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# Casting a Wider Net

**THE SECURITY IMPLICATIONS  
OF ILLEGAL, UNREPORTED, AND  
UNREGULATED FISHING**

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## Executive Summary

The world's fisheries are on the brink of collapse. The Food and Agriculture Organization of the United Nations (UNFAO) estimates nearly 90 percent are fully exploited or overexploited and depleted, while demand for seafood continues to increase. Faced with this reality, fishing fleets are scavenging the globe to meet the growing demand, and in the process often engage in illegal, unreported, and unregulated (IUU) fishing. These pervasive operations do not just pose a threat to the environment, but also a significant threat to national, regional, and global security. This report details those threats, which are the:

- 1 Threat to ecological security
- 2 Threat to economic security
- 3 Threat to food security
- 4 Threat to geopolitical stability
- 5 Threat of maritime piracy
- 6 Threat of transnational organized crime

The perpetrators of IUU fishing are not just the local fisherman catching a bit more than his quota allows, but include a range of offenders: from foreign vessels fishing illegally in another nation's sovereign waters to criminal networks that participate in a variety of illicit activities, including trafficking in drugs, arms, and humans, as well as utilizing shell companies to launder money and slaves to carry out their operations. For these reasons and many others explored within this report, IUU fishing poses a risk to national security and addressing it will require more effort and focus than can be addressed by the conservation community and natural resource management agencies alone. These threats necessitate countries across the world, and particularly the United States, to develop a whole-of-government strategy to combat IUU fishing. This integrated approach involves tapping into the expertise of agencies across government, including those with knowledge spanning from natural resource management, development, trade and finance, to intelligence gathering and law enforcement, as well as the wide community of stakeholders interested in combating IUU fishing.

*Casting a Wider Net: The Security Implications of Illegal, Unreported, and Unregulated Fishing*, argues that IUU fishing is a threat to national security due to its multivariate impacts on individuals, communities, economies, institutions, and governments. It sets out a series of recommendations that articulate a whole-of-government strategy that the U.S. government and other foreign partners can utilize to curb the impacts of IUU fishing, which are to:

- Create a whole-of-government approach
- Increase engagement of Combatant Commands (COCOMS)
- Expand shiprider agreements between the U.S. and foreign countries
- Encourage countries to ratify, implement, and enforce the Port State Measures Agreement
- Dedicate resources to increase monitoring and enforcement capacities
- Advocate for comprehensive foreign domestic fisheries regulations and catch reporting requirements
- Encourage greater transparency of the fishing industry

- Mandate use of Vessel Tracking Systems (VTS) to track fishing fleets
- Increase data and information collection and sharing
- Increase dialogue and partnerships between the U.S. government, non-governmental organizations, and the private sector

With these recommendations in hand, countries around the globe will be better poised to address the attendant security threats of IUU fishing.

## Glossary

<b>AIS</b>	Automatic Identification Systems
<b>DWF</b>	Distant Water Fishing
<b>EEZ</b>	Exclusive Economic Zone
<b>IUU FISHING</b>	Illegal, Unreported, and Unregulated Fishing
<b>PSMA</b>	Agreement on Port State Measures to Prevent, Deter, and Eliminate Illegal, Unreported, and Unregulated Fishing
<b>NIC</b>	National Intelligence Council
<b>NOAA</b>	National Oceanic and Atmospheric Administration
<b>RFMO</b>	Regional Fisheries Management Organization
<b>SIMP</b>	Seafood Import Monitoring Program
<b>TOC</b>	Transnational Organized Crime
<b>UNCLOS</b>	United Nations Convention on the Law of the Sea
<b>UNFAO</b>	Food and Agriculture Organization of the United Nations
<b>UNODC</b>	United Nations Office on Drugs and Crime
<b>USAID</b>	United States Agency for International Development
<b>USCG</b>	United States Coast Guard
<b>UU FISHING</b>	Unregulated and Unreported Fishing
<b>VMS</b>	Vessel Monitoring Systems
<b>VTS</b>	Vessel Tracking Systems
<b>WTO</b>	World Trade Organization

## Introduction

Across the globe, from the shores of New England to the coast of New Caledonia, millions of people depend on fisheries for their food security and livelihoods. In fact, 17 percent of the world's population relies on fish as their main source of animal protein.<sup>1</sup> In 2014, an estimated 56.6 million people worked in capture fisheries or aquaculture, with marine capture fisheries producing 81.5 million tonnes of fish destined for the global market.<sup>2,3</sup> That is a conservative estimate given new research showing actual fishing is likely two times greater than what is reported.<sup>4</sup>

Commercial fishing is big business, with a complex global supply chain. On any given day, a fish can be caught in East Africa, transported to Asia for processing, and then shipped onward to Europe or the United States, where it eventually makes its way to a consumer's plate. As seafood moves further along the supply chain and further away from where it was originally harvested, it becomes exceedingly difficult to determine whether it was legally caught. Estimates suggest 20 to 50 percent of the global fish catch is either illegally caught, mislabeled, never reported, or from a fishery without any management regime.<sup>5</sup> There is a dire lack of transparency and traceability. Furthermore, the individuals, entities, and networks engaged in illegal fishing enterprises are often as hard to trace as the seafood itself.

IUU fishing is a main culprit in the opacity of the fisheries sector, and persists despite the many rules, regulations, and governing bodies that attempt to curtail the practice. The profits from illegal and unreported fishing are valued at an estimated \$15.5 to \$36.4 billion a year.<sup>6</sup> Yet these striking numbers do not tell the entire story. The illicit nature of IUU fishing activities makes it difficult to understand the full scope of the problem and its attendant impacts on the environment, economy, and security. Furthermore, monitoring and enforcement has been a significant challenge.

Adding further complexity, IUU fishing operations include a wide range of actors, from local fishers operating outside regulations, to regional criminal enterprises, transnational syndicates, and countries that knowingly under-report, or even subsidize such operations. Experts have linked IUU fishing to national and regional political instability, loss of economic prosperity, and growing insecurity. IUU fishing hinders a government's ability to effectively manage fish stocks, which contributes to depleted fisheries, and therefore lost livelihoods, depressed local economies, and food insecurity. While there is much research articulating the ecological impacts of IUU fishing, there has been a dearth of research exploring the socio-economic and political consequences of IUU fishing.

IUU fishing is not simply a conservation and sustainability issue, it is also a national security issue, intertwined with geopolitical stability. IUU fishing creates the potential for destabilization in areas critical to U.S. national security interests, making it imperative for the security community to join efforts to combat it. Food security, economic security, and national and global security all converge around IUU fishing. Illicit networks are known to participate in IUU fishing, such as those linked to piracy and terrorism, as well as trafficking of drugs, arms, and people. These groups often co-opt workers in the legal fishing industry, use fishing vessels to disguise operations, and take advantage of disenfranchised fishers to facilitate their illicit business. IUU fishing is too complex a challenge for the conservation community and the natural resource management agencies to address alone. To effectively curtail IUU fishing around the globe, there is a need for a more multi-dimensional, integrated approach than exists today. Such approach must include the security and development communities, as well as civil society and private industry.

This report provides a case for why the United States must develop a whole-of-government approach to respond to IUU fishing, and outlines this argument by:

- exploring the threat IUU fishing poses to U.S. national security;
- analyzing U.S. government and foreign government responses;
- highlighting the important roles and partnerships of the private sector and nongovernmental community;
- and presenting policy options for the U.S. national security community, and other attendant agencies and departments charged with addressing IUU fishing at home and abroad.

## Environmental Security

Historically, conventional discussions of national security focused on direct threats from other states to the homeland. However, in the face of globalization, national security priorities have expanded to include non-traditional, transnational threats, including cyberwarfare, terrorism, violent extremism, and organized crime. Recently, the national security aperture has widened so far as to include nontraditional threats that arise from any origin. This shift has provided the opportunity for the security community to engage in environmental security issues.

Environmental security is the suite of environmental threats, both anthropogenic and natural, that may harm ecologies, people, communities, or even countries, and has the potential to undermine national, regional, and global security. Experts have identified environmental issues, ranging from water scarcity to resource depletion, as factors contributing to economic disenfranchisement, destabilization, and conflict.<sup>7</sup>

By expanding the traditional understanding of national security to include threats such as environmental security, the United States is better situated to understand and address the associated, underlying problems that contribute to destabilization and insecurity. Preventing conflict from occurring has been at the core of U.S. foreign policy. Therefore, by understanding and addressing environmental security threats early on, the U.S. will be more prepared to avert, mitigate, and resolve conflicts, and better positioned to limit insecurity and instability.

The ocean's health is declining and overfishing is nearly ubiquitous—often carried out by actors operating with impunity. These conditions have serious consequences from an environmental security perspective and should garner the attention of the national security community. The UNFAO estimates that close to 90 percent of stocks are either fully exploited or depleted, and this is likely a conservative estimate due to the illicit nature, pervasiveness, and impacts of IUU fishing.<sup>8</sup> It is therefore difficult to precisely estimate fish populations, and in turn difficult to effectively monitor and manage fisheries, and consequently harder to forecast precisely which regions are on the brink of collapse. This murkiness is compounded by the transnational criminal element of the industry. These issues have far-reaching security implications. By analyzing IUU fishing through an environmental security lens, policy planners and decision makers from both the security and conservation communities can be better prepared to work together and seek ways to avoid and address the destabilizing outcomes of IUU fishing.

## Illegal, Unreported, and Unregulated (IUU) Fishing

The IUU fishing industry is complex. It is valued at \$15.5 to \$36.4 billion annually and accounts for 20 to 50 percent of the global catch.<sup>9,10</sup> Given this magnitude, it undermines fisheries management, removes taxable revenue, undercuts law-abiding fishing operations, and compromises sustainable development investments. It further affects individuals and communities through its associated human rights and other criminal abuses.<sup>11,12</sup> While illegal, unreported, and unregulated fishing are classified together from a regulatory standpoint, each component is distinct.

**ILLEGAL FISHING** refers to fishing activities by a national or foreign vessel in the waters of a country, or by flag state vessels that are party to a Regional Fisheries Management Organization (RFMO), in contravention of conservation and management measures.<sup>13</sup>

**UNREPORTED FISHING** refers to fishing activities that have either not been reported or have been misreported to authorities. Unreported fishing is not only fraudulent, but also undermines fisheries management by skewing the accuracy of fish stock assessments upon which regulations are based.<sup>14</sup>

**UNREGULATED FISHING** refers to fishing activities in areas without any fisheries management or conservation measures, including the high seas and areas not managed by a RFMO. Fishing vessels without nationality or vessels of a country not party to a RFMO are also considered to be participating in unregulated fishing.<sup>15</sup>

IUU fishing is pervasive and varied, coming in many shapes and sizes. It can range from activities by domestic fishers or foreign fleets, while also being carried out by industrial fishing enterprises or small-scale, fishing operations.<sup>16</sup> IUU fishing can occur with legally flagged or licensed vessels, but also by rogue, stateless fishing vessels. For example, IUU fishing may be carried out by a domestic, unlicensed small-scale fisherman, or by a foreign, industrial fishing vessel poaching another country's sovereign ocean resources.

Furthermore, the global marine capture distribution showcases the complexity of addressing IUU fishing. In the developing world, the UNFAO estimates that small-scale fisheries contribute roughly 50 percent of the catch, and employs about 90 percent of the world's capture fishers.<sup>17</sup> These estimates underscore the need to craft policy solutions that address both industrial and small-scale fishing operations.

Just as IUU fishing operations are varied, so too are the degrees of responsiveness by governments. Most governments react strongly to foreign fleets infringing on their sovereign waters. Yet, in many instances, these same governments fail to robustly address internal IUU fishing and management problems. Not surprisingly, they are often more eager to combat foreign IUU fishing operations than to appear heavy handed with their own domestic fishers engaging in unreported or unregulated (UU) fishing at home. Similarly, there is often a lack of political will by governments to acknowledge and address IUU fishing problems by their distant water fishing (DWF) fleets far from home. The under-response by these countries can be attributed to a political calculation that places higher value on securing jobs and a steady supply of fish for their citizens than on preserving intact marine ecosystems or regard for another nation's economy or food supply.

Many of these same governments provide subsidies to their DWF fleets. Government subsidies often come in the form of fuel or ship construction subsidies, as well as tax breaks.<sup>18</sup> Regardless



of the form, subsidies diminish the true cost of fishing and are known to incentivize DWF fleets to fish unsustainably.<sup>19</sup> Due to the link between IUU fishing and fishing subsidies, the U.S. government advocated for anti-subsidy language when it negotiated the text on fishing in the Trans-Pacific Partnership and continue to urge the World Trade Organization (WTO) to end harmful fishing subsidies.<sup>20</sup>

While there is focus and progress by governments in combatting illegal fishing carried out by foreign fleets, addressing unreported and unregulated (UU) fishing has yet to gain the same attention. Many countries have yet to acknowledge the problems associated with vessels fishing beyond their allowable quotas, or conducting fishing operations in areas without governing rules or regulations.<sup>21</sup> For example, Chinese officials have been reluctant to concede the need to combat UU fishing despite documentation that Chinese-flagged or owned vessels in West Africa have tampered with vessel tracking systems, thereby misrepresenting where they are fishing, or have misreported a vessel's gross tonnage or capacity leading to underreporting of catch.<sup>22,23</sup> Such activities not only violate national fisheries regulations, but also violate the United Nations Convention on the Law of the Sea (UNCLOS), which stipulates a fundamental obligation of all parties to protect and preserve the marine environment.<sup>24</sup> When governments condone UU fishing, it leads to depleted fish stocks and ineffective fisheries management.

Given the security implications inherent to IUU fishing, all vessels and fleets, both domestic and foreign, industrial or small-scale, must be held accountable to local, national, and international fisheries management regimes. Without a cohesive and robust strategy to combat IUU fishing, the over-exploitation of the ocean will continue unfettered, alongside its attendant security problems.

## Security Threats of IUU Fishing

IUU fishing poses six main threats to stability and security, which are the:

- 1 Threat to ecological security
- 2 Threat to economic security
- 3 Threat to food security
- 4 Threat to geopolitical stability
- 5 Threat of maritime piracy
- 6 Threat of transnational organized crime

### 1. THREAT TO ECOLOGICAL SECURITY

UNFAO estimates that nearly 90 percent of global marine commercial fish stocks are overfished or fully fished, and that global fish consumption nearly doubled from 1960 to 2014.<sup>25,26</sup> However, given the illicit nature of IUU fishing and UNFAO reporting requirements that only catalog official capture numbers, the true amount of fish being caught globally is obscured. Independent experts estimate the total global marine capture from 1950 to 2010 to be 50 percent higher than data reported by UNFAO. This is primarily due to the underreporting of the catch of small-scale fisheries, but also the lack of reporting of large scale illicit enterprises.<sup>27</sup> The discrepancy highlights the magnitude of IUU fishing, and the need for increased management and enforcement within national waters.

As fishing efforts continue to expand globally, often far beyond what is reported, biodiversity and overall ecosystem health are threatened. High-value fish species are often the first to be removed,

threatening the oceanic food chain and placing intense strain on the resilience of marine ecosystems.<sup>28</sup> Some IUU fishers utilize fishing practices that maximize catches, but in the process, destroy the ecosystem. Such practices include: bottom trawling, cyanide fishing, dynamite fishing, purse seine fishing, the use of fish aggregating devices, and longlining.<sup>29</sup> These practices indiscriminately kill creatures caught in its path, and damage or destroy coral reefs, critical habitats and other essential components of the marine ecosystem.

Moreover, depleted fisheries are drivers for the fishing industry to engage in IUU fishing<sup>30</sup> One example that illustrates this point is the depletion of fisheries in China. Since the 1980s the Chinese government has implemented local fishing moratoriums to address severe local depletions, which have essentially taken away livelihoods of fishers. Meanwhile, China's domestic demand for fish products has increased with population growth and a rise in disposable income. To meet this demand, the national and provincial governments have provided subsidies and assistance to fishers to operate in areas outside their national jurisdiction. As Chinese fleets expand around the globe, many experts and observers report that some Chinese fishing vessels act with impunity in foreign waters. They have been found to participate in IUU fishing activities, exploiting quotas, changing vessel names, and falsifying gross tonnages of vessels.<sup>31,32,33</sup> Such practices directly undermine the stability of ecologies, further pushing fisheries to the brink of collapse. Chinese-flagged and/or owned vessels are not the only fleet known to practice IUU fishing.<sup>34</sup> Other distant water fleets from Taiwan, South Korea, Vietnam, and the European Union have also been known to engage in IUU fishing activities and their associated crimes.<sup>35,36,37,38</sup>

## 2. THREAT TO ECONOMIC SECURITY

Illegal and unreported fishing is estimated to generate annual black market profits of \$15.5 to \$36.4 billion.<sup>39</sup> In countries where IUU fishing is most prevalent, the value of those operations often exceeds the gross domestic product.<sup>40</sup> This profit estimate reveals that IUU fishing robs countries of an important source of taxable revenue and job security. These striking numbers do not even account for unregulated fishing that occurs in areas outside of national or RFMO jurisdiction.

Whether it is a foreign fishing vessel extracting catch from a fish stock that straddles exclusive economic zones (EEZs) or a small-scale fisherman whose catch remains off the books in the informal economy, IUU fishing contributes to the loss of economic revenue for a country. Simply put, the profits generated in this illicit economy are outside the reach of the government, and therefore not taxed. In developing and developed countries alike, where resources are scarce, potential losses in taxes can be damaging, as it undermines the ability and effectiveness of a government to deliver services to its people, an essential function of a state. In countries where governance is weak, and there is loss of reliable healthy natural resources and consistent livelihoods, a vacuum for instability or even potential insurgency can grow.

Additionally, foreign fishing fleets often do not land the fish they catch in the country where it was caught. Foreign fleets frequently use refrigerated transshipment vessels, known as reefer vessels, and at sea processors to land catch into markets of their choosing. This denies local workers jobs in the seafood industry, undercuts the value of fishing licenses, and denies host fishing nations taxable revenue. For example, fish caught off the coast of Chile by DWF fleets are often transshipped directly to Asian markets via reefer vessels resulting in lost taxable revenue to the Chilean government. In 2017, under the Agreement on Port State Measures to Prevent, Deter, and Eliminate Illegal, Unreported, and Unregulated Fishing (PSMA), only vessels from Lithuania, Russia, and Germany officially entered Chilean ports, despite the documented presence of additional foreign fishing fleets in or near Chile's

EEZ.<sup>41</sup> Transshipment also frustrates authorities since IUU-caught fish is often co-mingled with legally caught fish masking its origins and undermining fisheries management. Moreover, these vessels are not registered as fishing boats and therefore do not abide by the same regulations for providing catch documentation.<sup>42</sup> Addressing the system of reefer vessels and transshipment is an important element in the fight against IUU fishing.

IUU fishing, both industrial and small-scale, contributes to declining fish stocks, and as a result jeopardizes the job security of law-abiding fishers. In developing countries, as fish stocks are depleted, local fishers can no longer rely upon the sector for a stable source of income and livelihood. As a result, underemployed or unemployed fishermen are forced to search for other sources of income. This often occurs in places where unemployment is already high. In itself, unemployment of large sections of the workforce is problematic for a country's economy, but also for its security and stability. A lack of access to jobs, or any government recourse to finding a job, festers civil discontent. Moreover, weak economies are strongly correlated with dissatisfied citizens, and a lack of government capacity to respond to these grievances are variables for insecurity, and often compound each other.<sup>43</sup>

Furthermore, unemployment can lead people to seek out a source of income, at any cost. For example, drug traffickers in Sri Lanka have exploited out-of-work fishers, where they have been forced to facilitate the movement of marijuana and heroin for distribution.<sup>44</sup> In Costa Rica, fishermen have provided traffickers a steady supply of government-subsidized fuel intended for fishing use. In return, the cartels compensate the fishers with drugs, which they are then forced to sell in order to monetize the payment. Likewise in South Africa, fishers are often coerced into providing fuel to transnational organized crime (TOC) groups, and in return have been paid in crystal methamphetamine.<sup>45</sup> These examples highlight a system of forced dependency and blackmail. All of this contributes to declining public health of a country hooked on illicit narcotics, increases the presence of illicit drugs in communities, and further contributes to gang violence, homicides, and domestic abuse.<sup>46</sup>

### 3. THREAT TO FOOD SECURITY

The United Nations defines food security as “when all people, at all times, have physical, social and economic access to sufficient, safe, and nutritious food which meets their dietary needs and food preferences for an active and healthy life.”<sup>47</sup> As important global fish stocks have plummeted and demand for fish protein has increased, countries are threatened with a growing reality that fish protein is becoming more scarce. The UNFAO estimates that 17 percent of the world population relies on fish as their main source of animal protein.<sup>48</sup> Within certain countries and regions, dependence on fish protein is even greater. For some small island countries, as well as Bangladesh, Cambodia, Ghana,



Source: U.S. Fish and Wildlife Service

**TABLE 1: PER CAPITA FISH CONSUMPTION IN KILOGRAMS PER YEAR BETWEEN 1961 AND 2013<sup>49</sup>**

REGION	1961	2013
<b>Africa</b>	<b>4.57</b>	<b>10.77</b>
Eastern Africa	3.27	4.8
Middle Africa	9.52	14.08
Northern Africa	2.77	13.53
Southern Africa	5.15	6.09
Western Africa	6.07	15.25
<b>Americas</b>	<b>8.94</b>	<b>14.2</b>
Northern America	13.21	21.61
Central America	2.26	9.09
Caribbean	8.65	8.96
South America	5.49	10.31
<b>Asia</b>	<b>7.81</b>	<b>21.43</b>
Central Asia	n/a	2.26
East Asia	10.73	35.86
Southern Asia	2.49	6.36
Southeast Asia	12.89	33.0
Western Asia	3.24	8
<b>Europe</b>	<b>13.91</b>	<b>21.85</b>
Eastern Europe	11.51	17.08
Northern Europe	20.71	25.34
Southern Europe	17.3	29.07
Western Europe	12.59	21.45
<b>Oceania</b>	<b>14.91</b>	<b>26.87</b>
Australia and New Zealand	14.28	25.91
Melanesia	18.76	33.67
Micronesia	47.06	72.46
Polynesia	37.82	45.91
<b>World</b>	<b>9.01</b>	<b>18.98</b>

Indonesia, Sierra Leone, and Sri Lanka, fish comprises 50 percent or more of total animal protein intake per person.<sup>50</sup>

While economies around the world expand, the demand for fish only stands to increase. As more people move into the middle class and have income to spend on a wider variety of foods, demand for seafood will likely continue to increase. Meeting this burgeoning demand has created space for DWF fleets to operate. Such fleets scour the oceans seeking to meet the global demand for fish, while the coastal communities who rely on fish as their main source of protein see their local fish supply depleted, setting up the potential for food insecurity in certain coastal nations.<sup>51</sup> For example, in high-demand countries, like China, where domestic fisheries have already been depleted or degraded, the government has encouraged the proliferation of their DWF fleets to ply the ocean in an effort to meet domestic demand. With an estimated 2,600 DWF vessels, China accounts for roughly 18 percent of the global fish catch and is a central player in the global fishing trade.<sup>52</sup>

Along with distant water fishing, aquaculture (i.e., farming plants and fish in aquatic environments) has become a critical source of fish protein.<sup>53</sup> According to a recent UNFAO report, aquaculture is now responsible for 45 percent of global aquatic animal production.<sup>54</sup> Aquaculture can be done sustainably, by growing species low on the food chain, carefully choosing feeds and locations, and minimizing wastes and escapes from farms. However, it has also been linked to labor abuses, water pollution, overfishing of the feed stock, widespread use of unsafe chemicals and hormones, and threats to native species by introducing invasive ones.<sup>55</sup> Nevertheless, aquaculture is a critically important industry to develop sustainably in order to stave off food insecurity.



**The international community must be attentive to the complexities of food insecurity and the contribution to instability and conflict. In Syria, for example, experts have identified the multi-year drought and agricultural declines as two of many issues that have contributed to the origins of conflict.<sup>56</sup> In famine and drought-stricken countries like Somalia, where humanitarian aid organizations traditionally provide food to those suffering, insurgent groups and terrorist organizations like al-Shabaab have taken on the role of distributing food aid to citizens. This is a dramatic shift from past tactics of blocking aid deliveries.<sup>57</sup> Al-Shabaab's transition has provided them a degree of legitimacy, and has ultimately helped them to solidify power and control in Somalia. These two examples illustrate how food security is not just humanitarian assistance and development issue, but also a security one due to the potential for exploitation by nefarious actors.**

As expendable income in developing countries continues to increase and demand for fish grows, it places a greater strain on an already scarce resource and increases the likelihood of IUU fishing practices. There has yet to be famine in coastal communities where fish is a significant source of protein. However, if fisheries continue to be overexploited, both legally and illegally, due to poor fisheries management and enforcement, fish protein-reliant countries may be hurtling towards food insecurity. Developing nations who rely on fish as their main source of protein need to be keep a wary eye on IUU fishing and DWF fleets and work to sustain their food resources

#### **4. THREAT TO GEOPOLITICAL STABILITY**

As fishers ply the ocean in search of catch, many cross illegally into foreign countries' sovereign waters to fish. Without proper license and permissions, this is in direct contravention of international and domestic laws. Government responses to illegal fishing can take many forms, ranging from administrative fines and civil penalties to criminal charges. But in contentious areas of the world, the response to IUU fishing has been far more escalatory, and at times, even turned violent. As such, IUU fishing can create serious geopolitical tensions.

Incidents of IUU fishing are often closely aligned with disputes over sovereign boundaries. In the highly-contested South China Sea, IUU fishing has emerged as an additional, complicated threat, in an area where tensions are already high over maritime boundary disputes. In this densely-populated region, neighboring Asian countries rely on capture fisheries for a significant portion of their GDP, and the industry directly and indirectly supports an estimated 230 million jobs in the region.<sup>58</sup> This territorial dispute has led to an increase in competition among fishing vessels, with reports documenting incidents of Chinese fishing vessels operating in these waters, often even accompanied by the coast guard.<sup>59</sup> Two examples from 2017 highlight this tension—first, when a “Chinese speedboat fired shots at a Filipino fishing trawler operating in the Spratly Islands,” and second, when “members of the Chinese coast guard boarded a Vietnamese fishing boat, released the catch, and destroyed the vessels equipment.”<sup>60</sup>

In Indonesia, the government recently declared a moratorium on foreign fishing vessels operating in its national waters, and as a result, has interdicted and blown up or scuttled over 300 foreign fishing vessels from neighboring countries like Vietnam, the Philippines, Malaysia, China, and Thailand. In one of these incidents, Indonesian authorities interdicted a Chinese fishing vessel, and the Chinese Coast Guard rammed the Chinese fishing boat in an attempt to compel the Indonesian authorities to release it.<sup>61</sup> Other countries in the region, such as Palau and Malaysia, have begun to replicate Indonesia's

## Piracy: A Case Study in Why the National Security Community Must Adapt to Emerging Threats

The national security community, and specifically the U.S. Navy, traditionally has not considered piracy at the core of its mission. Rather, they viewed inter-state conflict, counterterrorism, and freedom of navigation as central. However, as piracy began to increase in the Gulf of Aden in the early 2000s, the U.S. Navy and other international partners realized there was a need to respond to this growing security threat. (See “Threat of Maritime Piracy” section.) What became clear was that piracy not only threatened the lives of those aboard commercial vessels being attacked, but also threatened global commerce. Nearly one-fifth of the world’s annual trade transits through the Gulf of Aden and north to the Suez Canal. Given these risks to global commerce, the international community responded with a significant mobilization of forces from navies across the globe, including organizing the Combined Maritime Forces (a 32-nation naval partnership focused on counter-terrorism, counter-piracy, and maritime security) and a NATO campaign. Similar to this show of force, piracy in the Gulf of Aden spurred further cooperation and capacity building programs, which are ongoing.

Industry cooperation and engagement, as well as shoring up legal frameworks, were crucial to the success of anti-piracy operations. In order to protect commercial vessels and decrease the likelihood of being pirated, commercial ships changed their operating procedures. With the help of new laws that allowed insurance companies to insure security-guarded vessels at relatively low rates in comparison to the past, the vessels are now better equipped to protect themselves. This coordinated, multi-pronged approach to addressing piracy is at the core of its success. By not only engaging industry to shift its standards, but also bringing in military knowledge and expertise, piracy in the Gulf of Aden is the lowest the international community has seen in recent memory—with only 9 attacks this year, as of October 2017.<sup>62</sup>

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practices. In the South China Sea, where fishing rights are a core, contentious issue, such interactions could escalate into serious regional or international conflicts.<sup>63</sup>

In East Asia, tensions between North and South Korea have long existed, and IUU fishing by each other’s fleets has been a specific point of contention. In October 2017, North Korean authorities detained a South Korean fishing vessel that was caught entering North Korean waters, but released it within a matter of days.<sup>64</sup> Other incidents off the coast of the Korean peninsula have often involved Chinese fishing vessels operating in South Korean waters. In fact, South Korean intelligence reports indicate that North Korea sold its fishing rights to China for an estimated \$75 million, which may explain why Chinese vessels have drifted into these areas.<sup>65</sup> Interactions between Chinese vessels and the South Korean Coast Guard can be fraught—in 2016, a Chinese fishing vessel rammed a South Korean Coast Guard ship, causing it to sink.<sup>66</sup> These potentially volatile situations seem likely to remain a problem in the Yellow Sea.

Elsewhere, where territorial disputes and long histories of tension are less publicized, there is potential for increased geopolitical tensions and violence due to IUU fishing. Off the coast of West Africa in 2016, navies scuffled over jurisdiction of an IUU-suspected Chinese distant water fishing vessel. The incident led the Guinean and Sierra Leonean navies to exchange gunfire, and resulted in each government issuing statements on the matter.<sup>67</sup> Also in 2016, the Argentine Coast Guard sank a Chinese fishing vessel that had been caught fishing illegally. The action resulted in the Chinese



Source: U.S. Southern Command

Ministry of Foreign Affairs calling on Argentina to investigate the incident and demand the safety of its citizens.<sup>68</sup>

As fish become increasingly scarce and fishing fleets are pushed further from home in search of their catch, geopolitical incidents like these will likely become more common. The potential for escalation, miscalculation, and international tensions stand to increase due to the state of the world's fisheries and the demands placed on them.

## 5. THREAT OF MARITIME PIRACY

The international community has readily recognized the threat of piracy in Somalia, but this problem extends far beyond the Horn of Africa. In West Africa and Latin America and the Caribbean, piracy has increased.<sup>69</sup> According to *Oceans Beyond Piracy*, in 2016, West Africa witnessed an increase from 54 incidents to 95 incidents of piracy—the reasons behind such actions are unclear. However, off the Horn of Africa, as fishers have witnessed their jobs slowly dwindling due to IUU fishing, piracy has become a lucrative alternative.

Somalia is an example of some in the fishing industry turning to piracy in the face of IUU fishing from foreign vessels.<sup>70</sup> As the Somali Civil War raged in the 1990s and the government collapsed, the Somali Navy disbanded, and was no longer able to patrol its territorial waters. Seeing a lucrative fishing opportunity, foreign fishing fleets began to invade these unprotected waters. To discourage foreign vessels from stealing fish from their waters, some fishers turned to piracy as a deterrent to IUU fishing, but also as an alternative livelihood.<sup>71,72</sup> This piracy elicited a coordinated response from the international community, which discouraged foreign vessels from operating in Somali waters. However, in recent years, as the international naval presence has secured these waters, some foreign fishing fleets have returned—and not far behind are pirate attacks. Reports have documented a return to piracy, most recently hallmarked by the hijacking of *Aris 13* in March 2017. Locals in the area reported that these were not professional pirates, but out-of-work fishermen.<sup>73</sup>

Beyond some disenfranchised fishermen turning to piracy, IUU fishing continues to create the overall enabling environment for piracy itself to continue. In a sense, poor maritime governance has enabled both IUU fishing and piracy, each working in tandem to perpetuate the other's impacts and persistence.

## 6. THREAT OF TRANSNATIONAL ORGANIZED CRIME

The international community has not established a common definition of transnational organized crime, though according to the United Nations Office on Drugs and Crimes (UNODC), it is often understood to occur when a group of three or more people in an effort to make profits, coordinate and commit a serious crime.<sup>74</sup> The UNODC has identified different examples of TOC which include: drug

## Global Incidents of IUU Fishing

These incidents were selected from the Environmental Security Program's online database, located at [www.naturalsecurityforum.org](http://www.naturalsecurityforum.org). They highlight the pervasiveness of IUU fishing and its connection with other security threats.

### SEPTEMBER 2017

Carlos Rafael or the "Codfather," who personally-owned the largest number of fishing vessels in New England, was arrested and sentenced to 46 months in prison for a long history of crimes associated with undermining government quotas, tax evasion, and money laundering.

### MARCH 2016

A Chinese fishing vessel was caught illegally fishing squid in Argentine waters. It was pursued by Argentine officials, who shot at the vessel in an attempt to stop it. The fishing vessel escaped into Uruguayan waters. The incident enflamed tensions between Argentina and Uruguay. The Chinese fishing fleet, Hua Li, is known for enslaving its crew.

### MAY 2016

The Gabonese Navy, the Gabonese Fisheries Enforcement Agency, and Sea Shepherd intercepted three Congo-flagged trawlers engaged in illegal fishing inside Gabon's exclusive economic zone after crossing into the territory from the Republic of Congo. One of the vessels was caught inside the Mayumba National Park, a marine protected area. The crew were of several different nationalities, including Chinese and Congolese nationals.



**FEBRUARY 2016**

An Australian Navy ship intercepted a stateless fishing vessel near Oman that was bound for Somalia. The vessel contained a large cache of weapons exposing a possible violation of a U.N. Security Council arms embargo. The Australian Navy seized nearly 2,000 AK-47 rifles, 100 rocket-propelled grenade launchers, 49 PKM machine guns, 39 PKM spare barrels, and 20 mortar tubes from the fishing vessel. The value of the haul was estimated at \$2 million dollars.

**FEBRUARY 2017**

The Burmese Navy fired at Bangladeshi fishing trawlers who crossed into Burmese territorial waters, injuring two and killing one. Burmese authorities sent a letter to Bangladeshi authorities requesting that Bangladeshi border guards prevent fishing vessels from entering Burmese territory.

**OCTOBER 2016**

A Chinese fishing vessel rammed and sank a South Korean Coast Guard speedboat after eight officers boarded another Chinese fishing vessel and attempted to open a locked door. The Coast Guard officials opened fire on the Chinese vessels. There were no injuries. The incident was part of a broader South Korean crackdown on more than 40 Chinese vessels fishing illegally in waters 76 km southwest of Socheong Island.

**JUNE 2016**

South Korean fishermen seized two Chinese fishing vessels that were illegally fishing blue crab in South Korean waters. Five South Korean fishing boats towed the Chinese boats to shore to report them to the South Korean Coast Guard. The South Korean vessels cited declining blue crab catch and increasing illegal Chinese fishing vessels as reasons why they did this.

**APRIL 2016**

Two Vietnamese fishing boats were seized by Palau authorities. These boats were burned in a publicly recorded event to demonstrate the seriousness of Palau's fishing laws.

**JULY 2016**

A firefight broke out at a bar in Cambodia near the Vietnamese border between Vietnamese and Cambodian fishermen due to illegal fishing by the Vietnamese. The firefight left two Vietnamese nationals dead and others injured.

**APRIL 2016**

Pakistani authorities arrested 59 Indian fishermen for illegally fishing in Pakistani waters.

**FEBRUARY 2016**

One Chinese and one Namibian citizen were arrested for trying to smuggle 95 kg of abalone and pieces of rhino horn to Hong Kong. The confiscated items are also alleged to have been smuggled from South Africa by the two suspects.

**MARCH 2016**

Two Vietnamese vessels with a total of 28 fishermen were arrested for illegally fishing in Australian waters. Their haul of 30 barrels of sea cucumbers was also seized, the largest haul by illegal foreign fishermen in Great Barrier Reef waters in more than 30 years.



Source: U.S. Navy

trafficking, human trafficking, smuggling of migrants, illicit trading in firearms, trafficking in natural resources (particularly resources that directly contribute to social conflict, such as diamonds), wildlife trafficking, the selling of fraudulent medicine, and cybercrime.<sup>75</sup>

Noticeably missing from this collection of crimes is IUU fishing, despite it having been recognized by the United Nations as a potential problem in 2009.<sup>76</sup> IUU fishing often converges with and utilizes the same networks as other TOC activities. This includes using the same routes to transport illegal commodities, whether drugs or IUU-caught fish; using fishing vessels to conceal trafficking activities; and even co-opting disenfranchised fishermen to support criminal operations.

Such operations occur across the globe, from Latin America and West Africa to Europe and Asia. For example, in Costa Rica, a known transit point for narcotics traveling to the United States, authorities have interdicted fishing vessels with drugs hidden in their fish holds. To illustrate this point, Costa Rican Ambassador to the United States, Roman Macaya Hayes, detailed an incident in his country, where a vessel was caught carrying over half a ton of cocaine stuffed in the carcasses of sharks.<sup>77</sup> Across the Pacific, authorities from Australia, Sri Lanka, the Philippines, and Taiwan have intercepted fishing vessels trafficking heroin, marijuana, and ketamine.<sup>78</sup> Drug traffickers have incorporated the use of fishing vessels into their business model and supply chain.

IUU fishing is also closely connected with human trafficking and slave labor abuses. Forced labor is common aboard IUU fishing vessels, and is frequently referred to as modern slavery. Those aboard vessels often spend months, even years, at a time away from the shore. This practice is facilitated by support vessels or reefers that are able to “bring supplies of fuel, food, bait, and even a change of crew.”<sup>79</sup> Migrants workers, usually unskilled, are frequently exploited to serve as unpaid crew aboard fishing vessels. Lacking regular wages, they are often compensated a small share of the catch, thus motivating IUU fishing practices in hopes of increasing the overall haul, and in return their compensation. Labor abuses aboard fishing vessels are well documented, and exist across the globe, in Southeast Asia, Europe, West Africa, and Oceania.<sup>80</sup>

Arms traffickers have also been known to use fishing vessels to smuggle their product. For example, in 2016 an Australian naval ship interdicted a dhow off the coast of Yemen smuggling a whole host of weapons.<sup>81,82</sup> Reports speculated that the intended final destination of the weapons was Yemen—which ultimately would likely have helped fuel the ongoing civil war. It is clear that TOC groups utilize the fishing sector to disguise nefarious activities, often using fishing operations as front companies for other illicit industries, and that IUU fishing itself should be considered a transnational organized crime.<sup>83</sup>

In addition to the connections with TOC, the broader impact of IUU fishing is the significant threat to rule of law and governance. IUU fishing undermines international, regional, and national fisheries management laws and regulations. Due to a lack of capacity and ability to enforce against IUU fishing, in many developing countries, IUU fishing operators are rarely caught or see charges brought against them. Corruption, a lack of sufficiently deterrent national laws, and weak judicial systems allow IUU

## Technology: A Silver Bullet?

Technologists and private industry are critical to helping combat IUU fishing and ensuring environmental security. The proliferation of technologies to enhance Maritime Domain Awareness, from drones to satellites, has improved our capacity to monitor fisheries. But, technology is not itself a solution. Rather, the effective use of technology depends on sustainable implementation, which requires financial and human capital and analysis for ongoing operations. As such, technological solutions for monitoring and enforcement must be matched to governments' capacity to deploy the technologies in concert with other tools and as part of a wider strategy. To ensure enduring success, financial resources must be identified on a long-term planning horizon to guarantee that the research, development, and use of technology can be equitably maintained and sustained. In addition, the incorporation of technological solutions into strategies should be complemented by capacity building and legal reform to make collected information permissible in judicial proceedings.

There are three main categories of technology being used to monitor and track fishing fleets: Automatic Identification Systems (AIS), Vessel Monitoring Systems (VMS), and other vessel tracking systems (VTS). AIS are required by the International Maritime Organization on ships over 300 gross tons and cargo vessels over 500 gross tons.<sup>84</sup> AIS, which was designed as a safety precaution, produce a signal that allows other vessels to track the location of nearby vessels in order to prevent collisions. However, AIS are flawed because they are only required when entering port, and thus can be turned off and on while a vessel is at sea, facilitating IUU fishing operations. This gap has led some governments to require VMS, which are satellite based systems installed on domestic commercial fishing vessels to allow government regulatory agencies to monitor position, time, course, and speed of vessels. VMS are often utilized by governments like the United States to track fishing vessels within territorial waters and EEZs, and the data are proprietary and not shared publicly. A variety of innovative VTS have recently developed, and typically include hand-held devices well-suited for small-scale fishing vessels, which are intended to fill the near-shore monitoring gap. One example is Pelagic Data Systems, a company that primarily works with the small-scale, artisanal fishing industry, that has developed a hand-held VTS that cannot be turned off.<sup>85</sup>

In addition to AIS, VMS, and VTS, governments, the private sector, and nongovernmental organizations have begun to integrate data from satellites, radar, and electronic monitoring technologies to create a full picture of fishing operations. Organizations such as Vulcan, OceanMind, and Global Fishing Watch are working to use data-analysis software and machine-learning algorithms to automate the analysis of satellite imagery and radar, and integrate it with other data streams, such as AIS and VMS signals.<sup>86</sup>

fishing to persist. As a National Intelligence Council (NIC) report titled the "Global Implications of Illegal, Unreported, and Unregulated (IUU) Fishing" states, "high levels of IUU fishing activities almost certainly could not go undetected and unpunished without the acquiescence of authorities. Corrupt officials shield illegal fishers from enforcement, enable laundered fish to enter markets, and persuade observers to look away."<sup>87</sup>

Disregard for fisheries management and regulations, paired with lack of enforcement, fundamentally undermines the justice system since perpetrators are not held accountable. Such inequities may contribute to a sense of political exclusion, unequal application of the law, and unfair treatment

among those law-abiding fishers and the wider industry. For example, in Costa Rica, when a fisherman is arrested for IUU fishing in its EEZ, he can only be held in custody for 24 hours. However, when fishing far from shore, the transit back to the main land often exceeds this time period, and as a result it is far more difficult to prosecute the fisherman for his crimes. This anecdote is illustrative of the deficiencies of domestic regulations, and the lack of justice brought against perpetrators of IUU fishing.

Furthermore, the multiple threats posed by IUU fishing indirectly and directly impact the effectiveness of governments to provide services, create strong economies, and foster strong institutions. As Cathy Haenlein articulates in the report titled “Below the Surface”—“organized crime networks can pose a direct threat to the state not through open confrontation but by quietly undermining national institutions.”<sup>88</sup>

**To summarize, these six security implications highlight the wide-ranging impacts of IUU fishing across the globe. Overlaid with other stability concerns in a country, like poor governance or civil discontent, IUU fishing has the potential to exacerbate already fragile communities. These concerns highlight a need to create a more robust, whole-of-government strategy within the U.S. government that utilizes expertise across agencies and departments, and includes partners in the private, philanthropic, and nongovernmental communities.**

## The Ocean’s Constitution

UNCLOS enshrines the legal framework to address IUU fishing. The treaty defines and establishes the rights and responsibilities of countries related to their use of ocean resources—including environmental impact, management of fisheries, and business practices. Three legal tiers govern the ocean—a territorial approach, a flag state approach, and a port authority approach. It is important to understand the evolution of UNCLOS since its development highlights the gaps that still exist in maritime security, which is key to combatting IUU fishing.

### TERRITORIAL APPROACH

The territorial approach establishes zones that delineate the extent of sovereignty and each country’s jurisdiction over ocean resources. These zones allow countries to exploit, manage, and protect their marine resources. The three essential tiers of ocean zones are: territorial water, contiguous zone, and EEZs.

- Territorial waters extend out 12 nautical miles and countries have full sovereignty over this area, wherein all national laws and regulations apply.
- The contiguous zone starts where the territorial zone ends and continues 12 nautical miles further. Countries have the power to enforce certain domestic laws pertaining to customs, taxation, immigration, and pollution.
- Beyond the territorial waters, and including the contiguous zone, is the EEZ, which extends outward 200 nautical miles. An EEZ assigns control of the economic resources to the coastal country, including rights to fishing, mining, and oil exploration.



Beyond those waters, the international community has established a governing system of regional fishing bodies, which includes a subset of RFMOs mandated to “adopt conservation and management measures for fishing on the high sea.”<sup>89</sup> These institutions establish quotas and fishing access rights to countries that choose to participate, and aim to manage and conserve valuable fish stocks on the high seas. RFMOs vary in their focus—with some managing only specific species, like tunas, while others are more general in their ecological management regimes.<sup>90</sup> Many RFMOs acknowledge that IUU fishing is one of the most difficult issues that they face.<sup>91</sup> Although they offer an important framework for governing global fisheries, the RFMO institutional design, coupled with the difficulty to enforce compliance and uneven participation of fishing nations, has resulted in an uneven patchwork of fisheries management on the high seas, which has allowed IUU fishing to flourish.

### GLOBAL COVERAGE OF EXCLUSIVE ECONOMIC ZONES VS. HIGH SEAS



Source: MPA Atlas<sup>92</sup>

### FLAG STATE APPROACH

In response to the limits of the territorial approach, the international community established requirements for vessels to be marked with the flag of its home country. Under these requirements, each flagged vessel is subject to the laws of the country where it is registered, even outside national territory. Moreover, the flag state is responsible for enforcing regulations over such vessels, including both international and national maritime laws. In addition to being under the jurisdiction of a flag state, being flagged also provides the vessel with protection from other states. If a stateless vessel is encountered by the authorities of a state, it risks being seized by that state, and the adjudication process varies country to country.

## PORT AUTHORITY APPROACH

In partial response to the weaknesses of flag state jurisdiction and gaps in the operation of RFMOs, the international community crafted the first international treaty focused on IUU fishing. The PSMA aims to prevent IUU catches from being landed and entered into commerce. As of December 2017, 50 countries and the European Union have ratified the PSMA. To offload catch in a port of a PSMA signatory, foreign vessels must present and undergo verification that its fish were legally caught. Such requirements limit the number of compliant ports where foreign vessels can enter, making it more difficult for IUU fishing vessels to land their catch, thus raising the operating costs of IUU fishing. The PSMA has been successful in deterring vessels from operating in countries that are party to the treaty and have strong capacity to inspect vessels. For example, in Chile, which has been implementing the PSMA since 2004, few vessels have been caught trying to land IUU fish. In theory, if all countries were party to the PSMA and fully enforced it, no foreign fishing vessel engaged in IUU fishing would be able to enter its catch into commerce.

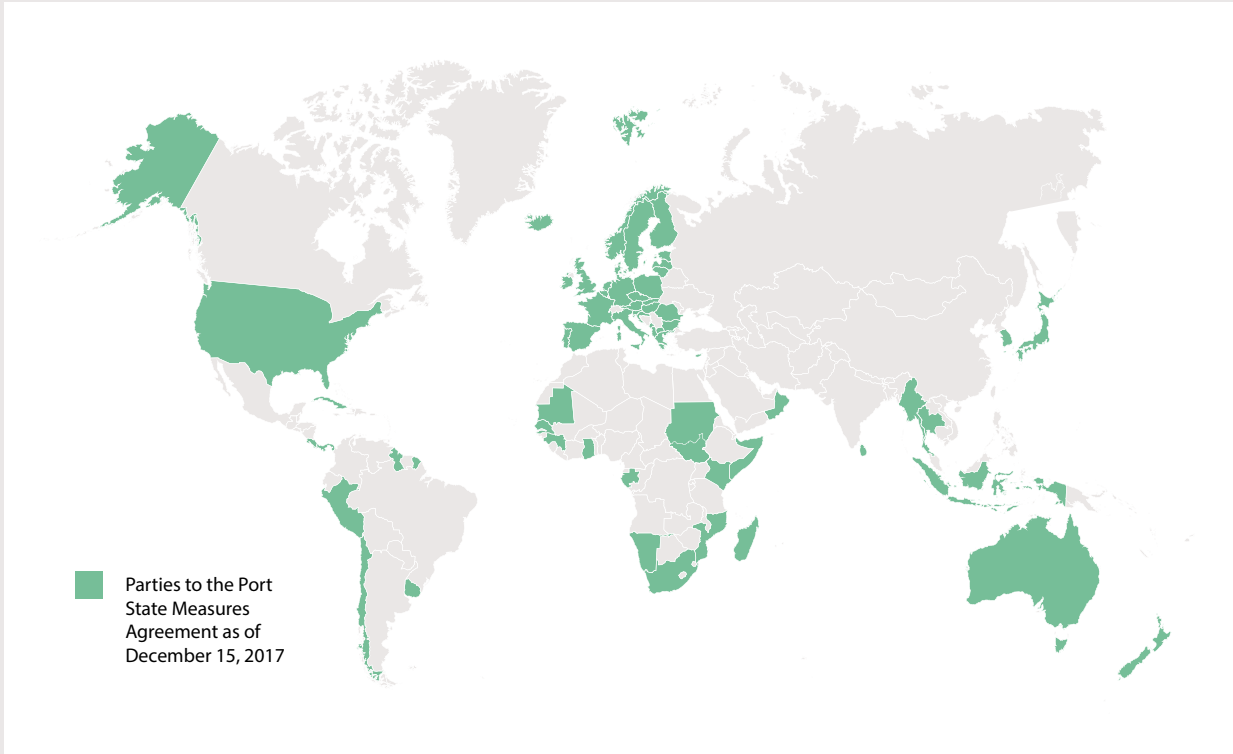
## AREAS FOR IMPROVEMENT

Significant gaps remain within international law despite the three tiers of governance and regulation. Flag of convenience ships (i.e. vessels that fly a flag of a country other than the country of ownership), are all too common, and often undermine international aims to conserve and protect the ocean. Flag of convenience states typically do not have robust regulations to deter IUU fishing, or even if they do, they may not enforce those laws. Thus, such flags are lucrative for IUU fishing vessels seeking to avoid oversight, and are a rewarding source of revenue for flag states. However, the short-term benefits of providing flags of convenience to vessels is at odds with the long-term costs to environmental security. Enabling these IUU fishing vessels depletes fish stocks, sending ripple effects across localities, countries, and regions.

Compounding the issue of flags of convenience is the limited number of the PSMA signatories.<sup>93</sup> As such, many ports exist where foreign vessels may enter and not be subjected to this agreement. Of the top 10 exporters of fish products, four countries, including China, Vietnam, India, and Canada, have yet to ratify the PSMA. If major exporters of fish products ratified and enforced the PSMA, the international community would be a significant step closer to eliminating international IUU fishing.

Complementary to international law, domestic fisheries law must also be improved in order to facilitate the fight against IUU fishing. In order to monitor, enforce, and successfully prosecute IUU fishing, domestic laws must be enhanced to stipulate and enforce sustainable fisheries management standards, including quotas, gear restrictions, and seasonal bans on fishing. Furthermore, financial resources must be dedicated to support improving domestic regulations. Even with a proper legal framework to combat IUU fishing, as exemplified in the United States, the problem persists. In 2017 for example, Carlos Rafael or the “Codfather,” who personally-owned the largest number of fishing vessels in New England, was arrested and sentenced to 46 months in prison for a long history of crimes associated with undermining government quotas, tax evasion, and money laundering.<sup>94</sup>

## PARTIES TO THE PORT STATE MEASURES AGREEMENT AS OF DECEMBER 15, 2017<sup>95</sup>



## United States Government Response

The United States has some of the strongest fisheries management and regulatory frameworks in the world to govern its sovereign waters and fishing vessels. The National Oceanic and Atmospheric Administration (NOAA) and the United States Coast Guard (USCG) recognize the threat posed by IUU fishing and work effectively side by side to manage and enforce the U.S. fishery laws. Yet, only 11 percent of USCG efforts are dedicated to addressing IUU fishing, which is indicative of the overall approach to the issue.<sup>96</sup> Abroad, NOAA, USCG, the Department of State, and the United States Agency for International Development (USAID) have invested in capacity building, providing countries with the tools and training to identify and address potential IUU fishing operations based on limited and scarce resources. However, given the magnitude of the IUU fishing security threat, the U.S. government is in need of a lasting, whole-of-government strategy for tackling IUU fishing.

The U.S. government's integrated response to IUU fishing abroad has been relatively nascent, only gaining momentum since 2009, with ratification of the PSMA. Security analysts and leading voices in the U.S. national security community have raised awareness of the security implications of IUU fishing. For example, former Secretary of State John Kerry made combatting IUU fishing and sustainable fishing practices a hallmark policy of his tenure as Secretary. During the Our Oceans Conference in 2016, Secretary Kerry remarked, "It's no wonder that most people don't realize that



*A Senegalese navy officer directs a joint boarding team of U.S. Coast Guardsmen and Senegalese sailors while conducting a routine inspection of a fishing vessel operating in Senegal's EEZ. Source: Wikimedia Commons*

## Unconventional Partners = Successes

In order to mitigate the threats to security and prosperity, the community combatting IUU fishing must utilize unconventional partners. Those partnerships lie within the U.S. national security community, including the U.S. Departments of State, Defense, Homeland Security, Treasury, and the Intelligence Community. In recent years, the national security community has recognized the threat to security posed by environmental issues, including IUU fishing. In the 2016 NIC report, it outlined the intersectional concerns and second order effects of IUU fishing on stability and prosperity across the globe. Moreover, during a testimony before the Senate Select Committee on Intelligence, Director of National Intelligence, Daniel Coats, identified IUU fishing as a security threat. Director Coats stated,

Global fisheries face an existential threat in the decades ahead from surging worldwide demand, declining ocean health, and continued illegal, unreported, and unregulated (IUU) fishing. IUU fishing also harms legitimate fishing activities and livelihoods, jeopardizes food and economic security, benefits transnational crime, distorts markets, contributes to human trafficking, and undermines ongoing efforts to implement sustainable fisheries policies. It can also heighten tensions within and between countries and encourage piracy and frequently involves forced labor, a form of human trafficking.<sup>97</sup>

Current and retired U.S. military officers also recognize the threat posed by IUU fishing, and the need to establish an inclusive strategy. At the September 2017 National Interagency Advisory Group Meeting, Rear Admiral Robert Sharp, the Director of the National Maritime Intelligence-Integration Office, articulated a need to understand and address IUU fishing in a comprehensive way. The Admiral stated that “our network is only limited by our imagination and our willingness to go out and create connections,” highlighting the importance of a broad network approach, with partners across the public and private sectors to combat IUU fishing.

Without a coordinated, interagency strategy that addresses the core developmental, economic, regulatory, monitoring, and enforcement problems that allow IUU fishing to persist, substantial strides in combatting this environmental security threat will not come to fruition.

**“ We need to establish regional and local campaigns against IUU fishing, and with any campaign it always involves more than just the military. It needs to be an all hands-on deck approach.”<sup>98</sup> ”**

RETIRED REAR ADMIRAL JONATHAN W. WHITE



illegal, unreported, and unregulated fishing costs the world tens of billions of dollars a year and is linked to organized crime, drug trafficking, and gross human rights violations. Most of our citizens aren't aware that fishing vessels operating lawlessly strip mine our ocean every single day and sometimes rely on slave labor to obtain bigger catches and larger profits."<sup>99</sup>

In addition to leadership from the Department of State, there is a growing community of national security experts who readily recognize the threats of IUU fishing, and the need for entities like the Departments of Defense, Homeland Security, and the Intelligence Community to play an important role in combatting it. The 2016 NIC report stated that "IUU fishing also harms legitimate fishing activities and livelihoods, jeopardizes food and economic security, benefits transnational crime, distorts markets, contributes to human trafficking, and undermines ongoing efforts to implement sustainable fisheries policies."<sup>100</sup>

**“ At the darkest end of the spectrum, the first long-term threat [of IUU fishing] is the health of the oceans. If the oceans are shattered in an ecological sense, we can't recover as a planet. And in the short-term, as fish stocks are depleted and competition rises for fish protein, we will see the potential for geopolitical conflict.”<sup>101</sup>**

FORMER SUPREME ALLIED COMMANDER AT NATO, ADMIRAL JAMES STAVRIDIS

Vice Commandant of the U.S. Coast Guard Admiral Charles Michel echoed these sentiments, highlighting that, "When you're relying on protein from the sea...for your food for your family, and that food is poached or taken away from you, that really is a security issue for you and your family. And you can place that into the context of not only families, but countries."<sup>102</sup>

### PRESIDENTIAL TASK FORCE ON COMBATTING IUU FISHING AND SEAFOOD FRAUD

Recognizing the global problems associated with IUU fishing, in 2014, former President Obama issued a Presidential Memorandum titled "Establishing a Comprehensive Framework to Combat Illegal, Unreported, and Unregulated Fishing and Seafood Fraud," which created a Presidential Task Force co-chaired by the Departments of State and Commerce, and included nine other federal agencies.<sup>103</sup> It was designed to create a whole-of-government strategy and response to the problem of IUU fishing products entering the United States and the attendant security implications of IUU fishing around the world.

The Task Force issued 15 recommendations centered around four themes: international, enforcement, partnerships, and traceability. Many of these recommendations were carried out by the end of 2017, including:

- an assessment of the traditional Maritime Domain Awareness tools to combat IUU fishing by improving threat analysis and monitoring in support of fishing enforcement operations;

- the establishment of a Seafood Import Monitoring Program that will trace seafood from the point of harvest or production to the point of entry into U.S. commerce;
- commitment to end harmful fishing subsidies in trade agreements, and an inventory of cooperation and assistance programs globally to support capacity efforts;
- expansion of diplomatic efforts to increase signatories to the PSMA; and a set of principles and best practices for monitoring, control, and surveillance measures for RFMOs.<sup>104</sup>

In January 2017, the Task Force issued a report on its accomplishments which stated, “that the successes over the past few years in ending illegal fishing and seafood fraud are only initial steps... these problems will not be overcome without an ongoing, sustained, and diligent effort and are committed to building on the work of the Action Plan in 2017 and beyond.”<sup>105</sup> The Task Force exists today, but a whole-of-government approach to combatting IUU fishing has stalled. Individual agencies continue some of the important work, such as NOAA implementing the SIMP and the Department of State creating the Safe Ocean Network, which “seeks to build a global community to strengthen all aspects of the fight against illegal fishing including detection, enforcement, and prosecution.”<sup>106</sup> However, there remains significant work, and a need for renewed commitment to the Task Force’s goals.

In February 2017, President Trump issued an Executive Order on Enforcing Federal Law with Respect to Transnational Criminal Organizations and Preventing International Trafficking. Within this order, the Trump Administration directed the executive branch to:

strengthen enforcement of Federal law in order to thwart transnational criminal organizations and subsidiary organizations, including criminal gangs, cartels, racketeering organizations, and other groups engaged in illicit activities that present a threat to public safety and national security and that are related to, for example:

- i. the illegal smuggling and trafficking of humans, drugs or other substances, wildlife, and weapons;
- ii. corruption, cybercrime, fraud, financial crimes, and intellectual-property theft; or
- iii. the illegal concealment or transfer of proceeds derived from such illicit activities.<sup>107</sup>

Although the order does not specifically mention fisheries, activities related to IUU fishing fall under all of these categories and should be considered under this umbrella.

## Transparency: A Necessary Step

Transparency is crucial to combatting IUU fishing. Not only will greater transparency of the fishing sector help law enforcement officials monitor, enforce, and prosecute IUU fishers, but it provides the opportunity to enhance fisheries management regimes and overall governance. There are three specific areas where improved transparency would be beneficial: seafood supply chains, vessel ownership structures, and vessel movements.

**SUPPLY CHAINS:** The U.S. and EU have created traceability regimes that work to uncover the origins of a fish entering markets. The European system, which utilizes green, yellow, and red cards, has been an effective way to incentivize non-compliant countries to make robust reforms. (For more information see section: Select National and Regional Responses to IUU Fishing.) The U.S. program, called the Seafood Important Monitoring Program, will enter into force on January 1, 2018. The program identifies priority fish and fish products vulnerable to IUU fishing, and establishes permitting, data reporting, and recordkeeping requirements for the importation of these species.<sup>108</sup> Unlike the European model which leaves it up to the country to certify that the seafood is legally harvested, the U.S. system makes it the responsibility of the importer of record to ensure that seafood entering the U.S. is legal. The program will require a record that traces a fish from “its point of entry into the U.S. back to the point of harvest or production to verify whether it was lawfully harvested or produced.”<sup>109</sup> If Japan were to create a traceability program that was coordinated with those of the U.S. and EU, nearly 63 percent by value of the world’s imports of fish and fish products would be covered under a traceability regime.<sup>110</sup>

**VESSEL OWNERSHIP:** Complementary to these traceability programs, further transparency of vessel ownership structures is critical. Both flags of convenience and anonymous shell companies make it easier to obfuscate the beneficiaries of IUU fishing operations, allowing owners to avoid identification and accountability.<sup>111</sup> For example, “Shell Company A operates the IUU fishing vessel, which sells its catch to Shell Company B. Shell Company B then re-invoices the catch to make it appear that the fish are legally caught, essentially laundering the catch. The fish are then resold to a fish dealer using this ‘legal’ documentation,” who in turn sells this illegal fish into the market.<sup>112</sup> By requiring greater transparency of vessel ownership structures, law enforcement officials and prosecutors will have greater ease in identifying and convicting perpetrators of IUU fishing.

**VESSEL MOVEMENTS:** In that same vein, greater transparency of vessel movements would shine light on the geographic distribution of IUU fishing operations. Presently, Indonesia is the only government that publicly shares its country’s VMS data, yet this approach should be replicated across the globe. It provides an opportunity for outside experts in academia and the nongovernmental community to identify and analyze IUU fishing operations, and ultimately provide assistance to governments in need of support with implementation and enforcement. Furthermore, monitoring systems should be required on all vessel classes in order to facilitate greater transparency.



*Minister Susi Pudjiastuti and Sally Yozell discuss IUU fishing in Indonesia at a Stimson Center event in May 2017. Source: The Stimson Center*

## Select National and Regional Responses to IUU Fishing

The response to IUU fishing around the globe varies based on resources, capacity, and political will. This section highlights select countries and regional organizations with whom the Stimson Center has worked closely to understand the scope of their IUU fishing problems and their strategies for addressing it.

### CHILE

A leader in IUU fishing enforcement, Chile dedicates significant resources to addressing domestic and foreign threats to its fisheries, and implemented port security measures well in advance of the PSMA. A step ahead of other countries, Chile has created an interagency process of monitoring, enforcing, and prosecuting IUU fishing. The National Fisheries and Aquaculture Service of Chile has authority over the entry of fishing vessels into ports and their inspection, while the General Directorate of Maritime Territory and Merchant Marine of Chile oversees other port controls, including safe navigation and shipping. To dock at port, vessels must have the required tracking devices. The PSMA enforcement mechanisms include the examination of a vessel's background by the Navy and in-port inspections using methods such as analyzing the vessel's fishing logbook and verifying the amount and species of the catch.

### EAST AFRICA

Fish-i in East Africa has been a successful regional approach to combatting IUU fishing. Eight East African coastal countries (Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Somalia, and Tanzania), with technical support from a team of experts from a myriad of organizations (Stop Illegal Fishing, Pew Charitable Trusts, Nordenfeldske Development Services, Trygg Matt Tracking, the Indian Oceans Tuna Commission, and the Indian Ocean Commission), have been able to identify and capture commercial IUU fishing vessels.<sup>113</sup> This informal intergovernmental task force is a model for other regions of the world suffering from IUU fishing. By sharing data and information such as licensing and movements of suspicious vessels, authorities have been better prepared and equipped to respond in real-time to the threat posed by IUU fishers.

### EUROPEAN UNION

The European Union was the first major market to use traceability as a tool to combat IUU fishing. The program utilizes a green, yellow, or red card strategy based on level of compliance with international rules. When a country has been identified as non-compliant, and is unable to provide validation that fish products were caught legally, the EU will issue a yellow card to that country. This yellow card typically sparks a six-month formal dialogue and reform period, which allows the



country time to make reforms to their fisheries sector. If sufficient reforms are not implemented, the country may be relegated to the red card list, which deems the country unable to import any seafood into the EU.<sup>114</sup> Given that the EU is the world's largest importer of fish and fishery products, this is a strong incentive for maintaining compliance.<sup>115</sup>

## INDONESIA

The Indonesian government has been a leader in combatting illegal fishing in Southeast Asia. Minister of Maritime Affairs and Fisheries, Susi Pudjiastuti has taken a hard line against foreign fishing fleets operating in Indonesian waters—interdicting and blowing up foreign vessels caught fishing illegally. This show of force has recently been replicated by other countries like Malaysia, Palau, and Argentina.<sup>116, 117</sup> In August 2017, Malaysian authorities scuttled two foreign fishing boats, rather than simply sinking the boats, which has been a common practice.<sup>118</sup> This shift in tactics is notable for it reveals that nations may see blowing up vessels as an effective approach to deterring illegal fishing by foreign fleets.

Indonesia has also become the first country to provide public access to its domestic fleet's vessel monitoring system (VMS) data.<sup>119</sup> As the second largest seafood supplier in the world, Indonesia's transparency initiative has been hailed by the conservation community as a watershed moment in sustainable management of fisheries.<sup>120</sup>

## PALAU

Palau has been a leader in combatting IUU fishing in its waters. In 2006, it was one of the first countries to ban bottom trawling. In 2009, it prohibited commercial shark fishing, creating the world's first shark sanctuary. In 2015, it announced its plan to require observers aboard all its tuna longliners.<sup>121</sup> In terms of enforcement, Palau has a bilateral shiprider agreement with the U.S. and has begun a partnership with Vulcan, Inc. to implement the company's new technology, Skylight, to better monitor and enforce against IUU fishing within the country's 1.5 million square miles of territorial ocean.<sup>122</sup>

## SENEGAL

Senegal estimated in 2012 that its country lost \$300 million due to IUU fishing activities—an equivalent to 2 percent of the country's gross domestic product. This realization initiated a robust response, which included Senegal ratifying the PSMA and banning transshipment within the country's EEZ. Senegal upgraded its Fisheries Code in 2015, and began to require identification tags on artisanal vessels, with the financial support of the World Bank's West Africa Regional Fisheries Program (WARFP). The program helps to manage licenses and fish stocks, as well as facilitate enforcement and prosecution of maritime crimes.<sup>123</sup> However, Senegal has room for growth in its counter-IUU fishing operations. Though it receives support from the United States and France to monitor and enforce against IUU fishing, the country is still sorely underequipped for effective enforcement.<sup>124</sup>

## THAILAND

Even as the fourth largest exporter of fish and fishery products by dollar value in the world, Thailand has been at the center of IUU fishing problems. The core problems plaguing the Thai fishing industry relate to inhumane labor practices and a lack of transparency. In 2015, Thailand received a yellow card from the European Union. As a result, Thailand created a Command Centre for Combatting Illegal Fishing and set up a Vessel Monitoring System. However, further progress must be made before the European Union will remove the yellow card.

# Recommendations: A Strategy to Combat IUU Fishing

The U.S. government must create a comprehensive strategy to more effectively combat IUU fishing, both at home and abroad. Such a strategy must utilize the expertise of agencies across the federal government, as well as unexpected partners in the private sector and non-profit communities. The recommendations are to:

## CREATE A WHOLE-OF-GOVERNMENT APPROACH

Through interagency cooperation and coordination, the U.S. government should develop a comprehensive strategy to combat IUU fishing in both the short and long-term. Building off the foundational work of the IUU Fishing and Seafood Fraud Task Force, the U.S. government should create a 10-year strategic plan to combat IUU fishing, which would provide a mandate and mission for departments and agencies to cooperatively address the multivariate impacts and implications of IUU fishing on national and regional security interests.

## INCREASE ENGAGEMENT OF COMBATANT COMMANDS (COCOMS)

Current military planning efforts are focused on high-end warfare scenarios and developing the technology, tactics, and resources to meet those threats. Strategic planners at the Department of Defense should include IUU fishing and its acute threats to maritime security in their military planning efforts. They should recognize the potential for IUU fishing to foster instability and insecurity in areas of U.S. national interest. Specifically, COCOMs are responsible for drafting Theater Campaign Plans, which define key tasks and missions within an Area of Responsibility. Due to their role in drafting these plans and their close relationship to on-the-ground realities, COCOMs are best suited to carry out assessments of the tools and partnerships needed to address the threats of IUU fishing.

## EXPAND SHIPRIDER AGREEMENTS BETWEEN THE U.S. AND FOREIGN COUNTRIES

Shiprider agreements are an important tool in combatting IUU fishing and other maritime threats. A shiprider agreement is a bilateral agreement between the U.S. and a foreign country that allows for U.S. Coast Guard officials to be on board a foreign enforcement vessel, and for a foreign country's enforcement officer to serve on a U.S. Navy or Coast Guard vessel. This process allows U.S. Navy or Coast Guard vessels to participate in the interdiction of IUU fishing and other operations in a foreign nation's waters.

The U.S. government should pursue establishing new shiprider agreements with countries to help deter and enforce against IUU fishing across the globe. In regions of the world where the primary focus of shiprider agreements have typically been counter-narcotics, such as in Central and South America, the U.S. government should expand these agreements to include counter-IUU fishing operations. Not only do these agreements encourage bilateral engagements between the U.S. and other countries, but they also serve as a critical transfer of expertise.

## ENCOURAGE COUNTRIES TO RATIFY, IMPLEMENT, AND ENFORCE THE PORT STATE MEASURES AGREEMENT

As of December 2017, 50 countries and the European Union member states, have become party to the PSMA, with most joining in the past three years. However, there are 152 coastal countries,

which illustrates a need to increase accession to this treaty in order to augment its success and effectiveness. The U.S. government should develop an interagency plan and support the UNFAO in helping to ratify, implement, and enforce the PSMA. The capacity building components of the PSMA include: strengthening of national and regional governance; and reinforcing monitoring, control and surveillance (MCS) systems.<sup>125</sup>

### **DEDICATE RESOURCES TO INCREASE MONITORING AND ENFORCEMENT CAPACITIES**

Authorities charged with combatting IUU fishing are often under-resourced, in developing and developed countries alike. However, in areas where resources are particularly scarce, IUU fishing operations are frequently the most prevalent. Dedicating resources to improve monitoring and enforcement capacities, such as port security and inspection trainings and maritime law enforcement boarding trainings, will better enable countries to combat IUU fishing. Additionally, it is critical to discourage corruption among inspectors and law enforcement. This can, for example, be done by raising wages, elevating statuses, or providing more professional opportunities for growth. With increased funding dedicated to port and maritime security, officials will be better able to identify suspicious vessels and conduct investigations. Not only does this protect against IUU-caught fish entering the market and further dis-incentivize this illegal practice, but it also serves as a force multiplier against the intrusion of terrorists, illicit drugs, and arms. The U.S. Coast Guard, NOAA, USAID, Departments of Defense and Justice should develop approaches to support increased capacity building and training that expand monitoring and enforcement capacities in priority regions around the world.

### **ADVOCATE FOR COMPREHENSIVE FOREIGN DOMESTIC FISHERIES REGULATIONS AND CATCH REPORTING REQUIREMENTS**

In order to facilitate the monitoring, enforcement, and prosecution of IUU fishing, countries must have domestic fisheries laws that empower authorities to effectively combat IUU fishing. Countries should also consider increasing the penalties for IUU fishing, moving it from an administrative offense to a civil or even criminal one. The U.S. government should facilitate capacity building with exchanges between the U.S. Department of Justice, NOAA, environmental lawyers, and foreign counterparts.

### **ENCOURAGE GREATER TRANSPARENCY OF THE FISHING INDUSTRY**

Transparency is a cornerstone of combatting IUU fishing since it helps facilitate monitoring, enforcement, and prosecution of these criminal acts. Three key areas for transparency improvement are: increasing traceability measures to uncover the global seafood supply chain, exposing the beneficial ownership structure of fishing operations, and making tracking information about vessel movements mandatory and publicly available. (See section “Transparency: A Necessary Step.”) Several agencies across the U.S. government have a role to play in achieving this goal. As it relates to seafood traceability, the Department of Commerce, and particularly NOAA, should continue to support, institute, and augment the SIMP, and expand it to include all species of seafood. To help uncover beneficial ownership structures of fishing vessels, the Department of Treasury should dedicate efforts to this process in order to facilitate the identification and prosecution of criminals in this space. The U.S. Trade Representative and Departments of Commerce and State should dedicate advocacy efforts to ending fishing subsidies, whether at a bilateral or multilateral level basis, or at the WTO. Fishing subsidies incentivize excessive and unsustainable fishing practices by DWF fleets across the globe. Ending subsidies and increasing transparency will level the playing field for law-abiding fishers and address the attendant security threats of IUU fishing.

### **MANDATE USE OF VESSEL TRACKING SYSTEMS (VTS) TO TRACK FISHING FLEETS**

Globally, countries should mandate the usage of VMS and AIS to monitor all fishing vessels and fishery support vessels, and reduce the size requirements for such monitoring technologies. For small-scale, artisanal vessels, countries should utilize other low-cost VTS, such as hand-held devices to monitor activities. Furthermore, countries should make vessel tracking system data publicly available. Combined with government incentives to keep the tracking device on whenever fishing, these technologies can support better monitoring, enforcement, and prosecution of IUU fishing. In the United States, NOAA should develop options to mandate the usage of VMS and AIS at all times on vessels in the domestic fishing industry and make this information publicly available. Furthermore, NOAA, the USCG, and the Departments of Transportation and State should work with the International Maritime Organization and priority countries to advocate for the mandatory usage of VMS and AIS on fishing vessels and other support vessels, as well as reduce the vessel size requirements.

### **INCREASE DATA AND INFORMATION COLLECTION AND SHARING**

Data and information sharing across jurisdictions is critical to combat IUU fishing, since it is inherently transnational. This creates opportunities to enhance current monitoring, enforcement, and prosecution efforts. The U.S. Intelligence Community can augment the success of these efforts, and should be utilized to create data sharing structures and best practices to help increase data and information collection and sharing. Moreover, information and data sharing between governments should be encouraged at regional and sub-regional levels, whether through formal or informal mechanisms. Governments and nongovernmental entities should develop secure data sharing mechanisms that enable data to be accessible at all levels. Furthermore, the U.S. government should work with national, regional, and sub-regional bodies to leverage the information collected and stored by RFMOs and other international organizations. It is critical that information sharing is carried out in a timely manner to facilitate monitoring, enforcement, and prosecution.

### **INCREASE DIALOGUE AND PARTNERSHIPS BETWEEN THE U.S. GOVERNMENT, NON-GOVERNMENTAL ORGANIZATIONS, AND THE PRIVATE SECTOR**

The community of stakeholders working to combat IUU fishing is broad—ranging from conservation organizations and technology firms to intelligence-gathering organizations, the development community, and academia. However, this counter-IUU fishing community would benefit from an increase in dialogue and partnerships. Such suggestions could be actualized by establishing U.S. government sponsored working groups that would convene these stakeholders, and provide a platform to share information and develop effective and holistic strategies to combat IUU fishing.



## Conclusion

Illegal, unreported, and unregulated fishing poses a serious threat to national and regional security. IUU fishing threatens food, economic, and ecological security; converges with transnational organized crime; undermines rule of law and governance; and increases the potential for tensions between nations and for maritime piracy. IUU fishing threatens to destabilize communities, countries, and regions that are both least able to address and most severely impacted by it. Even the best managed and enforced fisheries face this problem, but are often able to minimize the impacts due to strong governance and rule of law. However, fragile countries that rely upon fisheries for sustenance and livelihoods do not have the same institutional capacity to endure the multivariate impacts of IUU fishing. The potential for insecurity and instability is why the conservation community and the natural resource agencies can no longer address this issue alone. The U.S. government must develop a whole-of-government strategy that utilizes expertise and knowledge across the development, finance, defense, intelligence, and diplomacy communities. With this expanded network of invested actors, the impacts of IUU fishing can be minimized.

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