue boats that have entered Thai waters following the reform of their own fisheries (EJF 2019) and adherence to broader EU IUU policy (Kadfak and Linke 2021). The EU issued a yellow card to Vietnam in 2017, allowing the EU to have a formal dialog with Vietnam to start reworking its fisheries governance system, to comply with international conservation and management measures, and eventually to eliminate IUU fishing practices altogether (Kadfak and Linke 2021). Management measures include the prevention of illegal fishing, monitoring its national waters (e.g., blue boats fishing beyond Vietnamese waters), and traceability.

In this paper, we examine shifting regional fisheries dynamics with respect to maritime borders, blue boat worker livelihoods, and the choices made by blue boat operators and crew, following the issuing of the EU IUU yellow card. We begin our analysis with reflecting on how IUU policy has been shaped and implemented in Vietnam, before turning to understanding why some blue boats still fish in foreign waters, a practice that can result in boat confiscation, destruction, or crew jail time. We argue that IUU fisheries reforms should take labor into account, as labor is a critical aspect of fisheries governance and not doing so can have unintended consequences on fish workers. In doing so, we offer the opportunity to consider how fish workers and boat owners are impacted by IUU fisheries reforms, and demonstrate how the success of IUU policies are entwined with addressing labor issues.

IUU and Vietnam's fisheries reform

The EU is the world's largest import market for fisheries products. In 2008, the EU adopted a piece of legislation to prevent, deter, and eliminate IUU fishing (Nolan et al. 2022), and since 2010 the EU has used a carding system approach in the fight against IUU fishing (Kadfak and Linke 2021). When a yellow card is issued as a warning to indicate that a country is not fully cooperating, the EU works closely with the government of that country on changes that aim to reduce IUU fishing. Should a country receive a red card, fisheries products are banned from import into the EU. Such trade sanctions serve as a powerful mechanism to improve fisheries management for many countries. In Southeast Asia, the Philippines and Thailand each received a yellow card

which was lifted after a series of major fisheries reforms (Nolan et al. 2022); in contrast, Cambodia received a yellow card which was turned into a red card when Cambodia did not reform its fisheries. Cambodia cannot export fisheries products to the EU.

The impact of the European Union's IUU policy is seen to generally enhance fisheries management. For example, a study focusing on Belize, Guinea, the Solomon Islands, and Thailand found that EU IUU policy was particularly effective at improving legislative agreements, including participation in relevant international agreements, as well as monitoring, enforcement, and overall fisheries management (Nolan et al. 2022). The study also found that the policy's effectiveness was in good part due to the EU's technical assistance programs provided to states under the yellow card. The EU has sometimes included improvements in working conditions, or labor, as an informal requirement for lifting a yellow card: this was the case in Thailand. Creating fisheries monitoring and regulatory infrastructure such as port-based inspection stations for fishing vessels and crew improved enforcement of labor standards as well as fisheries regulations in Thailand (Kadfak and Linke 2021), and helped Thailand to become the first Asian country to ratify the International Labour Organization (ILO) Work in Fishing Convention, ILO C188, in 2019.

In the case of Vietnam, informal discussions with the EU IUU team began in 2012, with a yellow card being issued in 2017 (Kadfak and Linke 2021). The EU provided a series of recommendations for reforming Vietnam's fisheries to meet international conservation and management standards which have since been incorporated into the country's 2019 Law on Fisheries (18/2017/QH14), replacing an earlier 2003 Fisheries Law. This included greater law enforcement; an improved registration, licensing, and monitoring system; enhancing the traceability of fish products; preventing illegal seafood from entering Vietnamese territory; and improving cooperation with other countries and Regional Fisheries Management Organizations (VASEP 2018). In Vietnam, working conditions have not been included in the discussions of IUU reforms.

Within Vietnam's IUU reforms, two key aspects of policy have emerged: (a) the prevention and elimination of illegal fishing outside of Vietnam's EEZ and (b) conducting traceability of fish and fishery products (World Bank 2021). In other words, ensuring blue boats are fishing within Vietnamese waters has become a key priority to illustrate improved fisheries management. In 2019, the Vietnamese government issued Decree 42/2019/ND-CP to stipulate penalties for administrative violations of fisheries regulations, including fines ranging from VND 800,000,000 (USD \$34,968) to VND 1,000,000,000 (USD \$43,710) for fishing in the waters of another state or territory without the proper required licenses to do so (Government of Vietnam

2019a). This emphasis is also seen in Vietnam's 2018 National Action Plan which seeks to eliminate IUU fishing by 2025 and "to end the situation [in which] Vietnamese vessels and fisher[s]... illegally exploit marine products in the waters of other countries ..." (VASEP 2018, p. 47). In 2019, Vietnam ratified the FAO-administered Agreement on Port State Measures which allows ratifying states to bar vessels engaged in IUU fishing from using their ports and prevent illegally caught fish from entering global markets.

Vietnam's motivation to reform its fisheries stems, in part, from Vietnam's role as a major seafood producer. Seafood is an important export commodity for Vietnam: Vietnam is the third largest seafood producer globally, supplying seafood to 160 markets. Vietnam's seafood exports to the EU increased sharply over the past 20 years, from USD 90 million in 1999 to nearly USD 1.5 billion in 2017 (and have decreased slightly to USD 1.3 billion in 2019, linked to the yellow card and challenges with seafood exports during the pandemic) (World Bank 2021). Should Vietnam receive a red card, the country would lose significant export revenue and would also face reputational damage. While there are export markets that do not have IUU policy in place, other major export markets such as Japan and the USA have also developed IUU policy with an emphasis on traceability and EEZ management.

Methods

We focus on blue boat fish workers based out of Song Doc port, the largest port in Ca Mau province at the southwestern tip of Vietnam. Song Doc is an important fisheries port in Vietnam and holds a significant blue boat fleet that fishes in the Gulf of Thailand or the South China Sea, within and outside (historically, but also presently) Vietnam's EEZ. A portion of Song Doc's population is relatively wealthy; those with capital may be involved in fish farming or industrial fishing, with some households owning several fishing vessels (see Betcherman and Marschke 2016) and having deep roots in fishing. At the same time, the town is the launching point for many internal Vietnamese migrants who work on Vietnam's blue boats (Ha and Nguyen 2014; Betcherman et al. 2019) since there are not enough workers locally to supply these boats. According to our interviewees, thousands of workers come into Ca Mau from across the Mekong Delta and central Vietnam, depending on the fishing season. Seafood caught on blue boats is packed on ice and can be offloaded at sea, via supply boats (also known as transshipment at sea), but also at port, and is often for export, making its way to EU and US markets (EJF 2019; Changing Markets Foundation 2019).

Key informant interviews took place in 2019 and 2020, with 37 fish workers, 17 boat captains, and 23 boat owners

as well as 10 spouses. The focus of these interviews included working conditions, environmental conditions, social relations, and government policy. We asked a series of open-ended questions such as "Where are you allowed to fish?" and "What happens if you go elsewhere?." Although the topic of fishing beyond Vietnam's EEZ was sensitive in nature, given that it is illegal, some participants were able to speak openly about which fishing grounds their boats targeted. These interviews were complimented by insights from previous research into offshore fishing conducted by one author since 2012, and a review of the peer-review literature and news media.

When our interviews were conducted, the yellow card was already in place, but boat tracking devices, known as vessel monitoring systems (VMS), were not widely implemented, perhaps around 30% throughout Vietnam (Xu and Chen 2021). This percentage has grown: by the end of 2021, 99% of all applicable boats in Ca Mau had been equipped (VNA 2021a). Ca Mau is one of the provinces hailed by the Deputy Prime Minister for doing a great job of raising awareness among fishers on legal regulations (Nhan Dan 2021), although it is unclear how many boats actually used VMS equipment properly (Phuong and Pomeroy 2022). In other words, our data cannot speak to if widespread VMS implementation influenced where blue boats went to fish or to how blue boats used the VMS. This is where secondary data such as news articles of blue boats "caught" in other waters becomes helpful, as well as data from Global Fishing Watch which draws from satellite images to show fishing boats operating inside and outside Vietnam's EEZ.

Results

Blue boat work and precarious working conditions

Fish work from Song Doc port, as elsewhere, involves uncertain pay, seasonal work (based on the fishing season for a particular species), and is a high risk, dangerous job particularly in the face of storms (Campling and Colas 2021; McCall Howard 2012). In Vietnam, fish workers do not typically hold written contracts with their blue boat employers. Working conditions and catch share amounts are verbally negotiated and highly dependent on boat size, species, and gear type. According to the Vietnamese Labour Code, a pre-determined salary with set work hours and rest periods is required, although this is not how work in fishing is organized (as we explain momentarily). Further complicating labor relations is how fish workers are typically paid by a share of fish catch, and the variation found in offshore fisheries (catch share arrangements, overall length of time at sea). There are known cases of workers under 18 employed on blue boats which is illegal as defined in the Vietnamese Labour Code.

The ILO Work in Fishing Convention C188 notes that fish work should be limited to people over 16 years of age (Vietnam has not ratified C188).

Our focus was on blue boats that fished offshore but were considered mid-size, between 15 and 24 m, rather than boats that were greater than 24 m and fished offshore for longer periods of time (Fig. 1). In 2019 and 2020, when interviews took place, pay continued to be generally calculated as a portion of catch, ranging from 70/30 to 50/50 between the boat owner for the larger portion and the captain and crew for the smaller portion. Such arrangements translated into varied salaries, depending on boat size, gear type, and fishing grounds. Across our interviewees, fish workers perceive significant inequalities between themselves and captains and/or owners.

Workers on 15-m boats earned as little as VND 1 million (USD \$43) per month (for a 20-day trip) in contrast to workers on boats that were 20 m and longer. Here the catch share system offered workers a greater total percentage of catch, resulting in a monthly salary of between VND 7–10 million (USD \$302–433). The workers we interviewed all followed a similar working cycle, a 20-day trip, followed by 10 days at shore (time at shore was divided between home visits and vessel or gear maintenance). In a few cases, boat owners guaranteed a minimum monthly income of VND 2–3 million (USD \$87–130) to ensure a consistent labor supply in the case of a poor catch, with additional income if the catch share exceeded this amount. The monthly minimum guarantee, however, falls below Vietnam's rural minimum wage of VND 3.43 million (USD \$148) (Government of Vietnam 2019b).

Boat owners also act as a middle person, granting loans to fish workers. It is common for workers interviewed to hold loans from boat owners between VND 15 million (\$652 USD) and VND 20 million (\$866 USD). The incentive for workers to borrow from boat owners is the flexibility found in this system: workers do not pay interest rates, which can be exorbitant from a money lender, and pay back the loan when they can rather than on a monthly basis which the bank would demand. The catch: workers have to pay back their loans before stopping work, unless they transfer their debt between boat owners. This, in effect, ties workers to boat owners and means that it is not easy to change employers or to leave fish work.

Working conditions on blue boats can be difficult and do exhibit indicators of forced labor: workers do not have written contracts, cannot easily change boats, and can work in excess of 14-h days at times. That said, human trafficking does not appear to be an issue in Vietnam's fisheries, a finding also observed in a 2019 Environmental Justice Foundation report into blue boats (see EJF 2019). This stands in contrast to Cambodian and Myanmar migrant fish workers working in Thai distant water fisheries prior to fisheries reform in Thailand (Tran et al. 2017). Even so, there have been reports of physical abuse on blue boats (see Hung 2018; Tuoi Tre News 2020). We do not know of any studies that examine the physical or mental challenges of blue boat fish work.

Fig. 1 Photo of blue boats docked at the Song Doc port with identification numbers missing or obscured. Photo by author, December 2019



Unpacking blue boats in foreign waters

According to Global Fishing Watch data for January to December 2021, most of Vietnam's fishing effort tracked by automatic identification system (AIS) signals takes place within Vietnam's EEZ. Figure 2 offers a static representation of this time period. When one digs in closer to this data, and watches the movement of vessels over the year, two points of interest emerge. The first is the significant fishing activity in China's EEZ by Vietnamese boats. This is curious and hints that some type of arrangement may be at play that enables Vietnamese boats to access Chinese waters, or that China is not enforcing its territorial boundaries in this region. Some Vietnamese boats are also seen in Cambodian waters. Secondly, Vietnamese boats are fishing intensely at the edge of the Indonesian and Malaysian EEZs, but do not seem to be going far beyond these EEZ borders.

Figure 2 suggests there is little fishing beyond Vietnam's EEZ, other than near China, which differs from media reports of blue boats being caught outside of Vietnam's EEZ throughout 2021 (The Star 2022), and could be indicative of the observation that in 2020 more than 1400 fishing vessels turned off their VMS equipment to avoid detection (Phuong and Pomeroy 2022). IUU inspections carried out over a 2-year period in both Kien Giang and Ca Mau provinces found that 47 of the 100 or so fishing vessels inspected did not have their VMS device on board, having left them on shore, or moved them to another vessel (VNA 2022a).

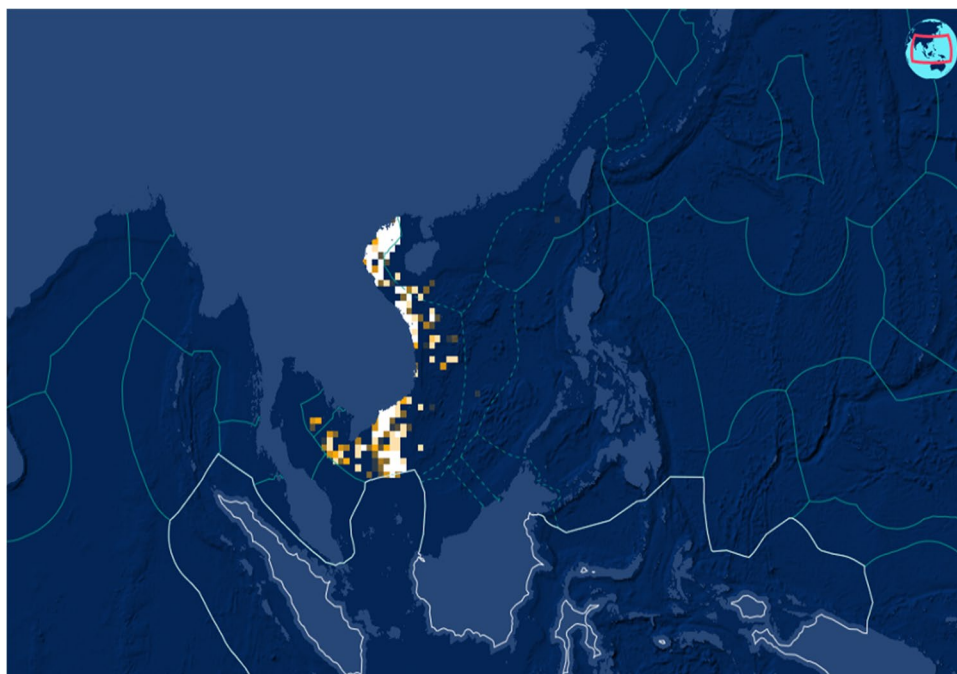
Although blue boats may have evaded Vietnamese detection by turning off their VMS, blue boats continue to be caught in foreign waters. By November 2021, 60 incidents

of foreign coast guards catching Vietnamese boats in overseas waters were recorded, a decrease of 32% from the previous year: this included a total of 98 fishing vessels, as some cases involved groups of blue boats fishing together, and 775 fish workers (VNA 2021b; The Star 2022). Blue boats were detained throughout the COVID-19 pandemic (Afifa 2022), with variable outcomes for crew. For example, at least 500 Vietnamese fishers were stranded in Indonesia throughout 2020, living in shelters and detention centers, waiting until it was deemed safe to return to Vietnam (Dianti 2021). Few of these fish workers were ever formally charged (Radio Free Asia 2020). This hints at the prevalence of Vietnamese blue boats fishing beyond Vietnamese waters and the precarity such workers face. To be sure, the pandemic saw major disruptions to seafood supply chains and fish worker livelihoods (see Marschke et al. 2020; Vandergeest et al. 2021).

Our interviewees also spoke of experiences fishing outside Vietnamese waters. Reasons for entering foreign waters vary. In some cases, environmental conditions and unclear borders mean that boats accidentally end up in foreign waters. In other cases, particularly when fishing in the region, it may be worth moving beyond Vietnam's EEZ into other waters to fish for lucrative aquatic species. A former boat owner who had his boats seized in Thailand summarized the risks of deciding which foreign waters to enter:

“The punishment depends on where we get caught. In Cambodia, we can make an arrangement with the local government and pay a small fee. In Thailand, we get sent to prison or get a fine. In Indonesia, they have guns and will blow-up our boat.” (Interview B94)

Fig. 2 Map of Vietnamese fishing effort and surrounding EEZs in Southeast Asia. Source: Global Fishing Watch database



Blue boats traveling outside of Vietnamese waters to fish is nothing new: this is a practice that has been ongoing for decades (Rozko 2021). What has changed, however, is a significant crackdown on blue boats entering regional waters from Vietnamese authorities and other countries in the region. According to our interviewees, the Vietnamese navy is more actively patrolling its waters and issuing fines than ever before. For the Vietnamese government, legitimacy on the international stage and continuing important trade relationships that contribute to the national economy drive the efforts to control blue boat actions and their physical movement on the ocean. What is less clear is how the interests of and dynamics between workers, captains, and owners result in decisions for boats to cross marine borders. Below we examine these differing perspectives and respective impacts.

Boat owners

Of the boat owners we interviewed in 2019 and 2020, all were familiar with the EU's yellow card. Most had attended training sessions on regulations and paid for mandated upgrades such as VMS (tracking devices). Moving beyond Vietnam's EEZ provides opportunities to catch a larger volume of fish and to generate greater profits. Although boat owners generally emphasized that they do not want fishers to go to foreign waters illegally, they commented on the motivation of those who do:

"Nowadays in the sea near Ca Mau, finding sufficient fish is rare. Of course, these boats must go to another area to fish! If not, they will not get any profit. How can they live? They know it's illegal, but they have to go." (Interview B11)

"People fish in illegal areas just to make a living, but they don't actually want to do that." (Interview B16)

There are other reasons why boat owners might encourage blue boats to fish beyond Vietnam's EEZ. According to our interviewees, mandated upgrades to boats, increased financial risks, and unreturned loans by fishers resulted in big financial pressures from boat owners. This suggests that owners are incentivized to ensure a return on their investment. Owners may be unwilling to openly endorse such a practice but they benefit financially if their boats generate a more lucrative catch overseas without getting caught.

Boat seizures can result in owners losing boats or fishing gear. We spoke with two boat owners who had boats seized following Thailand's fisheries reforms. The first owner faced the seizure and destruction of his four blue boats that had been fishing in Thai waters, just after the Thai reforms were put into place (Interview B94). This led to bankruptcy for the boat owner as he has taken out a large loan of 900 M

VND (38,351 USD) to buy and outfit his blue boats; the repayment of his loan was dependent on a regular, successful fish catch. After this, he transitioned from a life-long career in fishing to working as a security guard at a hotel. For the second boat owner, two of her boats were caught in a major storm in 2019 (Interview B10). The captain called the boat owner, and she made the call for the boats to head into Thai waters to escape the storm. She notified the Vietnamese authorities, who were meant to follow up with Thai authorities. At this point, communication broke down: the Thai authorities seized her two blue boats which eventually sank due to a lack of proper storage and care. Although government compensation was promised, the boat owner is skeptical if she will see the funds and has faced a significant financial hit. Her boat cost 700 M VND (29,851 USD) to buy, and when combined with salaries for workers and other maintenance costs, was worth 1 billion VND (42,644 USD). This boat owner also decided to quit as the costs were too exorbitant given the potential to lose boats. These two cases illustrate how an active IUU policy can have complex consequences.

Captains

Some owners also captain their boats while others hire captains to be the authority on board. Captains who are not also owners are paid more than workers, but also face greater fines or penalties when boats get captured in foreign waters. All interviewees in our study said that the captain decides where the boat goes to fish. When we pressed some boat owners on this, asking "Do you as an owner really have no say?," some boat owners said they do not permit the captains to take blue boats illegally abroad, but this was something that boat owners remained vague on in our interviews. This is likely linked to the "illegal" or "non-compliant" nature of such choices.

Captains are generally aware of regulations at sea, particularly given the training sessions that have taken place since the yellow card. In one interview, two brothers working on the same boat as captain and deputy captain commented on the use of tracking devices:

"[The yellow card] means that they don't allow us to go [beyond Vietnamese waters] to fish. After [Vietnam received the yellow card], the government attached black boxes to follow the boats. If [fishers] violate the rules, they get punished. The black box is like the airplane's black box: wherever your boat goes, they know. They know immediately. The Fisheries Ministry knows." (Interviews B36 and B37)

Everyone understands that VMS monitors movement, and the fisheries authority can see when boats go beyond Vietnam's EEZ territory. That said, some blue boats find

ways to handle the tracking device to enable them to fish further afield. One fisher explained how this is possible:

“A lot of Vietnamese boats still go to the international sea, especially to Thailand. If they want to go abroad, they will take the tracking devices out of the boat and put it in another boat that stays in Vietnamese waters.” (Interview B76)

VMS equipment, also referred to by some in fishing as “the black box,” are mandated for boats 15 m and longer. Blue boats are allowed to fish in the designated offshore areas of Vietnam’s EEZ, but not in near or midshore areas. Blue boats are therefore restricted to a particular area where many interviewees noted that it is not always possible to land a decent catch. While these restrictions may be important for ecological sustainability, captains note the challenge of locating abundant fish as reasons why boats may go elsewhere. Interestingly, in our interviews, we heard of cases where smaller boats (less than 15 m) designated to fish in nearshore fishing grounds may go beyond Vietnam’s EEZ and skirt the requirements for a VMS. When a VMS is intentionally disabled or removed, blue boats (owners generally, who may pass costs onto captains depending on the situation) can be fined anywhere between VND 20,000,000 (USD \$874) to VND 30,000,000 (USD \$1311). Thus, it is costly to get caught.

Workers

For fish workers with whom we spoke, illegal fishing was linked primarily to moving beyond national maritime boundaries. While there was not always a clear understanding of the yellow card as compared to owners and captains, they had a strong awareness of maritime borders (i.e., Vietnam’s EEZ). This pre-exists Vietnam’s yellow card, owing to ramped up policing in Indonesia and Thailand in 2014/2015. The vast majority of interviewees were highly aware that they were only allowed to fish within Vietnamese waters.

One worker, who had the experience of working on a blue boat that traveled to Thailand, Indonesia, Malaysia, and Cambodia, ended up in a Thai prison for 5 months or so (Interview B63). This worker commented how he was wary of fishing beyond Vietnam’s EEZ both due to the potential to end up in prison and because of steep fines. Another fish worker noted:

“I’m not afraid of having to work hard, I’m afraid of having no money” adding, “Now I only go fishing in Vietnam. I don’t go to foreign countries’ waters anymore because I’m too scared.” (Interview B29)

Similarly, another fish worker noted:

“My boat went illegally to other countries ten years or so ago because it was much easier, but now there are tracking devices so it’s hard. We don’t catch much nowadays, so it’s a rough time.” (Interview B95)

Some workers may not have much choice about where they fish and if they move beyond Vietnam’s EEZ. One worker noted: “We must accept it if the captain takes us to international waters. We don’t necessarily know where we are.” (Interview B47 worker). Even if some workers were uncomfortable with going beyond Vietnam’s EEZ, the pressure to do so continued throughout the pandemic, as seen in the number of arrested or stranded blue boat workers (VNA 2021b; The Star 2022). Our sense is that workers cannot influence where a captain decides to fish once at sea: sometimes borders are blurry or a storm comes up, but at other times an intentional choice is made to fish further afield in hopes of achieving a better catch. The current catch-share system means that everyone working on a blue boat will benefit financially should blue boats go further afield and not be caught.

A recognition in this imbalance of power may be why workers often initially face a smaller fine or shorter prison time as compared to captains when caught in foreign waters. However, workers interviewed noted that boat owners who are responsible to pay for bringing fishers in foreign prisons back to Vietnam, according to Decree 42/2019/ND-CP, sometimes refuse to do so. These interviewees suggested that boat owners are more likely to pay to bring home a well-performing captain than all workers. In this way, workers may actually spend a longer time in prison as captains are brought home more quickly. Furthermore, increased costs to boat owners are likely downloaded on to workers. One of the boat owners mentioned in the “[Boat owners](#)” section, who no longer works in fishing, said that when they were a boat owner, payment was dependent on how much profit they made. If they did not make a profit, workers did not get paid (B94).

Discussion

Vietnamese blue boats can be portrayed as greedy, criminal actors causing extreme ecological, social, and economic damage (SIBC 2017; EJJF 2019). The framing of workers as criminals conflates administrative violations with crimes such as human trafficking and drug smuggling, placing undue attention on the need for law enforcement rather than addressing root causes driving this behavior (Page and Ortiz 2019). Blue boat crew detained in foreign waters can be used to serve as examples of effective IUU policy as the political importance of IUU enforcement ramps up across the region (Nolan et al. 2022). Thailand, Indonesia, and

Vietnam are keen to continue to export seafood products to the EU market, and face serious pressure to manage their EEZ and illustrate seafood traceability (World Bank 2021). From an IUU prevention perspective, blue boats are easier to target than industrial trawls: they are far smaller, slower, and easier to target by maritime authorities compared with distant water fishing fleets operating in foreign waters. As an example, China's industrial fishing fleet has grown to be the largest globally, has significant cases of IUU fishing, and is proving difficult to monitor and stop (EJF 2022; Myers et al. 2022).

Yet, compliance to emerging rules can also be seen as a social phenomenon (c.f., Boonstra and Dang 2010). Boat owners may see the need to fish beyond Vietnamese waters as a way to "keep up with the rest" (Boonstra and Dang 2010: 1256). Border enforcement only began in earnest in the region in the 2010s and in the past few years in Vietnam. Thailand underwent major fisheries reforms only when major "slavery scandals" emerged (Marschke and Vandergeest 2016), including EEZ border management and fleet reorganization; Indonesia began enforcing its borders actively, linked to a process of re-territorialization (Raharja and Karim 2022). The issue of offshore fisheries management in Vietnam is nascent and compliance needs to be understood as more than simply involving individual blue boats.

A significant part of Vietnam's IUU reforms is the implementation of a VMS system, a form of traceability. Concerns over unsustainable and IUU fishing have worked in good part by using new technologies to track both vessels and seafood (Kadfak and Widengård 2022). In the case of Vietnam, the VMS system is designed as an incentive to stay within Vietnam's EEZ; however, this management system remains in its infancy and is not always followed as is reflected in the number of blue boats who turn off their VMS signal (Phuong and Pomeroy 2022; VNA 2022a). This is a practice we also heard of in our interviews. Vietnam's IUU fishing policy may result in crew tampering with the VMS governance system, taking an even greater risk of additional fines if caught, in order to continue fishing in foreign waters.

VMS systems cost money to upgrade, expenses typically borne by vessel owners. However, these costs are often passed on to workers in that it is yet another expense that is recouped in catch sales and accounted for before profits are divided among workers. Moreover, although VMS increases the traceability of boats, this system does little for workers. Fishing has been identified as having particularly unacceptable working conditions (Vandergeest and Marschke 2020), and these challenges are also seen in Vietnam. Our data shows that pay is low, contracts are non-existent, and there are strong patron-client relations between vessel owners and workers, which may include forms of bonded labor. This is where Thailand provides a useful

example: Thailand has a port management inspection system that considers the traceability of boats and workers (Kadfak and Linke 2021). The Thai case illustrates how the creation of a fisheries monitoring and regulatory infrastructure can facilitate improved enforcement of labor standards as well as fisheries regulations, and further illustrates why a context-specific approach is critical for implementation (Kadfak and Widengård 2022).

As our data illustrates, it is risky for blue boats to move beyond Vietnam's EEZ, perhaps even more so in 2022 (VNA 2021b) than when our interviews took place. In a context of perceived fisheries decline, moving beyond Vietnam's EEZ is where many blue boat owners and captains believe an abundance of higher value fish species can be found. While our data did not allow us to go into the costs of blue boat operation including when blue boats are most profitable nor the dynamics between captain and crew, insights from other fisheries suggests that captains and vessel owners will hold considerable sway in terms of targeted fishing grounds (Tran et al. 2017; Marschke et al. 2020). Labor dynamics across Vietnamese fisheries point to power dynamics in which blue boat workers are unlikely to have much agency in picking a fishing ground. At the same time, the current catch share system offers a financial incentive to push for bountiful catches, even as the ratio split works in favor of captains and boat owners.

Examining Vietnamese blue boats allows for a better understanding of the position(s) in which blue boat fish workers find themselves. With poverty and precarious livelihoods at the center of offshore fish work, it is unclear if a delineated EEZ and better enforced boundaries will restore fish stocks or help fishers make a decent living. Boats owners may continue to find ways of skirting the law in search of more abundant fish stocks, and perhaps some will exit the fishery. Workers might find themselves arrested and detained in foreign countries, facing fines or job loss, meaning enhanced precarity in pursuing a fishing livelihood. If Vietnam continues to think of offshore fishing growth as part of its ambitious economic goals, including having a modern fishing industry while protecting marine biodiversity (VNA 2022b), then IUU fishing policy will need to move beyond policing efforts. IUU reforms can also serve as an opportunity to reflect on working conditions: labor is a critical aspect of fisheries governance.

This by no means suggests that fisheries reforms are unnecessary. The challenge is that IUU policies can unwittingly cause problems for hired workers in these fisheries, and this needs to be carefully considered. Although the EU's IUU policy was initiated and remains oriented primarily to improving fisheries management, we know from the Thai case how innovative IUU policy can be leveraged to improve working conditions. In Vietnam, this includes making fisher income more liveable and stable by

shifting to increased minimum monthly wages rather than relying on catch share arrangements that require significant catch volume to be viable. Contracts and other means of worker documentation can also help ensure workers' rights and protect fishers who get caught by international authorities. It remains far too easy for blue boat owners to deny responsibility and cut off ties with fishers who are left stranded or in prison overseas (Song et al. 2019). Key to all this will be considering the needs and perspectives of blue boat workers themselves, and ensuring that workers have the right to collective action and unionization. This all contributes to a decent work agenda for blue boat workers (Vandergeest and Marschke 2020; Garcia Lozano et al. 2022). Protecting biodiversity requires that we tackle larger-scale industrial extractive relationships with the ocean and protect fishers' ability to make a living at sea (Bennett et al. 2021; Campling and Colas 2021).

Acknowledgements We are grateful to all interviewees and assistants in Vietnam who offered their knowledge and support to this project. We would also like to thank the Work at Sea group for our weekly writing sessions, Terence Rodolph for help with our map, Mallory McDonald for her guidance on technical aspects of boats and ecology, and Peter Vandergeest for his thoughtful advice.

Declarations

Conflict of interest The authors declare no competing interests.

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