



# Avoiding and exploiting the tragedy of the commons: fishing, crime, and conflict in the South China Sea

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## Abstract

What factors have driven the dramatic depletion of fishery resources in the South China Sea, and how have states responded? This article demonstrates that a complex mix of political, economic, and security drivers has led to the fishing crisis in the South China Sea in the fashion of a classic “tragedy of the commons.” Although states have attempted to solve this problem by cooperating through bilateral, regional, and international arrangements, the article argues that states have also sought to exploit the situation as part of “hybrid” or “gray zone” strategies that blur the lines between private and public actors and between law enforcement and military activities. It identifies four mechanisms through which the conditions associated with the tragedy of the commons enable states to put fishers and fishing regulation on the frontlines of defending their territorial claims in the South China Sea.

**Keywords** South China Sea · Fishing · Tragedy of the commons · Gray zone conflict · Security

## Introduction

The security implications of territorial disputes in the South China Sea have received a tremendous amount of attention over the past decade, but less consideration has been given to the central role that fishing plays in the politics, economics, and security of the area. Fishing often falls into the category of routine commercial activity that generally does not warrant close attention from policymakers, but in fact, some have gone so far as to say that “the South China Sea [dispute] is really a fishery dispute” (Greer 2016). Around 12% of the global fish catch—roughly 16.6 million tons—comes from the South China Sea, and it hosts more than half of the world’s fishing vessels. Although the South China Sea constitutes only 8.6% of the

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ocean's surface, it is home to incredible biodiversity, including about 22% of the known fish species in the ocean (Pauly and Liang 2020). However, these rich fishery resources are currently being depleted at an alarming rate. Over the past two decades, fish stocks in the South China Sea have decreased by around 66–75% and are thought to be only 5% of what they were in the 1950s (Asia Maritime Transparency Initiative 2017).

What factors have driven the dramatic depletion of fishery resources in the South China Sea? How have states bordering the South China Sea responded to the need to sustainably manage fish stocks and govern fishing practices in the area? This article argues that a complex mix of political, economic, and security drivers has led to the fishing crisis in the South China Sea in the fashion of a classic “tragedy of the commons”; due to the accumulated effects of individuals acting in their own interest, the resources of the area have been depleted. Although states have attempted to solve this problem by cooperating through bilateral, regional, and international arrangements, the article demonstrates that states have also sought to exploit the tragedy of the commons as part of “hybrid” or “gray zone” strategies that blur the lines between private and public actors and between law enforcement and military activities. The analysis focuses on the events of the past several decades, drawing on government documents, official statements, media reports, and quantitative data, as well as the existing scholarly literature.

Specifically, the article identifies four mechanisms through which the conditions associated with the tragedy of the commons enable states to put fishers and fishing regulation on the frontlines of defending their territorial claims in the South China Sea. First, the structure of incentives surrounding fish stocks as a common-pool resource results in overfishing and overcapacity, which means that there is an abundance of fishers in relation to the number of fish that are available to be caught and the amount of time that can productively be spent fishing. Second, this excess of idle fishers presents states with an opportunity to hire these individuals as part-time militia, or, alternatively, to disguise militia members as fishers. Third, the existence of illicit activity related to illegal, unreported, and unregulated (IUU) fishing creates a need for states to enforce their fishing regulations and protect their fishers, which creates opportunities for states to assert that disputed maritime territory falls under their jurisdiction by apprehending foreign fishing boats. Fourth, the need for effective laws and regulations to combat IUU fishing and to sustainably manage fishery resources grants states an opportunity to strategically enact domestic legislation covering contested waters, resulting in additional occasions for law enforcement activities directed toward IUU fishing that may further establish control and legitimate claims. In short, amid the problems and disorder created by the tragedy of the commons, states can craft strategies that maintain ambiguity about their intentions as well as about the identities and motivations of the non-state actors involved, enabling them to bolster their sovereignty claims by establishing *de facto* control over contested waters.

This article contributes to the existing literature in several ways. First, although some have argued that cooperation on issues of “low politics” such as fisheries cooperation can generate the trust needed to cooperate on matters of “high politics” such as territorial disputes, this article demonstrates that cooperative efforts



on fisheries management have not ameliorated political tensions (Franckx 2012). Instead, states have simultaneously pursued both cooperative and non-cooperative strategies, and as tensions over territorial disputes have intensified, it has become more difficult for states to pursue cooperative strategies. Second, it shows that the tragedy of the commons can be both a challenge and an opportunity for states. The situation may have tactical benefits for states who wish to leverage its resultant problems and ambiguities as part of a national strategy, a finding that is not commonly discussed in the existing literature on commons management. Third, the article synthesizes insights from political economy, human security, non-traditional security, and traditional security to illuminate the complex economic-security nexus of fishing in the South China Sea. In doing so, it demonstrates that easing of tensions and more effective fisheries governance in the South China Sea will require a multifaceted policy approach that addresses both economic and security concerns. It is not sufficient to address interstate governance of the waters; states also need to address domestic economic conditions and policies that make fishers desperate to fish and that make people desperate for employment as fishers.

The article begins with a brief overview of the contested geography of the South China Sea to lay the groundwork for the subsequent analysis of the drivers of overfishing and resource depletion in the South China Sea, drawing on literature from multiple disciplines to demonstrate the linkages across issue areas. The article then discusses cooperative and non-cooperative responses to these issues from the states bordering the South China Sea. It shows that while states have recognized the importance of fish stocks as a common pool resource and tried to come to a variety of agreements, they have also attempted to leverage the situation to support their territorial claims. The conclusion of the article briefly summarizes the findings and discusses implications for scholarship and policy related to regional fisheries governance, as well as for the understanding of commons management more broadly.

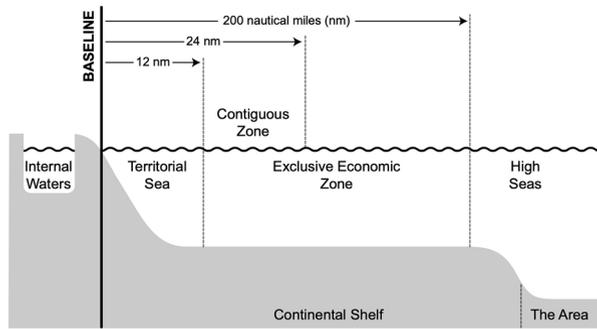
## The contested geography of the South China Sea

The maritime domain is governed by a patchwork of customs and treaties that has evolved over centuries. In response to emerging interstate conflicts over the use of the oceans and their resources, the three United Nations Conferences on the Law of the Sea in 1958, 1960, and 1983 codified existing international law into a treaty regime that entered into force in 1994. The resulting UN Convention on the Law of the Sea (UNCLOS) clarified the limits of internal waters, territorial seas, contiguous zones, exclusive economic zones (EEZs), continental shelves, and the high seas. These legal boundaries are illustrated in Fig. 1.

UNCLOS regulates matters related to the application of state sovereignty, including the fishing rights of states in specific maritime zones (National Oceanic and Atmospheric Administration 2023a; Fletcher School of Law and Diplomacy 2017; Bernard 2016). Coastal states can claim and exercise sovereignty over a *territorial sea* that extends up to 12 nautical miles from its baseline, including regulating and exploiting fisheries. States may also establish a *contiguous zone* from the outer edge of the territorial sea to a maximum of 24 nautical miles from the baseline, wherein



**Fig. 1** Legal boundaries of the oceans. *Source:* adapted by author from Fletcher School of Law and Diplomacy (2017)



they can exercise the control necessary to prevent and punish infringement of laws and regulations within their territory or territorial sea. Beyond that, states may claim an *exclusive economic zone* that extends 200 nautical miles from the baseline, in which they have the exclusive right to exploit or conserve any living resources such as fish or non-living resources such as oil and gas. However, the EEZ is not an extension of the sovereignty of coastal states from their territorial seas. Coastal states' jurisdiction is limited to natural resources as specified in UNCLOS; otherwise, any state has the right to exercise high seas freedoms in another state's EEZ. Beyond the EEZ, on the *high seas*, living resources such as fish are available for exploitation by any vessel from any state, though UNCLOS encourages regional cooperation to conserve those resources and ensure their sustainability. Underneath the water column, there are different distinctions drawn for the seabed. There are various methods of calculating the boundaries of a *continental shelf*, which is a natural seaward extension of a land boundary; within a claimed continental shelf, a coastal state has economic rights only to non-living resources and sedentary living resources such as shellfish, while other states can harvest non-sedentary living resources such as fin-fish, lay submarine cables and pipelines, and conduct marine research. The seabed beyond the continental shelf is known as *the Area*, whose resources are the common heritage of mankind according to UNCLOS Article 136 (United Nations 1982).

Despite these clarifications, however, the UNCLOS regime left some areas of ambiguity, and disagreements remain about the definition of specific areas of maritime space. The South China Sea is one of the areas where these persistent disagreements have been most visible in recent years. The area contains a combination of international and territorial waters, as well as overlapping exclusive economic zones that are subject to dispute. Brunei, China, Indonesia, Malaysia, the Philippines, Taiwan, and Vietnam have conflicting claims over various maritime features and areas of water. While some parties base their claims on provisions of UNCLOS, others appeal to historical rights. China claims that it has “indisputable sovereignty over the islands in the South China Sea and the adjacent waters, and enjoys sovereign rights and jurisdiction over the relevant waters as well as the seabed and subsoil thereof” (Permanent Mission of the People's Republic of China 2009a, b) based on history; the claim is depicted visually as what is often referred to as a “nine-dash line.” This nine-dash line—and Taiwan's similar “eleven-dash line”—covers



roughly 62% of the sea (United States Department of State 2014), overlapping with the 200-nautical-mile EEZs that Brunei, Indonesia, Malaysia, the Philippines, and Vietnam are entitled to claim under UNCLOS. The China-occupied Paracel Islands are claimed by China, Taiwan, and Vietnam. China, Taiwan, and Vietnam claim all of the over 100 Spratly Islands, while Brunei, Malaysia, and the Philippines claim some of them; Vietnam occupies more of the Spratly features than any other country (Vuving 2016). In 2012, China took control of Scarborough Shoal, which is also claimed by the Philippines and Taiwan.

Overall, five claimants—China, Malaysia, the Philippines, Taiwan, and Vietnam—occupy nearly 70 disputed reefs and islets spread across the South China Sea, and they have collectively built more than 90 outposts on these features (Asia Maritime Transparency Initiative 2023). The intentional alteration of existing geographical features through land reclamation and artificial island building—most extensively by China—has complicated the situation in the South China Sea over time (Davenport 2018). Artificial islands do not generate maritime entitlements, particularly if land reclamation occurs after a dispute crystallizes between parties; however, the construction of buildings, radars, and aircraft hangars on these features can enable states to operate in and control the surrounding areas more effectively, which impacts fishing and other activities.

This brief overview of the contested geography of the South China Sea conveys a sense of the complex and overlapping claims that are present in the area, both on land and at sea. There are high stakes in these claims. In addition to being the home of valuable fish stocks, an estimated \$5 trillion in trade passes through the South China Sea, including much of the world's oil and gas. The area's estimated value is further increased by potential oil and gas deposits that may lie beneath its waters. Freedom of navigation through this strategically important area by air and by sea is also critical. Therefore, there are a diverse set of state and non-state actors with interests in the legal definitions of boundaries in the South China Sea and the resources contained therein.

## **Political, economic, and security drivers of overfishing and resource depletion**

This section analyzes the ways that political, economic, and security factors have driven overfishing and resource depletion in the South China Sea. It combines a political economy perspective, which sheds light on the incentives that drive individuals and governments to pursue fishing beyond sustainable levels (Ásgeirsdóttir 2008; Bailey et al. 2010; Hannesson 2011; Grønbaek et al. 2018), with both human security and non-traditional security approaches. The human security framework focuses on the threats that individuals face from a broader range of sources, including dimensions such as economic security, food security, health security, environmental security, personal security, community security, and political security (United Nations Development Programme 1994). Many of these issues also fall within the umbrella of “non-traditional security,” which encompasses the effects of non-military threats on the security of both the state (i.e., its sovereignty



or territorial integrity) and the people (i.e., their survival, well-being, and dignity) (Caballero-Anthony 2008). Overfishing and resource depletion are driven by attempts to ensure economic security and food security, producing negative impacts on the environmental security of the South China Sea as well as the personal security of individuals who become victims of forced labor or other fisheries crimes. These problems in turn pose difficult non-traditional security challenges for states who must cope with environmental degradation and transnational crime. An integrated examination of the political, economic, and security factors that drive fishing in the South China Sea is necessary to understand the ways that states have reacted to these issues through both cooperative and non-cooperative strategies.

From a political economy perspective, fish stocks are an example of a common-pool resource—a hybrid between a public good and a private good—because they are non-excludable and rivalrous (see Table 1). Fish move freely across maritime boundaries, and overfishing by some can deplete the number of fish available to others. Particularly in the South China Sea, most fishery resources are either shared stocks that migrate across the EEZs of multiple states or they are highly migratory species such as tuna. Overfishing or regulatory changes within one country's borders inevitably affect other countries. Consequently, it is impossible for states to prevent the depletion of fish stocks without joint management and regulation. The incentive structure for the use of common-pool resources has often been modeled as a Prisoner's dilemma, wherein the dominant strategy is for actors to overexploit resources for their own gain at the expense of the collective good (Zhang 2021). Consequently, the combined result of many individual fishers' decisions to maximize their catch is a classic tragedy of the commons, which has led to a depletion of fish stocks in the absence of effective management to overcome these incentives (Hardin 1968).

These management issues are critically significant due to the vital role that the fishing industry plays in the economies of countries surrounding the South China Sea, as well as its impact on the food security and economic security of local populations. The Asian region contributed 47% of aquatic products for human consumption in 2020, with China, Vietnam, India, and Thailand ranking among the top six fishery exporters in the world (Food and Agriculture Organization of the United Nations 2022). In addition to their importance for export, the fishery products of the South China Sea play a critical role in regional food security, helping to ensure that people have physical and economic access to basic sustenance. The populations of China and Southeast Asia rely heavily on fishery products as a source of animal

**Table 1** Types of goods

	Excludable	Non-excludable
Rivalrous	Private goods (clothes, food, consumer goods)	Common-pool resources (fish, timber, coal)
Non-rivalrous	Club goods (cable TV, private parks)	Public goods (air, national defense)



protein that is relatively cheap and accessible. For example, ASEAN's per capita annual fish consumption in 2013 was the highest in the world at 35.2 kg, and fishery products account for 21% of animal protein in the Chinese diet (Zhang 2018). This reliance will increase in the future as the populations of these countries continue to grow.

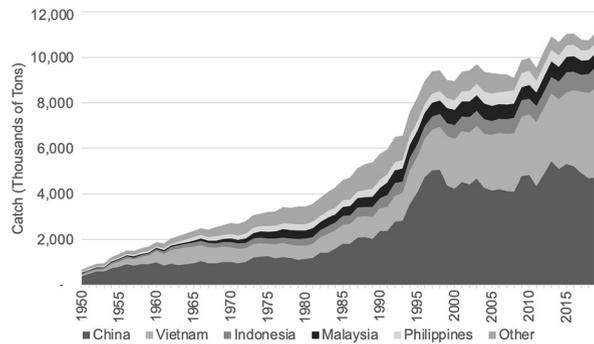
In addition, the fishing industry plays a critical role in the economic security of many individuals in the region, providing them with a basic income that would otherwise be difficult to come by. 3.7 million people are officially employed in fishing the waters of the South China Sea and millions more make their living from the sea in an indirect manner, such as processing of fishery products (Varley et al. 2020). In China alone, there are roughly 10,000 processing companies—the largest fishery processing sector in the world—and the fisheries and marine foodstuffs industries are estimated to provide nearly 14.5 million jobs (Baker et al. 2016). These indirectly related industries are also an important source of employment for women (Harper et al. 2013).

Moreover, the importance of the fishing industry to local employment leads governments to see the industry's welfare as linked to their political legitimacy. This incentivizes governments to heavily subsidize fishing, with many subsidies dedicated to increasing fishing capacity. Research has shown that capacity-enhancing subsidies exacerbate overcapacity and overfishing by reducing the cost of fishing or increasing the revenue received by fishers (Martini and Innes 2018; Sumaila et al. 2019). Data on fishing subsidies reveal that a large percentage of government subsidies go to the large-scale industrial fishing subsector in the form of capacity-enhancing subsidies. Asia as a region accounts for over half of global fishing subsidies, with China alone contributing about 21% (Schuhbauer et al. 2020). These subsidies come not only from national governments but also from the subnational governments of provinces or states who have been granted varying degrees of local autonomy over fishing-related policy, as in the case of China's Hainan, Guangdong, and Guangxi Provinces and Malaysia's Sabah and Sarawak states (Zhang and Bateman 2017; Li 2019). These subnational governments often have their own strong economic interests in the maritime economy and can play an active role in defining national policy. Although some governments have attempted to reduce subsidies in recent years to incentivize some fishers to leave the industry, the complexity of subsidy policies means that even though governments may implement changes with an eye to sustainability, policy incoherence can limit overall progress (Yi 2018). For example, although China has made sustainability-related changes in its national fisheries policies, continued support for its distant water fishing industry leads to unsustainable practices in the EEZs of other countries, including in the South China Sea (Mallory 2016).

The combination of these subsidies, demand for fishery products for consumption, and demand for employment in the fishing industry has contributed to the depletion of fish stocks in the South China Sea over time (Pauly and Liang 2020). Total stocks are estimated to have been depleted by 70–95% since the 1950s, and research has shown that catches have stagnated over the last several decades, as shown in Fig. 2. There have also been broader deleterious effects on environmental security in the area, such as decreases in biodiversity and the destruction of coral



**Fig. 2** Catches by fishing entity in the waters of the South China Sea (1950–2019). *Source:* compiled by author from Pauly, Zeller and Palomares (2020)



reefs. For example, the South China Sea's shallow-water reef habitats have been damaged by the illegal poaching of giant clams, which clean the water of pollutants and provide a home for seaweeds, sea sponges, snails, and slugs and protection for young fish (Bale 2016). Research has also shown that reefs in the Spratly Islands archipelago that have been degraded or killed by island building and overfishing produce less fish and coral larvae for those downstream (Wolanski et al. 2020). These developments negatively impact the environmental security of the area and of its local populations, which creates problems for states and for human beings who rely on a healthy physical environment for their own well-being.

In addition to environmental degradation, declining fish stocks have intensified economic pressures in ways that exacerbate transnational crime in the area. Illegal, Unreported, and Unregulated (IUU) fishing has emerged as a major problem in the South China Sea. IUU fishing refers to a broad range of activities (National Oceanic and Atmospheric Administration 2023b). *Illegal fishing* refers to activities that violate national, regional, and international laws and regulations. *Unreported fishing* refers to activities that are not reported or misreported to authorities in contravention of laws and regulations. *Unregulated fishing* occurs in areas where there are no applicable conservation or management measures in ways that are not consistent with international law. Unregulated fishing also occurs in areas that are managed by Regional Fishery Management Organizations (RFMOs) when non-compliant fishing activities are conducted by vessels without nationality or by vessels flying a flag of a non-RFMO member. IUU fishing threatens the ecosystem, undermining sustainable fisheries management and further depleting fish stocks.

IUU fishing is also linked to broader categories of fisheries crimes and other transnational organized crimes that pose serious non-traditional security challenges for states. *Fisheries crime* includes activities such as human trafficking, fraud, drug trafficking, corruption, tax, and customs evasion (de Coning and Witbooi 2015; Witbooi et al. 2020). Southeast Asia is a central location for trafficking persons for forced labor into the fishing industry (Yea 2022). Some studies have shown that declining fish stocks push fishers into using their vessels and crews for these crimes and for piracy, while others point out that organized criminals may be using fishing vessels as disguises (Rosenberg 2009; Mackay et al. 2020). Survey data from formerly trafficked fishers from Myanmar, Cambodia, Laos, and Thailand showed



that trafficking victims were misled about the nature of their jobs and tempted by the lack of legal documentation required to work with fishing companies and the potential to save money while at sea (Chapsos and Hamilton 2019). The ambiguity surrounding IUU fishing enables these threats to individuals' personal security while also creating complex law enforcement challenges for states.

## States responses and strategies

This complex intersection of political, economic, and security issues has been met with varying responses from states over time. The fisheries crisis in the South China Sea pre-dates the recent escalation of territorial tensions between states, and there have been some attempts by bordering states to cooperate on fisheries governance, though less so than in comparison with other regions of the world. As disagreements over territorial boundaries have intensified, however, joint management of fish stocks has become even more difficult politically. Moreover, aside from merely a failure of cooperation, states have in some cases exploited the tragedy of the commons and its accompanying ambiguity to craft gray zone or hybrid strategies to establish control over contested waters. This section proceeds by first discussing the existing arrangements for interstate fisheries cooperation in the South before examining non-cooperative state strategies blending crime and conflict.

### Cooperative strategies: avoiding the tragedy of the commons

Due to the importance of fish stocks to local populations and economies and due to their nature as common pool resources, states have ample reason to cooperate with one another to try to overcome the tragedy of the commons and to preserve fish stocks. There are several broad multilateral arrangements that are relevant to the South China Sea. The area is a semi-enclosed sea, which is covered by Part IX of UNCLOS, and UNCLOS provides some guidance on fisheries. For example, Part IX Article 123 specifies that states bordering an enclosed or semi-enclosed area should: (1) coordinate on the management, conservation, exploration, and exploitation of the living sea resources; (2) coordinate rights and duties regarding protection and preservation of the marine environment; (3) coordinate scientific research; and (4) involve other states and international organizations in this process. Fisheries disputes may be referred to special arbitration under Annex VIII of UNCLOS. However, these provisions have not been sufficient to facilitate fisheries management in the South China Sea. There are several other binding and voluntary international fisheries management instruments that address IUU fishing and other fisheries issues. For example, the Food and Agriculture Organization (FAO) Compliance Agreement calls on states to ensure compliance with international conservation and management measures, while the UN Fish Stocks Agreement sets out principles for the conservation and management of straddling and highly migratory fish stocks (Pedrozo 2022). However, not all the states bordering the South China Sea are party to them, which challenges their effectiveness in the area.



In addition to these broad agreements, there are several regional arrangements dealing explicitly with fisheries that also engage some of the relevant countries bordering the South China Sea. The Southeast Asian Fisheries Development Center (SEAFDEC) is an autonomous intergovernmental body established in 1967 to develop and manage potential fisheries among ASEAN countries (George 2012). SEAFDEC membership also includes Japan, which originally made substantial financial contributions to the partnership; ASEAN and SEAFDEC established the ASEAN-SEAFDEC Fisheries Consultative Group in 1998. The Asia-Pacific Fishery Commission (APFIC) was established in 1948 by the UN FAO to promote full and proper use of living aquatic resources in the region from the Indian Ocean to the Pacific Ocean. Its 21 members include China, Indonesia, Malaysia, the Philippines, and Vietnam. The Regional Guidelines for Responsible Fisheries in Southeast Asia were established in 2003 as an outgrowth of the Code of Conduct for Responsible Fisheries (CCFR), which was developed by the UN FAO. Signatories to these non-binding guidelines include Brunei, Cambodia, Indonesia, Philippines, Thailand, Malaysia, Myanmar, and Vietnam. The ten ASEAN countries and Australia are also parties to the Regional Plan of Action to Promote Responsible Fishing Including to Combat Illegal, Unreported, and Unregulated Fishing (RPOA-IUU) (*Regional Plan of Action to Promote Responsible Fishing Including to Combat Illegal, Unreported, and Unregulated Fishing*, 2023). The Declaration on the Conduct of the Parties in the South China Sea and the ASEAN Declaration on the South China Sea both mention regional coordination on marine environmental protection. Therefore, there are venues in which some of these countries can discuss potential cooperation, but none of these arrangements comprehensively or specifically address the fisheries issues of the South China Sea. Moreover, many of these arrangements are focused more on technical support than on management, which limits their ability to address challenges such as IUU fishing (Williams 2013).

There have been some attempts among states bordering the South China Sea to sign bilateral agreements with one another, but progress has been relatively modest. In 2000, China signed the Gulf of Tonkin Fishery Agreement with Vietnam, which was followed in 2004 by the signing of the Supplementary Protocol to the Fishery Agreement and the Regulations on Conservation and Management of Fishery Resources in the Common Fishery Zone of the Gulf of Tonkin. These agreements facilitated some fisheries cooperation between China and Vietnam, though they did not cover any disputed territory and faced various implementation problems (Kardon 2015; Amer and Li 2020). The Gulf of Tonkin agreement expired in 2020. Other bilateral fisheries agreements have been signed between China and Indonesia (2001), Thailand and Indonesia (2002), China and the Philippines (2004), Indonesia and the Philippines (2006), Vietnam and Indonesia (2010), and Malaysia and Indonesia (2012). These agreements were signed without delimitation of a marine boundary, which enables important cooperation but also restricts this cooperation to general fisheries issues in cases where the geographical scope is unclear, meaning that their significance for the governance of the South China Sea has been constrained (Huang and Vuong 2016).



There have also been ad hoc attempts by these countries to cooperate on fisheries issues with limited results. There are 130 Marine Protected Areas in the South China Sea, but they cover only roughly 2% of its area (Marine Conservation Institute 2021). There have even been sporadic bids for cooperation among states with competing territorial claims. For example, after the arbitral tribunal adjudicating the Philippines' case against China in the South China Sea ruled in favor of the Philippines, China reacted very negatively; however, even after the ruling, China held talks with the Philippines, Indonesia, Malaysia, Vietnam, and other Southeast Asian countries about shared rights to fish in the area. At some points, tensions appeared to be easing between China, Vietnam, and the Philippines around Scarborough Shoal (Petty 2017). In 2018, China and the Philippines were once again reported to be discussing a joint fishing agreement (Jennings 2018). However, little has come of these kinds of negotiations, and as tensions have increased over the years between claimant countries, it has become more difficult to pursue cooperative solutions to fisheries management.

### **Non-cooperative strategies: exploiting the tragedy of the commons**

A different set of state strategies has sought to exploit the conditions associated with the tragedy of the commons to bolster sovereignty claims, leveraging the disorder created by the shortcomings of fisheries regulation to establish control over contested waters. In particular, the problems presented by transnational crimes related to fishing create ambiguity about the identity of perpetrators as well as would-be enforcers of regulations, enabling states to blur the lines between private actors and government actors as well as between civilian law enforcement activities and military activities. It should be emphasized that states may be simultaneously using cooperative and non-cooperative strategies—it is not necessarily the case that states are actively trying to sabotage effective fisheries management, but, in some cases, the absence of such governance presents strategic opportunities. Similarly, fishers, companies, and subnational governments are not necessarily passive tools of government policy; they may support or undermine central state strategies to varying extents due to the political, economic, and security factors presented in the first section of this article. This section presents several mechanisms through which the conditions associated with the tragedy of the commons enable states to put fishers and fishing regulation on the frontlines of defending their territorial claims in the South China Sea.

These non-cooperative strategies have been discussed as part of a growing literature on “gray zone” or “hybrid” strategy. The definitions of these concepts and their analytical utility have been debated, but many scholars and policymakers now commonly use them to characterize a growing set of behaviors that are seen in the South China Sea (Mazarr 2015; Jackson 2017; Erickson and Martinson 2019). Gray zone strategy has been defined as an effort or series of efforts designed to achieve security objectives without direct and sizable use of force, including through use of proxies, covert military operations, and paramilitary activity (Green et al. 2017, p. 21). Similarly, hybrid strategy has been defined as an integrated combination of



conventional and unconventional means and overt and covert activities by both state and non-state actors, including military, paramilitary, irregular, and civilian actors to achieve geopolitical goals (Ducaru 2016). A major distinction between the two concepts is that gray zone strategy is generally discussed as excluding military escalation, while hybrid strategy includes overt conflict as well as lower-level clashes (Patalano 2018). For the purposes of this article, the differences between these two ideas are less important than their similarities. The main utility of these concepts is the way that they link state strategy to the confusion and ambiguity associated with the tragedy of the commons in the South China Sea, enabling states to utilize fishers and their associated maritime activities to support sovereignty claims in select situations.

First, the structure of incentives surrounding fish stocks as a common-pool resource results in a tendency toward overfishing and overcapacity, which means that there is an abundance of fishers in relation to the number of fish that are available to be caught and the amount of time that can productively be spent fishing. Due to the factors that were discussed in the first part of this article, more than half of the world's fishing vessels operate in the relatively small area of the South China Sea. This excess supply of fishers presents states with the opportunity to leverage the large numbers of these actors as part of their strategies to establish control of maritime space. This may occur either through the incidental agglomeration of fishing vessels going about their business or through intentional mobilization by the state for this purpose.

For example, there have been cases when states have engaged in “fishing nationalism” by purposefully deploying fishers in large numbers to swarm a disputed zone (Salleh 2020). In April 2019, the Philippines lodged a diplomatic protest against the presence of hundreds of Chinese vessels in the vicinity of Pag-asa Island (Viray 2019). The Philippines filed 83 such protests about large numbers of Chinese ships between June 2016 and May 2021 (Perez-Rubio 2021). Similarly, Indonesia sent its fishers to the Natuna Islands as part of a presence mission in 2020 (Widianto 2020). The presence of these civilian fishers in large numbers serves multiple purposes of exploiting fishery resources, establishing control, and claiming ownership.

Second, the abundance of fishers in the face of declining fish stocks also presents the state with an opportunity to hire these individuals as part-time militia, or, alternatively, to disguise militia members as fishers. The dual identities of these fishers-turned-militia make them ideal instruments of a gray zone or hybrid strategy because they can act to pursue their state's territorial claims, yet their actions can be framed as private, albeit potentially criminal. A state can claim that these fishers are simply private individuals acting of their own accord in an overcrowded maritime environment. This strategy takes advantage of a gap in the law of naval warfare, which protects coastal fishing vessels from capture or attack unless they are integrated into the enemy's naval force (Kraska and Monti 2015). When compared to activities conducted by state entities, the deeds of militia members are less likely to trigger military retaliation or outside intervention by a country like the USA. While maintaining plausible deniability, the state can use these intermediaries to swarm, harass, sabotage, escort, and conduct intelligence, surveillance, and reconnaissance activities. In addition to recruiting idle fishers,



states can also actively build militia forces through specific subsidies or more direct means. The tragedy of the commons creates a combination of economic need on the part of fishers and plausible deniability on the part of the state that can be exploited as an effective national strategy for advancing territorial claims.

For example, China's People's Armed Forces Maritime Militia has been described as "a key instrument Chinese leaders use to defend and advance the country's maritime claims" (Kennedy 2019, p. 168). The Chinese central and subnational governments have used a wide range of programs to bolster the militia, including subsidies for: fuel; construction of fishing and professional maritime militia vessels; communications, navigation, and safety equipment; militia operations; maritime militia personnel; and recruitment of veterans (Li 2019; Poling et al. 2021). Some subsidies have been focused specifically on encouraging activity by fishing vessels in disputed Spratly waters (Poling et al. 2021). In its 2010 defense white paper, China claimed to have 8 million primary militia members (Information Office of the State Council of the People's Republic of China 2011). This force is becoming, "a key lever for peaceful power projection in the region...a powerful non-forcible method of coercion to dominate the seascape without the risk of open conflict" (Kraska and Monti 2015). For example, remote sensing data indicate that roughly 300 Chinese militia vessels are active near the contested Spratly Islands on a regular basis (Poling et al. 2021), which serves the function of asserting Chinese sovereignty in the area (Martinson 2021). The Chinese maritime militia has also been increasingly involved in aggressive operations, such as China's seizure of the Scarborough Shoal in 2012 and their deployment to protect the *Haiyang Shiyou* 981 oil rig in Vietnamese waters during the 2014 China-Vietnam oil rig crisis.

Vietnam's maritime militia and self-defense force is also active in the South China Sea. Similar to the case of China, Vietnam's history of "people's war" and its centralized state helped enable it to create and sustain a military militia, which plays a key role in its ideology of "all-people national defence" (Ministry of National Defence, Socialist Republic of Vietnam 2023; Steeds 2022). Vietnam particularly began to institutionalize and develop its militia in the late 2000s in response to increasing Chinese maritime assertiveness. However, in comparison with China, Vietnam's militia force is much smaller and its financial and human resources are more limited. Its militia size is estimated to be around 6700 people spread across around 8000 vessels (Nguyen 2020, 2022). Specifically, the Vietnamese government has invested significant resources to build strong forces in key strategic areas such as Da Nang, Khanh Hoa Province, and Quang Ninh Province. This militia participates in maritime law enforcement and emergency rescue, conducts surveillance, and may also engage in "sovereignty assertion" activities such as operating in contested waters (Cui 2022). For example, during the 2014 China-Vietnam oil rig crisis, dozens of Vietnamese boats surrounded the area to assist the coast guard in the standoff in response to encouragement from then-president Truong Tan Sang and the state-sponsored Vietnam Fisheries Society, though there was no official call to action from the Vietnamese government (Nguyen 2018). However, these efforts were not successful, and analysts emphasize the continuing weakness of Vietnam's militia and its defensive and reactive approach in comparison with that of China.



Third, the existence of illicit activity related to IUU fishing creates a need for states to enforce their fishing regulations or protect their fishers from malign actors in a chaotic environment. This presents states with opportunities to assert their rights to contested areas using their law enforcement forces, by apprehending foreign fishing boats to bolster the legitimacy of their territorial claims to an area and thereby asserting that an area falls under the jurisdiction of their national laws. For example, between 2014 and 2019, Indonesia sank at least 488 foreign boats—including 276 Vietnamese-flagged vessels—that were allegedly involved in illegal fishing (Radio Free Asia 2019). This was part of a “Sink the Vessels” policy by the Indonesian Ministry of Marine Affairs and Fisheries intended to secure Indonesia’s maritime sovereignty (Anggraini et al. 2018). While many of these vessels may have been operating illegally, the illegality of their actions is related to the question of who owns the waters in which they were apprehended; the disorderly fishing environment in the South China Sea presents an opportunity for states to send constabulary forces to patrol contested waters to establish control. However, critics point out that Indonesia’s policy itself was in violation of international law, since Article 73 of UNCLOS allows a state to board, search, arrest, and initiate prosecution of an infringing vessel, but “penalties for the violation do not include imprisonment or any form of corporal punishment” (Nguyen 2021).

A state’s need to protect its own civilian fishers can also be used as a justification for sending law enforcement or military vessels to disputed areas as escorts. For example, for several weeks beginning in late December 2019, four China Coast Guard vessels and one provincial-level China Marine Surveillance ship from Hainan accompanied the Chinese fishing fleet during its operations through the EEZs of Brunei, Malaysia, and Indonesia, prompting Indonesia to threaten to send warships along with its own fishers (Asia Maritime Transparency Initiative 2020). The Philippine Coast Guard has also escorted and monitored Filipino fishers in the West Philippine Sea during China’s annual fishing ban (Fernandez 2022), which is further discussed below.

Fourth, the need for effective laws and regulations to combat IUU fishing and fisheries crimes and to sustainably manage dwindling fishery resources grants states an opportunity to strategically enact domestic legislation covering contested waters. This has the effect of creating a domestic legal basis for action and generating additional occasions for law enforcement activities directed toward IUU fishing that may further establish control and legitimate claims. For example, China has imposed a unilateral ban annually since 1999 on fishing in the Bohai Sea, the Yellow Sea, the East China Sea, and the waters north of 12 degrees latitude in the South China Sea. Officially, the ban is part of China’s efforts to promote sustainable marine fishery development and marine ecology (People’s Daily 2022). However, Vietnam and the Philippines have strongly protested this ban, arguing that it violates their sovereignty and goes beyond China’s legitimate maritime claims (Reuters 2022, 2023). Furthermore, the ban is enforced by China’s coast guard, which again frames the area as one that is under China’s sovereign jurisdiction. However, both Vietnam and the Philippines have allowed and even encouraged their fishers to violate China’s ban (Chau 2020; Jennings 2021). These domestic laws can be understood as a type of targeted subversion of UNCLOS rules for demarcating territory, since they contravene the



rules in a specific geographic area without attempting to change the overall rules of UNCLOS that benefit the state in other parts of the globe (Govella 2021).

Another example was the passage of new regulations by China's Hainan Province in 2013 with the stated purpose of securing and protecting fishery resources. These domestic regulations covered areas where China's territorial claim overlaps with the claimed EEZs of Vietnam and the Philippines, creating concern about provisions that would require foreign ships to seek approval from Chinese authorities or risk being seized or fined (Ho 2015). Hainan decided to enact these regulations in order to pursue its own interests in energy resources, fishery resources, and expanded domestic influence without consulting the central government in Beijing in advance (Li 2019). In doing so, Hainan's subnational government asserted Chinese interests in the South China Sea on its own, shaping the policies of the country as a whole and impacting China's relations with neighboring states (Wong 2018).

Domestic policies related to coast guards have similar effects of enabling states to establish control and legitimate their claims to contested territories. The South China Sea has undergone a process of "coast-guardization" whereby maritime law enforcement agencies have been increasingly used as state proxies for reinforcing sovereign claims (Hsiao 2020). China, Indonesia, Malaysia, Thailand, Vietnam, and the Philippines have made various upgrades to their coast guards' capacities and mandates to enhance their maritime roles (Bekkevold 2019). In the 2010s, the coast guards of China, Malaysia, the Philippines, and Vietnam grew roughly 73%, 62%, 103%, and 231%, respectively, in terms of tonnage (Hsiao 2020). China's 2021 coast guard law attracted much attention because it mandated the Chinese Coast Guard to protect its claimed maritime boundary and granted it greater ability to use force to evict foreign vessels, including warships, which created concerns that these law enforcement vessels could be used to take advantage of gaps between other countries' military and civilian law enforcement capabilities (Ishii 2021). Since law enforcement vessels are often called to engage with fishers and fisheries crimes, the strengthening of these coast guards and related legislation is intertwined with and legitimated by the need to regulate fishing.

These four mechanisms link the tragedy of the commons to states' strategies in the South China Sea. While gray zone or hybrid strategies can be used in absence of misaligned fishing incentives, the disorder created by the latter enables the use of these strategies more frequently and on a larger scale. The ambiguity about actions and actors that exists in this situation can enable states to challenge the status quo without resorting to war. Fishers and their vessels have the potential to become one part of a state's broader hybrid strategy of mobilizing paramilitary, constabulary, and military means to achieve geostrategic objectives. In some cases, these strategies are not necessarily elevated to the level of "grand strategy," in the sense that they do not map onto a long-term plan by which a state seeks to further its national interests. In the case of China, the development of maritime power has been regarded as a "central tool of statecraft heralding the country's ascendancy to the world stage," which may account for China's prominent use of gray zone and hybrid strategies (Patalano 2018, p. 831). However, the story is often more complicated, since a large number of actors—including fishers, companies, and subnational governments—are involved in fisheries governance (Wong 2018; Li 2019).



The intersection of non-cooperative state strategies and the tragedy of the fishing commons have had negative impacts on the South China Sea, leading to the proliferation of gray zone conflict and increased risk of accidents due to the increasingly congested and contested maritime environment. Another unfortunate side effect is that fishing has become securitized and militarized in a way that inhibits interstate cooperation on fisheries management and complicates potential solutions that might help to mitigate the tragedy of the commons. Securitizing fishing, which is generally seen as a routine commercial activity, has raised public awareness and attracted additional resources by linking it to matters of national interest. However, as fisheries discussions have become increasingly dominated by the militia narrative, fishery incidents have been linked to sensitive military activities and controversial territorial disputes, which has made it more difficult to states to pursue cooperative strategies (Zhang and Bateman 2017). Moreover, the non-cooperative strategies discussed in this section interact with and mutually influence the political, economic, and security factors discussed in the first half of the article, often exacerbating preexisting problems.

## Conclusion

What factors have driven the dramatic depletion of fishery resources in the South China Sea? How have countries bordering the South China Sea responded to the need for rules to sustainably manage fish stocks and govern fishing practices in the area? This article has argued that a complex mix of political, economic, and security drivers has led to the fishing crisis in the South China Sea in the fashion of a classic tragedy of the commons. While states have attempted to cooperate through bilateral, regional, and international arrangements, the article demonstrated that the tragedy of the commons also creates conditions that enable states to employ hybrid or gray zone strategies that blur the lines between private and public actors and between law enforcement and military activities. Amid the coordination problems and transnational crime related to inadequate fishing regulation, states can bolster their sovereignty claims by using fishers and fishing vessels to establish de facto control over contested waters.

This article shows that states have simultaneously pursued both cooperative and non-cooperative strategies over the past several decades. Despite theories that suggest that cooperation on issues of “low politics” should generate the trust needed to cooperate on matters of “high politics,” cooperative efforts on fisheries management have not ameliorated political tensions in the South China Sea. Instead, as tensions over territorial disputes have intensified and as fishing issues have become increasingly securitized, it has become more difficult for states to pursue cooperative strategies, though state and non-state actors are continually trying to find solutions to manage and conserve essential fisheries resources.

The article contributes to the existing literature by connecting the logic of commons research to the problems of international relations. The classic literature on commons management has much to offer in terms of understanding actors’ incentives, collective action challenges, and problems related to externalities. These



dynamics help to explain the rise of overfishing, IUU fishing, and fisheries crimes over time. However, while most analyses have focused on the challenges of overcoming barriers to collective action, there has been less attention to the fact that, in some cases, lack of coordination can provide unanticipated advantages for states. The problems of the commons are often conceptualized at the level of individual incentives, which may differ from incentives at the state level. There also tends to be a focus on one type of issue when calculating costs and benefits of actions, underemphasizing the fact that economic and security issues may be intertwined in complex ways such that disadvantages in one issue area amount to potential advantages in another. Specifically, in the case of the South China Sea, this article has demonstrated the tragedy of the commons may have tactical benefits for states who wish to leverage its resultant problems and ambiguities to pursue their national interests. This analysis helps to explain why states have used a mix of cooperative and non-cooperative strategies over the past several decades.

The article also synthesizes insights from political economy, human security, non-traditional security, and traditional security to illuminate the complex economic-security nexus of fishing in the South China Sea. In doing so, it demonstrates that easing of tensions and more effective fisheries governance in the South China Sea will require a multifaceted policy approach that addresses myriad concerns. It is not sufficient to address interstate governance of the waters; states also need to address domestic economic conditions and policies that make fishers desperate to fish and make people desperate for employment as fishers. Although some have argued that fisheries cooperation can generate the trust needed to cooperate on matters of territorial disputes, this article demonstrates that lack of cooperation on fisheries management has in fact exacerbated political tensions. Moreover, the securitization and militarization of fisheries issues has linked economics and security in ways that are counterproductive for cooperative breakthroughs.

While this article has focused on state strategies, the dynamics discussed involve a multiplicity of actors, each with their own set of motivations. This article has highlighted how these motivations pull in different directions, for individuals versus the state and within the state itself, which sometimes needs to be analytically disaggregated into its constituent parts, such as subnational governments. There are a diverse set of stakeholders involved in fishing issues in the South China Sea, each with their own interests. The resulting mix of actions has led to negative outcomes in the fishery commons that have been difficult to solve due to the challenges of collective action, as well as the fact that the disorder and ambiguity of the situation have been exploited for strategic advantage in some cases. If the governance problems of the fishery commons are to be overcome, states will have to cooperate with other public and private stakeholders. However, the dynamics described in this article are particularly troubling because they complicate the willingness and capacity of states to facilitate cooperation. Ameliorating tensions in the South China Sea requires serious attention to fishing-related issues and an approach that accounts for the multi-dimensional political, economic, and security factors that drive them.

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## Declarations

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