

On the Law of "Pirate" Fishing and its Connection to Human Rights Violations and to Environmental Degradation – A Multi-National Disaster

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I THEORY OF CONTEXT

"For coherence theories in general, the assessment of meaning and truth requires a proper fit of elements within a whole system."¹

"Among the assortment of perspectives commonly regarded as coherence theory, theorists differ on the question of whether coherence entails many possible true systems of thought or only a single absolute system."²

"Theory of context is the theory of our environmental design, and planning of new development should relate to its project."³

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¹World Heritage Encyclopedia, Meaning (Philosophy of Language), [http://schoollibrary.com/articles/eng/Meaning_\(philosophy_of_language\)](http://schoollibrary.com/articles/eng/Meaning_(philosophy_of_language)).

²Id.

³Dictionary, Sensagent, <http://dictionary.sensagent.com/CONTEXT%20THEORY/en-en/>.

II PREFACE

In 1978, I was sent to the Republic of the Seychelles to set up a 200 mile limit creating an Exclusive Economic Zone (EEZ),⁴ and to work out a deal which had been problematic for the Seychellois people and the French government regarding the purchase of dated tuna fish vessels.⁵ My first experience with illegal fishing came in the form of a request by the Attorney General of the Seychelles. He asked me what I should do about the following situation, "a South Korean fishing vessel was fishing illegally within the Seychellois waters, and it became stuck in the coral reef. A North Korean vessel came along and rescued the South Korean vessel (this is true believe it or not), and they were all taken to a hotel on the main island of Mahé." They started killing each other within a matter of hours. I suggested that he should send all of them back to their respective countries. He said he did not want to do that, because he was afraid that he would lose the fishing revenue from licensing in their EEZ, an area that I had been in the process of setting up for the country. The licensing of these fishing vessels would become a source of income for their government.

It can be said that the livelihoods of ten to twelve percent of the world's population (equivalent to over 870 million people)

⁴Lawrence C. Christy, *SWIOP/WP/21 — Fisheries Legislation in Seychelles*, October 1985. The Convention recognizes every coastal state's right to establish a 12-mile territorial sea and beyond chart an exclusive economic zone (EEZ) extending up to 200 miles from the low-water mark or other baseline. The coastal state has sovereignty over the territorial sea, subject to the right of innocent passage. In the EEZ it has "sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources" as well as certain other rights, subject to rights of other states, of which the most important for fisheries are freedom of navigation and, under certain conditions, access to fisheries.

⁵See *Id.* The Government requested FAO's assistance in drafting the necessary legislation and Mr. Savini was again sent to Seychelles, together with Barry Dubner, to provide the assistance. Following several missions in 1978 and 1979 the report *Legal and Institutional Aspects of Fisheries Management and Development in the Exclusive Economic Zone of the Republic of Seychelles (IOP/TECH/79/30)* was presented to the Government. It contained proposals for a foreign fishing decree and regulations, local fisheries decree and regulations and instruments concerning a fisheries joint venture. The foreign fishing proposals are the basis of the present Control of Foreign Fishing Vessels Decree, 1979 and Foreign Fishing Vessels Regulations, 1979.

depend on fisheries and aquaculture.⁶ Approximately, 4.3 billion people worldwide have relied on fish for food, because it is a significant source of animal protein.⁷ So, one could say that fisheries are extremely important to many people. The problem being addressed concerns the lack of scientific data regarding whether the world's fisheries are threatened by unsustainable fishing and poor management (i.e., illegal, unreported and unregulated fishing (IUU)).⁸ These practices reduce the long-term potential for fisheries to provide food and jobs. Due to these practices, the purpose of this article is to make the readers aware of what needs to be done in reaching a maximum sustainable yield for the fishing population of the world. The purpose of this paper is to review problems related to illegal, unregulated and unreported fishing, the extent of the problems statistically, and the lack of enforcement capabilities. The authors will propose their solution to these problems. As will be seen, recent scientific inventions and advances will make it easier to detect IUU Fishing and lead to uniformity of regulation.

III INTRODUCTION

A resolution was adopted by the General Assembly on the 25th of September, 2015 regarding a 2030 "Agenda for Sustainable

⁶*Fisheries and Aquaculture – Enabling a Vital Sector to Contribute More*, FAO U.N. (July 9, 2012), available at <http://www.fao.org/news/story/en/item/150839/icode/>. Sustainable fisheries and aquaculture play a crucial role in food and nutrition security and in providing for the livelihoods of millions of people.

⁷See *Id.* The State of World Fisheries and Aquaculture 2012 reveals that the sector produced a record 128 million tonnes of fish for human food - an average of 18.4 kg per person - providing more than 4.3 billion people with about 15 percent of their animal protein intake. Fisheries and aquaculture are also a source of income for 55 million people.

⁸*Fisheries Latest Data*, GREEN FACTS, available at <http://www.greenfacts.org/en/fisheries/1-2/07-regulation.htm>. Fisheries management poses challenges for all countries, especially those that are capacity poor. In some countries, improvements in resource management are proceeding hand-in-hand with public sector reform and measures to promote better governance. These outcomes are increasingly being incentive-linked to the provision of development assistance. However, despite positive developments, there has been only limited progress in the implementation of management measures in most of the world.

Development.”⁹ Goal 14 of this document is to conserve and sustain the use of the oceans, seas, and marine resources for sustainable development.¹⁰ The General Assembly document sets 2020 as its goal to effectively regulate harvesting, overfishing, IUU Fishing, and destructive fishing practices.¹¹ The General Assembly implemented science based management plans to restore fish stocks in the shortest time possible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.¹² By the same year 2020, the G.A. also set as a goal a minimum 10% of coastal and marine areas to be conserved in a way that is consistent with national and international law. That conservation should be based upon the best available scientific evidence. In paragraph 14.6 of the Resolution,¹³ the year 2020 would be set as a goal date by which time certain forms of fishery subsidies would be prohibited. These are subsidies which usually lead to overfishing, and it is believed that by eliminating these subsidies entirely, IUU fishing would be reduced.

⁹See G.A. Res. 70/1, (Oct. 21, 2015). This agenda is a plan of action for people, planet and prosperity, and seeks to strengthen universal peace in larger freedom. The goals and targets will stimulate action over the next 15 years in areas of critical importance for humanity and the planet.

¹⁰See *Id.* There are ten proposed articles under this goal which purports to, stop illegal fishing by reducing marine pollution, protect marine and coastal ecosystems, address the impacts of ocean acidification, end overfishing, conserve coastal and marine areas, prohibit fisheries subsidies, increase economic benefits and scientific knowledge, and provide access for small-scale artisanal fishers.

¹¹*Id.* This will be implemented in order to restore fish stocks in the shortest time feasible. An example of destructive fishing practices is bottom trawling. Bottom trawling is considered to be the most destructive fishing practice. This fishing method drags a large net across the sea floor and it scoops every marine life in its path; see also *Destructive Fishing*, MARINE-CONSERVATION, available at <https://marine-conservation.org/what-we-do/program-areas/how-we-fish/destructive-fishing/>.

¹²See G.A. Res. 70/1 at 14.4 & 14.5. 14.4 states that by 2020, the UN will effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices. 14.5 states that by 2020 the UN will conserve at least 10 percent of coastal and marine areas, consistent with national and international law and based on the best available scientific information.

¹³See *Id.* These subsidies “contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation.”

The Security Council issued a Report of the Secretary-General on the situation with respect to piracy and armed robbery at sea off the coast of Somalia. For years, Somalis have argued that the reason they started hijacking ships was because foreign nations were coming in and stripping their waters of valuable fish, shooting at their fishermen, and otherwise disrupting the waters off of their 1800-mile coastline. According to the Secretary-General's Report,¹⁴ the linkage between piracy and IUU fishing continued to be of concern¹⁵ because of the rise in the number of seafarers held by pirates in 2015¹⁶ due to the increase of hijackings of small fishing vessels. Many local communities viewed ransom payments for hostages as compensation for what they perceived was fishing revenue loss due to IUU fishing by foreign countries. Thus, piracy was committed to make up for fish piracy.

Turning now to the use of statistics, your authors learned that any discussion of statistics regarding the amount of fish left in the ocean is misleading or incomplete at times. As an example, due to climate change, fish populations are moving to colder waters in

¹⁴U.N. Secretary-General, *Report of the Secretary-General on the Situation with Respect to Piracy and Armed Robbery at Sea off the Coast of Somalia*, ¶ 6, U.N. DOC. S/2016/843 (October 7, 2016). The complex linkage between piracy and illegal, unreported and unregulated fishing continues to be of concern. Many local communities view ransom payments for hostages as compensation for what they perceive as fishing revenue lost through illegal, unreported and unregulated fishing by such vessels, and to that extent, the perception and the reality of illegal, unreported and unregulated fishing activities can be a driver for piracy.

¹⁵Barry H. Dubner & Kimberly Chavers, *The Dilemma of Piratical Ransoms: Should They be Paid or Not? On the Human Rights of Kidnapped Seamen and Their Families*, 18 BARRY L. R. 297, 297-98 (2013). This article considered the rights of seamen being held hostage and who are living under severe conditions that creates suffering, both psychological and physical, all from being held captive for months and years.

¹⁶IMB Report: *Sea Kidnappings Rise in 2016 Despite Plummeting Global Piracy*, ICC COM. CRIME SERV. (Jan. 10, 2017), available at <https://icc-ccs.org/index.php/news/1218-imb-report-sea-kidnappings-rise-in-2016-despite-plummeting-global-piracy>. More crew were kidnapped at sea in 2016 than in any of the previous 10 years. In its 2016 report, IMB recorded 191 incidents of piracy and armed robbery on the world's seas. Worldwide in 2016, 150 vessels were boarded, 12 vessels were fired upon, seven were hijacked, and 22 attacks were thwarted. The number of hostages fell to 151. Maritime kidnappings, however, showed a threefold increase on 2015. Pirates kidnapped 62 people for ransom in 15 separate incidents in 2016. Just over half were captured off West Africa, while 28 were kidnapped from tugs, barges, fishing boats, and more recently merchant ships, around Malaysia and Indonesia.

certain areas of the world. The New York Times reported that due to fish migrating from normal feeding grounds, the regulations/rules regarding catches in specific regions are becoming obsolete.¹⁷ In June 2016, there was a review of studies estimating IUU fishing and the methodologies utilized to achieve those ends.¹⁸ This was a good example of acknowledging the IUU problem but proving such problems exist is proving difficult. Under this report, there are many methodologies being utilized to estimate/determine IUU catch,¹⁹ but many estimates are simply incorrect because the methodologies are inconsistent. As will be shown later, there are problems with this lack of uniformity and inconsistency across the board. As an example, the report shows that an updated global estimate of IUU catch may have limited benefit due to wide confidence intervals and lack of clarity over IUU fishing methodologies,²⁰ including indicators of IUU fishing

¹⁷Erica Goode, *A Catch on the Move*, NY TIMES, Jan. 3, 2017, at D6. Studies have found that two-thirds of marine species in the Northeast United States have shifted or extended their range as a result of ocean warming, migrating northward or outward into deeper and cooler water. Fishing regulations, which among other things, set legal catch limits for fishermen and are often based on where fish have been most abundant in the past, have failed to keep up with these geographical changes. The mismatch between the location of fish and the rules for catching them has pitted recreational fishermen against commercial ones and State against State. It has heightened tensions among fishermen, government regulators and the scientists who advise them and raised questions for fishery managers that have no easy answer.

¹⁸Macfadyen G., Caillart, B., Agnew, D., *Review of Studies Estimating Levels of IUU Fishing and the Methodologies Utilized*, POSEIDON AQUATIC RES. MGMT. LTD. (June 3, 2016). The studies presented in this report found that:

(i) there are many different methodologies being used to estimate IUU catch but many estimates are not robust and methodologies not consistent;

(ii) estimates of global "missing catch" made in some studies include catch that is not necessarily IUU in terms of the definitions in the IPOA-IUU;

(iii) developing an updated global estimate of IUU catch may have limited benefit due to wide confidence intervals and a lack of clarity over IUU behaviors included;

(iv) indicators of IUU fishing to monitor progress in combatting IUU fishing need not necessarily include global estimates of volumes of IUU fish, and could focus on other aspects such as numbers of vessels on IUU fishing vessels lists, the number of countries on the EU IUU 'yellow' and 'red card' lists, and selected regional or local estimates of IUU fish catch based on repeatable and robust methodologies; and

(v) FAO might play a role in supporting the development of technical guidelines, both on methodologies for estimating IUU catch, and on how to conduct risk-based assessments of IUU fishing.

¹⁹Id. at (i).

²⁰Id. at (iii).

to monitor progress in combating IUU fishing. The report does not include global estimates of volumes of IUU fishing. It should focus on other aspects such as the identification of IUU vessels. The report does, for example, use the European Union (EU) IUU “yellow” and “red” card list which focuses on the number of vessels on the IUU fishing list.

In 2009, one study had estimated that the IUU-caught fish in 2003 was between 11% to 19% of reported catches.²¹ These percentages represent 10 to 26 million tons of fish, valued between 10 to 23 billion dollars.²² This figure was so enormous that the international, regional, and national efforts were mobilized in order to combat IUU fishing. However, the problem with fact gathering is that they use different approaches/studies rather than having a uniform approach.

As a follow-up, in 2015 the Food and Agricultural Organization/UN (FAO) convened a workshop to consider methodologies for estimating IUU fishing at a global level. They stated that it would be very useful to have an updated estimate of the IUU catch as the last one was completed in 2009 using 2003 statistics.²³ Apparently, there were a “total of eighty-nine studies, journal articles, and research reports collected and reviewed.”²⁴

²¹See Macfadyen, *supra* note 18, at 1. (The most widely quoted study was completed by David Agnew in 2009, which estimated that IUU caught fish in 2003 was 11-19% of reported catches. These fish are valued at \$10-23 billion).

²²Envl. Just. Found. et al., *Tragedy In the Marine Commons: The Intertwined Exploitation of Ocean Ecosystems and Fisheries Workers*, OHCHR 7, (Oct.13, 2016), available at <http://www.ohchr.org/Documents/Issues/Environment/Biodiversity/CoalitionNGOs.pdf>. (These fish amount to 11 to 26 million tons of illegally caught fish).

²³See Macfadyen, *supra* note 18, at 1. In February 2015, the FAO, with support from Pew Charitable Trusts, convened a workshop in Rome, Italy, to develop a methodology to estimate IUU Fishing at a global level. The motivation for this workshop reflected a recognition that the Agnew study is now outdated both in terms of the 2003 estimate it provided and the very different international, regional and national context now influencing levels of IUU fishing.

²⁴See *Id.* at i-ii. Forty-four of these were studies actually estimating levels of IUU fish catch and then analyzed to draw out the key findings, conclusions and recommendations for FAO and COFI. A further 35 were studies which did not estimate IUU catch and which often instead just reported on compliance levels or individual IUU fishing events. These studies use a wide range of different sources of information including: surveillance data and compliance levels; remote sensing (e.g. VMS, AIS); logbooks; expert judgment based on experience; interviews with fishermen and enforcement agencies; observer data; onboard cameras; stock assessment models; and trade data. These sources of information have different uses in terms of different

Forty-four of these research studies actually estimate the levels of IUU fish catch. Thirty-five of these studies do not estimate IUU catch, and instead, just report on compliance levels or individual fishing events.²⁵ Against this background, the FAO wanted advice on the updated global estimate of the IUU catch. Their objective was to identify the role that the FAO should have in supporting a science developing such an estimate, etc.²⁶

Before going any further into the jurisdictional problems regarding IUU fishing, your authors will set forth certain definitions of IUU fishing. First of all, as far as "Illegal Fishing" is concerned ... , according to the FAO, "Illegal Fishing" refers to: (1) fishing activities conducted by national or foreign vessels in waters under the jurisdiction of a state without the permission of that state, or in contravention of its laws and regulations; (2) fishing, conducted by vessels flying flags of States that are parties to a relevant Regional Fisheries Management Organization, who operate in contravention of conservation of management measurements adopted by the organization; (3) and finally, IUU fishing that is in violation of national laws or international obligations, including those undertaken by cooperating States that belong to a relevant Regional Fisheries Management Organization.²⁷

methodologies used to generate estimates of different aspects of illegal, unreported, and unregulated fishing activity.

²⁵See *Id.* at ii. For example, an unknown IUU catch for known vessels, of unknown catch of unknown/unseen vessels, or of catch volumes which are known but which might nevertheless be illegal. The study of studies concluded that most of the methods used have limitations. For example, they may be very good at estimating all the unreported catch of a particular species, but less good at identifying where it came from or what types of IUU were being used. Or they may be very good at identifying specific violation types, but poor at estimating quantities. Or they may estimate IUU catch of target species but have no estimate of the impact of IUU fishing on other species.

²⁶See *Id.* at 1. The motivation of the FAO to develop this methodology to estimate IUU fishing at global level is because the FAO has played an active role internationally over many years in efforts to combat illegal, Unreported and Unregulated (IUU) fishing.

²⁷See *Id.* at 4, (The definitions of IUU Fishing: Illegal Fishing (Articles 3.1.1 – 3.1.3 of the IPOA-IUU) refers to fishing activities:

3.1.1 conducted by national or foreign vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations;

3.1.2 conducted by vessels flying the flag of States that are parties to a relevant regional fisheries management organization but operate in contravention of the

The definition of "Unreported Fishing," as opposed to IUU fishing, is where fishing activities have not been reported or have been misreported to the relevant national authority in contravention of national laws and regulations, or that such activities were undertaken in the area of competence of a relevant Regional Fisheries Management Organization which have not been reported or have been misreported, etc.²⁸ Unregulated Fishing concerns: (a) fishing vessels without nationalities, and those flying the flag of a State not party to the Regional Fisheries Management Organization (RFMO), or; (b) by a fishing entity in the manner that is inconsistent with or contravenes the conservation and management measures of that organization; or (c) for fish stocks that are located where there are no applicable conservation or management measures, where such fishing activities are conducted in a manner inconsistent with a State's responsibilities for conservation under international law.²⁹

It is the term called "Illegal Fishing," that has been associated with the term "Pirate Fishing." In other words, the fishing vessels are being used without proper licenses or no licensing at all; and, they are fishing in a closed area or during prohibited seasons with prohibited gear, or catching over prescribed quotas.³⁰ The FAO states that in these cases, noncompliance may result in the quantity of catch being known but the catch may also be unknown.³¹

conservation and management measures adopted by that organization and by which the States are bound, or relevant provisions of the applicable international law; or 3.1.3 in violation of national laws or international obligations, including those undertaken by cooperating States to a relevant regional fisheries management organization.

²⁸See *Id.* at 4.

²⁹See Macfadyen, *supra* note 18, at 5.

³⁰*Id.* at 5.

³¹See *Id.* at 12. This noncompliance can be estimated from the estimated number of fishing vessels displaying the behavior multiplied by the estimated discard or unreported catch per illegally behaving vessel.

- Estimated number of vessels from known license data expected to be undertaking transgressions, is usually obtained from a combination of license records and surveillance data.
- Estimated unreported or misreported catch in illegally behaving vessels is usually obtained from logbook or observer data from vessels that are known to be behaving legally, for instance when they have an observer/camera on board.)

The term "Unreported Fishing" tends to be very specific about the loss of information on catch quantity arising from non/compliance or reporting requirements, but it does not cover the non/reporting or misreporting of the catch that is required by national law set forth by the reporting procedures of a RFMO.

The Report of the FAO Port State Measures Agreements (PSMA) to be discussed later,³² was implemented as an attempt by certain states to stop IUU fishing.³³ Also, one problem is that rather than having uniformity in the methodology of gathering the data, the definitions that are being used may also differ.³⁴ The

³²See *Port State Measures Agreement*, FAO, (2016) (last visited 03/24/2017), available at <http://www.fao.org/fishery/psm/agreement/en>. The Agreement was adopted by the FAO Conference in 2009. The main purpose of the Agreement is to prevent, deter and eliminate illegal, unreported and unregulated (IUU) fishing through the implementation of robust port State measures. The Agreement envisages that parties, in their capacities as port States, will apply the Agreement in an effective manner to foreign vessels when seeking entry to ports or while they are in port. The application of the measures set out in the Agreement will, inter alia, contribute to harmonized port State measures, enhanced regional and international cooperation and block the flow of IUU-caught fish into national and international markets. Article 5 of the agreement talks about the integration and coordination at the national level where each party shall, to the greatest extent possible:

- Integrate or coordinate fisheries related port State measures with the broader system of port State controls;
- Integrate port State measures with other measures to prevent, deter and eliminate IUU fishing and fishing related activities in support of such fishing, taking into account as appropriate the 2001 FAO International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing.

³³See *Id.* at 6. The various attempts by the interested parties shall cooperate and exchange information with relevant States, FAO, other international organizations and regional fisheries management organizations, including on the measures adopted by such regional fisheries management organizations in relation to the objective of this Agreement; See also, *U.S. To Ratify Port State Measures Agreement, Proposes Fish Traceability Rule*, 10 *BIORE*, (2016). The pros of this Agreement are that the governments aim to gradually reduce the number of "ports of convenience" available for illegal fishers to bring their catch to market, increasing the costs of illegal activity and making it less profitable.

³⁴See Macfadyen, *supra* note 18, at 4-5. The definitions of IUU Fishing that were used in different studies and their focus on different aspects of illegal, unreported, and unregulated fishing. The definitions of these different components in the IPOA-IUU are such that:

Illegal Fishing refers to fishing activities:

- 3.1.1 conducted by national or foreign vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations;

main problem is that there seems to be a lack of alignment between those definitions and the types of activities and quantities (e.g., catch or economic loss) estimated in typical IUU studies.³⁵

The following diagrams set forth the geographical scale in ocean coverage of studies that estimate IUU fishing as well as the

3.1.2 conducted by vessels flying the flag of States that are parties to a relevant regional fisheries management organization but operate in contravention of the conservation and management measures adopted by that organization and by which the States are bound, or relevant provisions of the applicable international law; or

3.1.3 in violation of national laws or international obligations, including those undertaken by cooperating States to a relevant regional fisheries management organization.

Unreported fishing refers to fishing activities:

3.2.1 which have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations; or

3.2.2 undertaken in the area of competence of a relevant regional fisheries management organization which have not been reported or have been misreported, in contravention of the reporting procedures of that organization.

Unregulated fishing refers to fishing activities:

3.3.1 in the area of application of a relevant regional fisheries management organization that are conducted by vessels without nationality, or by those flying the flag of a State not party to that organization, or by a fishing entity, in a manner that is not consistent with or contravenes the conservation and management measures of that organization; or

3.3.2 in areas or for fish stocks in relation to which there are no applicable conservation or management measures and where such fishing activities are conducted in a manner inconsistent with State responsibilities for the conservation of living marine resources under international law.

This review states that while it is not objective of this review to analyze the definitions of IUU fishing in Member State Legislation, it seems likely that the specific definitions being used may also differ. The definition of IUU fishing may be dealt with directly in Member States' legislation, indirectly through references to a binding measure of a RFMO, or through a combination of both.

³⁵See *Id.* at 7. The difficulties encountered by the different studies in providing consistent definitions of IUU fishing that are unambiguously aligned with IPOA-IUU definitions can be explained by the lack of clarity of those definitions in the IPOA-IUU, and a lack of alignment. As noted by Tsamenyi *et al.* (2015), the IUU fishing term is broad, and due to the diversity in governance frameworks, national legislation, fishing operations throughout the globe, and RFMO conservation and management measures, there are a number of grey areas and overlapping situations among the three components of IUU fishing.

types of species that fall within this category.³⁶ The reader can see that the diagrams are very inconsistent, because the studies concentrate on different areas or types of fish. Approximately 12 studies estimate IUU fishing specifically for yellow nets, long lines, pot/slash traps, or trawling. Seventeen of the 44 studies (39%), estimate IUU fishing as it pertains not just to commercial fishing, but also to recreational and/or subsistence fishing.³⁷ The types of fishing fleet and fishing gears covered in the studies are given so as to estimate IUU Fishing. (See tables 1 and 2 below)

You may ask, what is the purpose of having these studies? It is said that in order to get a truer picture of the impacts of catches on sustainability and the methodologies used, the analysts need to reconstruct catches, often adding recreational as subsistence catches to known commercial catch.³⁸

Looking at the tables,³⁹ the quantity of unknown catch can be estimated, but the origin is often unknown — "...whether it is illegal or not illegal based on the definitions in the International

³⁶See *Id.* at 8. Only two studies were estimates of IUU fishing in the Americas, one a study of commercial and recreational fisheries targeting groundfish and salmon in British Columbia, and the other a study of IUU fishing in the Mexican EEZ. It is not clear whether the small number of studies focusing on this continent is due to studies not being published in English and therefore not being collected by the consultants, or whether the Americas are actually under-represented in terms of studies estimating levels of IUU fishing; See generally, *Rainforests & Rivers*, OCEANIA CRUISES CURRENTS, December 13, 2016. Ocean Volume: estimates vary from 317 to 330 million cubic miles; the most reliable sources place the volume at approximately 328 million cubic miles. Ocean waters comprise about 85 percent of the total water on the earth's surface. The volume of all land above sea level is only one-eighteenth of the volume of the ocean. If the solid earth were perfectly smooth (level) and round, the ocean would cover it to a depth of 12,000 feet.

³⁷See Macfadyen, *supra* note 18, at 9. These studies are those making estimates of 'total removals,' with 27 being concerned only with commercial fisheries. Of the studies making estimates of IUU fishing in commercial fisheries, while 11 include all fleet types, 14 fleets focus on large scale/foreign fleets, and only two focus solely on IUU fishing by small-scale fleets — this despite the fact that small-scale fisheries employ around 90% of the world's fishers and fish workers and make a significant contribution to global catches.

³⁸See Macfadyen, *supra* note 18, at 10. These studies which examine total removals at a range of different geographical scales often therefore focus strongly on 'unreported' catches, but as already noted only some of these are likely to be IUU as defined by IPOA IUU definition 3.2.1 or 3.2.2. Indeed, these studies are less concerned about the cause of unreported/misreported catch than its magnitude.

³⁹See *Id.* at 14-5. As represented in table 4 "strengths and weaknesses of common approaches to IUU Fishing at a case specific level," all the methods can provide estimates

Table 1: Types of species covered in studies to estimate IUU fishing†

Species	Total	% of Total
All (in the area being covered by the study)	17	39%
Anadromous	2	5%
Crustacea	1	2%
Demersal	9	20%
Freshwater	1	2%
Mollusk	1	2%
Multiple	6	14%
Pelagic	7	16%
Total	44	

† See *Review of Studies Estimating IUU Fishing and the Methodologies Utilized*, June 2016. Source: Poseidon analysis of studies reviewed. Notes: studies focusing on anadromous species both concerned salmon, while the study related to mollusks estimated IUU fishing for abalone.

Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU) (for instance discarding and reporting discarded quantities is rarely illegal, even though it’s assumed by many to be IUU).”⁴⁰ The Report further goes into techniques showing that there is a use of stock assessment models in order to estimate total catch of a species; using trade data or another combination of high level statistics “(landings, catches, imports, exports, transshipments to estimate total catcher trading volumes.)”⁴¹

of “missing catch” but this may not be easily (or generally) expressed in terms of IUU unless their source data allows identification of IUU.

⁴⁰See *Id.* at 13. When these estimates are compared with declared catch, it provides an estimate of undeclared catch which may not be illegal if it is estimated as discarded or unreported. The stock assessment model method has some similarities with the cross-comparison of observed/unobserved vessels, in that some known data are used to statistically infer unknown data. This is not the same as the non-statistically based inferences in the “anchors and influences” meta-methods where unknown catches are inferred from changes in management regimes and assumed fisher behavior, without an underlying statistical model such as a fish population model/stock assessment.

⁴¹See *Id.* When these statistics are compared with declared catch, it provides an estimate of undeclared catch. Catches may or may not be illegal. For instance, Clark et al, 2009, were able to attribute unreported salmon detected using trade data as illegal; see also, *What is Transshipment?* INFORMED TRADE INT’L IMP./EXP., available at <http://www.itintl.com/what-is-transshipment.html>. Transshipment is the act of shipping goods to an intermediate destination prior to reaching their ultimate end-use. Transshipment is a common practice with logistic benefits, but can be used to illegitimately disguise country of origin or intent of the goods. Transshipment is commonly used by smugglers and terrorists seeking to disguise the point of origin of their goods from Customs officials. Certain countries like Libya, North Korea, and Syria

Table 2: Types of fishing fleets and fishing gear covered in studies to estimate IUU fishing[‡]

Gear Type, Fleet type	Gillnet	Longline	Multiple Gears	Pots/traps/divers	Trawling	Total	%
Commercial, Recreational and Subsistence fisheries			11			11	25%
Commercial and recreational fisheries			5	1		6	14%
All commercial fleets		1	9	1		11	25%
Foreign fleets only			2			2	5%
Large scale fleets only	2	3	4		3	12	27%
Small-scale fleets only	1		1			2	5%
Total	3	4	32	2	3	44	
%	7%	9%	73%	5%	7%		

[‡] Id. Source: Poseidon analysis of studies reviewed. Notes: studies covering 'gillnet,' 'longline,' etc. estimated IUU fishing for that particular gear type only.

As a summary, IUU stands for Illegal Unreported and Unregulated fishing. Illegal fishing equals fishing without a license, fishing in closed areas, fishing with prohibited gear, fishing over a quota, or fishing prohibited species.⁴² Most of the world's fish is found "in international waters of coastal States."⁴³

Before discussing any matters regarding international waters, it is necessary to set forth a discussion in this section on law of the terminology. The EEZ is really a zone set up in the 1982 UNCLOS to stop countries like Chile, etc., from declaring a 200 mile limit of "territorial sea" which, jurisdictional wise, carries with it more of a coastal State's authority due to its more

are considered higher risk for security threats while countries like China and Taiwan are likely sources for counterfeit goods.

⁴²See *FAQ: Illegal, Unreported, and Unregulated Fishing*, THE PEW CHARITABLE TR. 1, (Aug. 27, 2013), available at <http://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2013/08/27/faq-illegal-unreported-and-unregulated-fishing>. This report offers an overview that pressure on the world's fish stocks is at an all-time high, and although most industrial fishing operations are within the law, some take to the seas fully intending to steal fish.

⁴³See *Id.* at 1. Although the report does not specify where exactly in international waters this fishing is occurring, illegal fishing in such areas can range from a licensed vessel fishing more than its allowed catch to a vessel coming into the zone with no fishing license at all, or even a vessel crew not reporting or underreporting their catch, even if the vessel is licensed to catch that species.

complete sovereignty over the areas of territorial seas.⁴⁴ It is important to realize that there is very little regulation and enforcement on the high seas as they cover almost 45% of the planet, and so there is rampant illegal fishing and unregulated fishing in those areas.⁴⁵ The crime of illegal fishing is limited to the regulations of a coastal state. As said earlier, fishing without a license or in a prohibited area is something that is regulated and enforced. The criminal conduct arises, for example, when the ship master forges the catching import/export documents regarding catches, etc., and forging ship logs, so that the fish can be marketed in the European Union (EU) and North America.

However, the important fact here is that there are other crimes related to illegal fishing, such as illegal immigration, human trafficking, drug trafficking, modern slavery, and environmental problems that are very significant.

The Pew Research Center Report discusses the “impact” of illegal fishing and its impact on legitimate commercial fisheries as well as fish populations. Illegal fisheries avoid overhead cost, licensing fees, fishing without the constraints accepted by legal fishermen, use falsified documents, and effectively “launder” their ill-gotten catch.⁴⁶ Because they do not report the catch, the accuracy of official fish and stock estimates is affected by this lack of information.⁴⁷ Therefore, the fishing stocks that are in existence are not managed properly because the regulatory bodies

⁴⁴See *infra* §V Jurisdiction where there is a more detailed explanation of what the Exclusive Economic Zone is.

⁴⁵See FAQ: Illegal, Unreported, and Unregulated Fishing, *supra* note 45 at 2. Even when unregulated fishing on the high seas does not break any national law, it can have a significant harmful impact on marine life in the world’s oceans. So, the international community needs to develop and implement policy solutions that both forbid and eradicate these activities. It is difficult to measure the volume of IUU fishing taking place across the world’s oceans, but experts estimate that illegal and unreported fishing costs the global economy up to \$23 billion annually, which represents around 20 percent of the global seafood catch.

⁴⁶See *Id.* at 3. Illegal fishers’ actions constitute a clear case of unfair competition since they operate without the costs of doing business legally or the strictures of following established policies and laws.

⁴⁷See *Id.* at 3. The not reporting of catch adversely affects how fisheries are managed because regulatory bodies use reported catches and stock estimates to set catch limits and otherwise manage fish populations. Thus, because the real volume of fish caught is unknown, it is very difficult to effectively manage fisheries where illegal fishing is taking place.

do not have the correct estimate, or as mentioned earlier, because fish stocks are moving to cooler waters.⁴⁸ The important fact that the Pew people stated was that “. . . the real volume of fish caught is unknown . . .” It is very difficult to effectively manage fisheries where illegal fishing is taking place,⁴⁹ because the ocean volume is estimated to “vary from 317 to 330 million cubic miles.”⁵⁰

There is also grave environmental damage specially by vessels using prohibited gear such as drift nets that catch non-target species including sharks, turtles, dolphins or that injure coral reefs, sea mounts, and other aspects of the marine ecosystem. This is a reminder that these practices cost the global economy up to 23 billion dollars annually, which represents 20 percent of the global seafood catch. The main reason that we should be concerned about this subject is that over 3 billion people around the world use fish as a source of protein for their diets. As pointed out earlier in the Arctic Ocean article in the *New York Times*,⁵¹ the ocean ecosystems are changing and if key species are removed because of the lack of the food chain or destructive forbidden practices, there will be nothing left for those people who need fish for their diet. Finally, illegal fishing diverts revenue from legitimate and often developing economies, and also threatens sustainability of fish stocks.

The causes of illegal fishing are driven by growing world demand for fish and seafood, and the globalization of the market. There is patchy regulation and poor enforcement regimes at sea.

⁴⁸See Goode, *supra* note 17. The migration of species in response to warming temperatures has made the task of estimating the size of fish populations considerably harder. Temperature affects fish species differently.

⁴⁹See FAQ: Illegal, Unreported, and Unregulated Fishing, *supra* note 45 at 3.

⁵⁰See *Rainforests & Rivers*, OCEANIA CRUISES CURRENTS, December 13, 2016. The most reliable sources place the volume at approximately 328 million cubic miles. Ocean waters comprise about 85 percent of the total water on the earth's surface. The volume of all land above sea level is only one-eighteenth of the volume of the ocean. If the solid earth were perfectly smooth (level) and round, the ocean would cover it to a depth of 12,000 feet.

⁵¹See Goode, *supra* note 17. A local example would be that now in New Jersey, hundreds of miles north of where it was in the 1990s, providing the basis for regulators to distribute shares of the catch to the Atlantic States. Under those rules, North Carolina still has rights to the largest share. The result is a convoluted workaround many fishermen view as nonsensical. Because black sea bass is now harder to find in their state waters, North Carolina fishermen must steam north 10 hours, to where the fish are abundant, to even approach the State's allocation.

IV

**FISHING STATISTICS ARE MISLEADING AND SO
NUMEROUS THAT THEY PRESENT PROBLEMS**

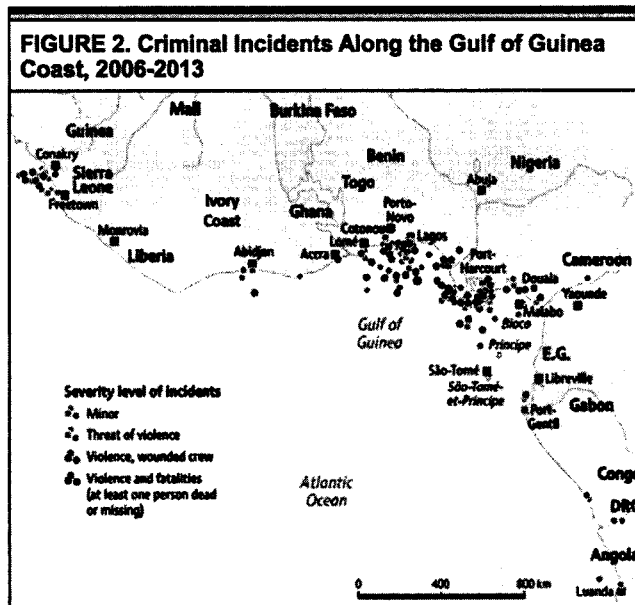
There is an old saying that statistics can be shown to prove anything. In the case of IUU Fishing, we have so many methodologies and statistics available that there seems to be no way of monitoring which is correct and which is not. This problem is exacerbated by the fact that there is simply no way of knowing what the maximum sustainable yield is, because fish are being taken illegally. However, let us look at the available data so that the reader can have a picture of the problem. It will be proposed in this article that a certain type of enforcement procedure take effect uniformly around the world. In order to accomplish that goal, there has to be a basis for discussion (i.e., reliable statistics). Let us give the fishing problem off of West Africa as an example.⁵² (See figure 1 below, Criminal Incidents Along the Gulf of Guinea Coast, 2006-2013)

There is an "Africa Security Brief" that was issued in February 2015. It discusses illegal fishing and the impact on the countries of West Africa. As a statistical fact, the container trafficking in West Africa ports has grown 14% annually since 1995, which happens to be the fastest of any region in the Sub-Saharan Africa.⁵³ For example, not only does Nigeria lose revenue because of oil theft or illegal bunkering,⁵⁴ but Nigeria's losses alone con-

⁵²See Adeniyi A. Osinowo, *A Publication of the Africa Center for Strategic Studies*, AFR. SEC. BRIEF, Feb. 30 February 2015. Source: Gisis, Imo, UNITAR/UNOSAT, 2014, UNOSAT Global Report on Maritime Piracy: a geospatial analysis 1995–2013 (New York: UNITAR, 2014), 32.

⁵³See Adeniyi A. Osinowo, *Combating Piracy in the Gulf of Guinea*, 30 AFR. SEC. BRIEF 1, Feb. 2015. This publication focuses on the escalation in piracy and other transnational maritime threats in the Gulf of Guinea that have exposed the limited levels of maritime domain awareness in the region. The highly fungible nature of the maritime security threats means that these challenges cannot be addressed solely by individual States, but require cohesive regional security cooperation. While progress has been made, stronger political commitment is needed if regional maritime security cooperation plans are to be operationalized.

⁵⁴See Lamar Stonecypher, *Bunkering Oil On Ship*, BRIGHT HUB ENG'G, (April 30, 2009), available at <http://www.brighthubengineering.com/marine-engines-machinery/33665-bunkering-oil-on-the-ship/>. The fuel for ships is stored in tanks that form a part of the ship, called "Bunker Tanks". While the term used to describe the process of getting



stitute between 40,000 to 100,000 barrels a day of oil due to thefts. Now, with 40% of a region's annual catch estimated to be IUU,⁵⁵ West Africa's waters have the highest levels of illegal fishing in the world: (See table 3 below, Platform Profile of West African Navies and Coast Guard)

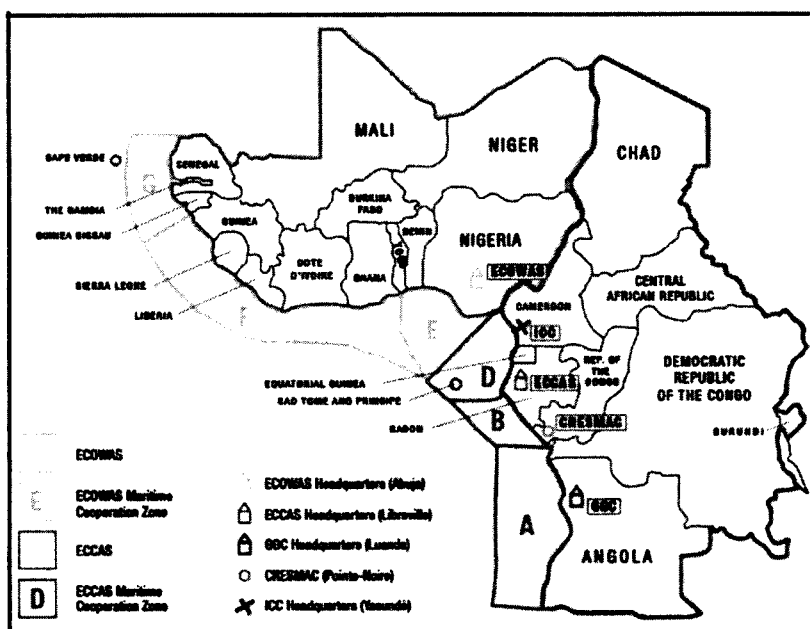
your vehicle filled with petrol or gasoline from a petrol tank is known as refueling, a similar operation performed for filling fuel oil into the ship tanks from an outside source is known as bunkering. Bunkers are mostly supplied on board the ship through a bunker barge, which is a relatively small boat or ship supplying fuel or other types of oils to relatively bigger ships.

⁵⁵See Osinowo, *supra* note 54 at 2. In 2013, almost all of the estimated \$10.2 billion worth of regional trade with the United Kingdom moving through the Gulf of Guinea was declared at risk of theft. Insufficient State presence in the Gulf of Guinea makes the economic losses incurred by the region difficult to estimate with precision; see also Jerimoth K. Ekelemu, *A Review of Aquaculture Production in Nigeria: Problems and Prospects*, GLOB. ACAD. GRP., <http://globalacademicgroup.com/journals/coconut/A%20Review%20of%20Aquaculture.pdf>. Nigeria is the most populous black nation in the world, with estimated population of about 150 million people. Its citizens as at the end of 2012 have a projected fish demand of 2.66 million tons of fish. Fish supply within the said period was 1.32 million tons. This figure was made up of 0.7 million tons from importation and 0.62 million tons from both artisanal and aquaculture. Of the local production, aquaculture contributes only 200,000 tons. Studies have shown that fish catch from the wild has reached its maximum production limit and production from this area is currently on the decline. The country has about 1.75 hectares of suitable sites for aquaculture development. Aquaculture production for 2012 was a meager 200,000 tons.

Table 3: Platform Profile of West African Navies and Coast Guards§

Country	Coastline (nmi)	Small Patrol Craft (IPC/SDB)				Landing Craft	Maritime Patrol Aircraft	Large Craft Acquisition in 15 yrs.	Small Craft Acquisition in 10 yrs	Sources of Acquisition
		Frigate	Corvette	Large Patrol Boats	Small Patrol Craft					
Benin	65			7				7	China, France	
Cabo Verde	530			2		1	2	4	China, Germany, US	
Cote d'Ivoire	281			3					France	
The Gambia	43			10					US, UK	
Ghana	292			8		1	6	4	US, Germany	
Guinea	173			4				3	US	
Guinea-Bissau	189			2				2	Portugal	
Liberia	360			2					US	
Nigeria									France, Germany, US, Italy, UK, Singapore, China, Israel, Nigeria, Netherlands	
Senegal	459	2		10		4	7	25	Netherlands, France, Spain	
Sierra Leone	286			3		1		9		
Togo	217			8				4	China, US	
	30			4				2	France, US	

§ See Osinowo, supra note 55 at 6. Source: HIS JANE'S FIGHTING SHIPS 2013–2014, ed. Commodore Stephen Saunders RN (London: Jane's Information Group, July 2013), 1021.



Estimates of the annual cost of piracy to the Gulf of Guinea range from \$565 million dollars to two billion dollars.⁵⁶ In 2004, the Nigerian Maritime Administration and Safety Agency (NIMASA) and the Nigerian Airforce unveiled a Satellite Surveillance Center (SSC) which tracks all vessels in Nigerian waters, and can identify each vessel's International Maritime Organization (IMO) number. Various other regional and international partners also adopted supported resolutions and programs as well. (See figure 2 above, Multinational Maritime Coordination Zones in West and Central Africa)⁵⁷

For example, in Nigeria and Guinea there is a certain degree of frustration because of the lack of effective prosecution of pirates and maritime criminals, which happens to be prevalent in many

⁵⁶See *Id.* at 2. The strategic development plans of many countries in the region rely on 60 percent of their revenues coming from hydrocarbon resources either sourced from or transiting through the Gulf. The governments in the region have been late to realize how their absence in the maritime domain not only costs them untold revenue but also undermines security on land, as criminal activities on the sea start and end onshore.

⁵⁷See *Id.* at 4. There is an ongoing effort to consummate an Economic Community of West African States (ECOWAS) Integrated Maritime Strategy (EIMS) modeled after the ECCAS effort, including creating a regional coordination center for maritime security in West Africa and three zones (E, F, and G) overseen by multinational maritime coordination centers (MMCCs). The pilot for these is ECOWAS' Zone E (the waters off Benin, Nigeria, and Togo).

Central and West Africa States. Why is this so? Because there is an absence of requisite domestic laws for prosecuting piracy and other instances of criminality; there are weak penalties and judicial processes. Many States, Navies, Coast Guards, and Maritime Security Agencies lack prosecution powers and rely on the police and other agencies for such a vital element of the enforcement cycle. As a way forward, enforcement harmonization is sought.⁵⁸ Regional understandings are beginning to take shape. A thorough review of each country's legal framework needs to be undertaken in order to prosecute piracy perpetrators. Whether or not these fishermen are pirates remains to be seen.⁵⁹ Regional management is being utilized as the most efficient method of regulatory fish stocks. During this article, we will be discussing the concept of law of the sea jurisdiction. A few comments are necessary so the reader understands what we mean by exclusive economic zone, territorial waters, etc.

V

JURISDICTION

A. Law of the Sea Terminology

Unregulated fishing occurs on the high seas in international waters beyond the exclusive economic zone. The following figure is a schematic jurisdictional diagram which has been drawn for the purpose of explaining terms that are utilized throughout this article. (See figure 3 below, Schematic Jurisdictional Diagram)⁶⁰

⁵⁸See Osinowo, *supra* note 55 at 6. Combating piracy and armed attacks on shipping in the Gulf of Guinea requires more effective measures across the piracy cycle from shore-based causes and offshore transit vulnerabilities to shore-based markets for piracy proceeds. Stemming the tide of attacks equally demands more deliberate cross-cutting efforts that incorporate preventive, deterrent, and collaborative measures among national and regional stakeholders.

⁵⁹See discussion *infra* Section V (B).

⁶⁰See Barry H. Dubner, *On the Interplay of International Law of the Sea and the Prevention of Maritime Pollution – How Far Can a State Proceed in Protecting Itself From Conflicting Norms in International Law*, 11 THE GEORGETOWN INT'L ENVTL. L. R., 137 140–41, 1998. Available at <https://poseidon01.ssm.com/delivery.php?ID=530112070066075004089014065105078022009056033020093009075021093091005076125006127023004010006016122030040069028102004115119097056014025055017114086064079021078097095005013070097066002023082122095009092126104>

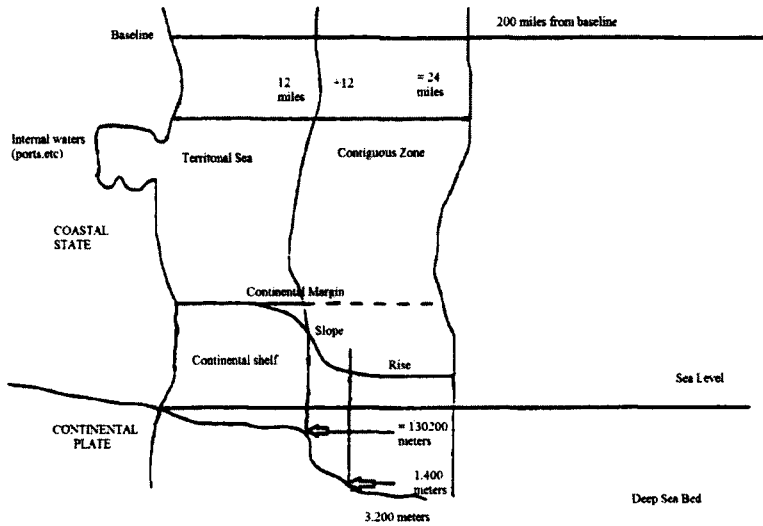


FIGURE 3. Schematic Jurisdictional Diagram

Every State has a baseline which is used to measure the States' diminishing jurisdiction as one moves seaward. The baseline is defined as the line that separates the inland waters from the waters seaward. It is simply a jurisdictional indicator and it serves really no other purpose.⁶¹ The coastal State exercises exclusive jurisdiction over its internal waters (e.g., ports and harbors). However, as one moves seaward from the baseline, the State exercises almost exclusive jurisdiction over its territorial sea. The

104025104085123109094006115096091089123026&EXT=pdf. (This graphic is reproduced with publisher permission from Barry E. Carter & Phillip R. Trimble, *International Law* 990-92, Charts 9-1, 9-2, 9-3 (2d ed. 1995) Aspen Law & Business (Aspen Publishers, Inc.). This figure is a schematic jurisdictional diagram which has been drawn for the purpose of introductory analysis: Every coastal state has a baseline which is used to measure the state's diminishing jurisdiction as one moves seaward. The coastal state exercises exclusive jurisdiction over its internal waters (e.g., ports and harbors). As one moves seaward from the baseline, the state exercises almost total jurisdiction over its territorial sea).

⁶¹U. N. Convention on the Law of the Sea, Dec. 10, 1982, available at http://www.un.org/Depts/los/convention_agreements/texts/unclos/UNCLOS-TOC.htm.

- The normal baseline for measuring the breadth of the territorial sea is the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State.

- In localities where the coastline is deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity, the method of straight baselines joining appropriate points may be employed in drawing the baseline from which the breadth of the territorial sea is measured.

flow of international commerce is at the heart of all maritime conventions, and it has to flow freely, uninhibited, without danger to life, limb, and without the fear of wide spread environmental contamination. The territorial sea is twelve miles from the baseline.⁶² In that area, the coastal State has almost complete jurisdiction except for the doctrine of innocent passage.⁶³ As you will read throughout the article, sometimes authors or publicists cite "territorial waters as coastal waters" either referring to territorial sea or to inland waters. The zone is twelve miles out.

In Figure 3, you will see that the next zone is up to 24 miles out from the baseline. It is called the Contiguous Zone, and the coastal State exercises even less jurisdiction in this zone than in the territorial sea. Historically, this zone is used for customs, regulation, navigation, sanitation, and a few other items.

Finally, the exclusive economic zone is measured 200 miles from the baseline.⁶⁴ You will see some legal writers saying that the exclusive economic zone is not part of the high seas. The reality is, that it is part of the high seas and so is the contiguous zone. What is happening is that the State's jurisdiction is even less in the exclusive economic zone, and it was set up that way so that the States could regulate their own mineral wealth, fishing

⁶²See *Id.* Every State has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles, measured from baselines determined in accordance with this Convention.

⁶³See *Id.* In Article 18 of the convention the meaning of innocent passage is explained as;

- (1) Passage means navigation through the territorial sea for the purpose of:
 - (a) traversing that sea without entering internal waters or calling at a roadstead or port facility outside internal waters; or
 - (b) proceeding to or from internal waters or a call at such roadstead or port facility.
- (2) Passage shall be continuous and expeditious. However, passage includes stopping and anchoring, but only in so far as the same are incidental to ordinary navigation or are rendered necessary by *force majeure* or distress or for the purpose of rendering assistance to persons, ships or aircraft in danger or distress.

⁶⁴See *Id.* Article 55-75 go into detail to explain and delineate the purpose of the EEZ;

The exclusive economic zone is an area beyond and adjacent to the territorial sea, subject to the specific legal regime established in this Part, under which the rights and jurisdiction of the coastal State and the rights and freedoms of other States are governed by the relevant provisions of this Convention.

The exclusive economic zone shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.

licensing, and economically related matters only. What we look at as we go further are restrictions in international law requiring these States to set up, for example, safety channels for navigation, etc. So, if you read on your own and find that somebody is saying that the exclusive economic zone is not part of the high seas, they are mistaken.⁶⁵ It was the intent of the drafters of the 1982 UNCLOS that it would be part of the high seas and there is nothing to the contrary in the UNCLOS.

B. Are Illegal Fishing Boats Considered "Pirates"?

Piracy is a subject that I have written about for years and lectured about all over the world. I never heard the word "piracy" used in connection with the term illegal fishing. We double-checked order to see if there is any merit to calling IUU fishermen "pirates." Do States call them "pirates" because it sounds as though it should get greater urgency and greater discussion regarding handling of the IUU problem? That is, if you equate piracy with illegal fishing, more people will be inclined to listen to you. In any event, both in 1958 The Geneva Convention on the High Seas and the 1982 UNCLOS defined "Piracy," as follows:

- (1) any illegal acts of violence, detention or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed . . .⁶⁶

⁶⁵Barry Hart Dubner, *Human Rights and Environmental Disaster - Two Problems That Defy the "Norms" of the International Law of Sea Piracy*, 23 SYRACUSE J. INT'L. & COM. 1, 46-8 (1997). The State's jurisdiction diminishes further when the contiguous zone, which extends for twelve miles beyond the territorial waters, reaches the high seas. The contiguous zone is a limited area of jurisdiction of the coastal state (e.g., navigation, sanitation, customs, or fiscal) and is actually part of the high seas. The high seas areas are open to all nations and therefore the coastal state is not allowed to exercise its jurisdiction in this area (with limited exceptions, e.g., the exclusive economic zone).

⁶⁶See *Customary v. Treaty Law*, 42 J. MAR. L. & COM. 75, (Jan. 2011). The 1958 Geneva Convention on the High Seas defined "piracy" as follows:

Article 15

(1) Any illegal acts of violence, detention or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed:

- (a) On the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft;

As the reader will observe, piracy includes any illegal acts of violence, detention or any act of depredation committed for private ends by the crew or the passengers of a private ship or a private aircraft, directed (a) on the high seas against another ship or aircraft or against persons or property onboard such ship or aircraft; (b) against the ship, aircraft, persons or property *outside the jurisdiction of any state*.⁶⁷

I assume that part (b), as stated above, could be where the argument in favor of the word piracy could be made, because part (b) states that the acts of violence, detention or any act of depredation could occur on property in a place outside the jurisdiction of any State. Could this include fishing? A quick look at the International Law Commission's (ILC) report on sea piracy,⁶⁸ and the Harvard draft/study of 1932,⁶⁹ would indicate

(b) Against a ship, aircraft, persons or property in a place outside the jurisdiction of any State;

(2) Any act of voluntary participation in the operation of a ship or of an aircraft with knowledge of facts making it a pirate ship or aircraft;

(3) Any act of inciting or of intentionally facilitating an act described in subparagraph 1 or subparagraph 2 of this article.

⁶⁷Yearbook of the International Law Commission, July 8, 1955, 1 U.N. 52-53. Mr. Francois, a special Rapporteur, said that there were three schools of thought on the problem of defining piracy. One view was that piracy could only take place on the high seas. Another was that piracy could only occur in a place not within the territorial jurisdiction of any State, a definition which included not only the high seas, but also unoccupied lands such as had been mentioned by Sir Gerald Fitzmaurice. The third, held by a very few writers on International law, W.E. Hall, for example, was that piracy could consist in acts of violence within the territory of a State after descent from the sea. As explained at the commission's 290th meeting, The Harvard Report, together with the whole weight of Jurisprudence, was in favor of the limitation embodied in his own revised draft.

⁶⁸See *Id.* This volume contains the summary records of the seventh session of the Commission (282d to 330th meeting); in accordance with General Assembly Resolution 987(X) of 3 December 1955, they are printed in English only; they include the corrections to the provisional summary records which were requested by members of the Commission and such drafting and editorial modifications as were considered necessary; in particular, working papers submitted during the session have been incorporated in the summary records.

⁶⁹See Bartosz Fieducik, *The Definition of Piracy under Article 101 of the 1982 United Nations Convention on the Law of the Sea – An Attempted Legal Analysis*, available at http://repozytorium.uwb.edu.pl/jspui/bitstream/11320/2009/1/BSP_10_2011_Fieducik.pdf. Under the Harvard Draft the following activities constituted piracy: 1) Robbery committed by using a private ship to attack another ship; 2) Intentional, unjustifiable homicide, similarly committed for private ends; 3) Unjustifiable violent attack on persons similarly accomplished for private ends; 4) Any unjustifiable

neither in the former because the ILC referred to that type of situation as an “unoccupied lands,” nor in the Harvard draft/study of 1932 (which prepared draft articles for a possible convention). The Harvard study had a section called “Paradox on the High Seas,” and number five within that section states “any unjustifiable depredation or malicious destruction of property similarly committed for private ends.”⁷⁰ So it is questionable whether piracy is actually equated with illegal fishing properties and it would take, I believe, an expansion of the current definition to get that result.

However, we have been talking about piracy on the high seas, and the International Maritime Organization (IMO)/United Nations defines Piracy as Armed Robberies (in areas outside the high seas within the jurisdiction of a State) in Resolution A.(1025.26) “Code of Practice For The Investigation of Crimes of Piracy and Armed Robberies Against Ships.”⁷¹ Armed Robbery

depredation or malicious destruction of property similarly committed for private ends; 5) Attempts to commit the foregoing offences; 6) Cruising with the purpose of committing any of the foregoing offences; 7) Cruising as professional robbers in a ship devoted to the commission of such offenses as the foregoing; 8) Participation in sailing a ship (on the high sea) devoted to the purpose of making similar attacks in territorial waters or on land, by descent from the sea. See Harvard Draft Convention, p. 773–775.

⁷⁰ See Barry Hart Dubner, *On the Definition of the Crime of Sea Piracy Revisited: Customary vs. Treaty Law and the Jurisdictional Implications Thereof*, 42 J. MAR. L. & COM. 71 (2011). The Commentators to the Harvard Draft are quick to point out that “... there is no authoritative definition” of the crime of piracy. 30 In fact, many definitions were proposed, most of which they deemed to be inaccurate. 31 The divergence in opinion can be seen by looking at scholars. All pirates are persons who depredate by sea or land without authority from the sovereign. 32 The Harvard Draft points out that the definition “is at once too wide and too narrow to correspond exactly with the acts which are now held to be piratical, but it may serve as a starting-point by directing attention to the external characteristics by which, next to the violent nature, they are chiefly marked...”

⁷¹ Code of Practice for the Investigation of Crimes of Piracy and Armed Robbery Against Ships, Res. A.1025(26), IMO (Dec. 2, 2009), available at <http://www.imo.org/en/OurWork/Security/PiracyArmedRobbery/Guidance/Documents/A.1025.pdf>. For the purpose of this Code:

- “Piracy” means an act defined in article 101 of the United Nations Convention on the Law of the Sea (UNCLOS)

- “Armed robbery against ships” means any of the following acts:

- ◊ any illegal act of violence or detention or any act of depredation, or threat thereof, other than an act of piracy, committed for private ends and directed against a ship or against persons or property on board such a ship, within a State’s internal waters, archipelagic waters and territorial sea;

against ships means any of the following acts: any illegal act of violence or detention, or any act of depredation, or theft thereof other than an act of piracy, committed for private ends against a ship or against persons or property onboard on such ships within a State's internal waters, archipelagic waters and territorial sea.⁷² This is an interesting definition because "piracy" is very restricted to Armed Robbery. I assume that if I were looking at the history of why they used this definition, the IMO probably was attempting to differentiate from having piracy exclusively as a high seas crime rather than a crime occurring in territorial waters, thereby restricting it to Armed Robberies under a coastal State's municipal jurisdiction.

VI SUSTAINABILITY VERSUS IUU FISHING

How can the goal of reaching a maximum sustainable yield ever be achieved while IUU fishing is occurring? The various IUU fishing problems that occur are due to, *inter alia*, the fact that a significant portion of illegal catch is mixed with legal catch—often at sea on huge processing vessels, making it virtually impossible to tell one from the other.⁷³ It is mentioned in the Pew report that certified seafood often requires a "chain of custody" which is coexistent to prevent uncertified IUU vessels from entering the system.⁷⁴ However, the Pew Research Center points out that it will be years before they can trace all seafood to the original taker. There is also a problem with overfishing.

Overfishing is different from illegal fishing. Overfishing occurs geographically in domestic and high seas fisheries where politicians, managers or industries fail to set, implement/enforce

◇ any act of inciting or of intentionally facilitating an act described above.

⁷²Id. at 4.

⁷³See FAQ: Illegal, Unreported, and Unregulated Fishing, *supra* note 45 at 5. Illegal fishing historically has been a low-risk, high-return activity. That is, the chances of being caught are relatively low as are the costs of fines and prosecution, particularly when compared with the huge profits that can be made by selling the fish.

⁷⁴See Id. at 5. Several organizations are working to improve the traceability of seafood. But achieving full traceability of all seafood will take many years.

an appropriate catch level. Some illegal fishing includes fishing that takes place over and above the established catch limits.⁷⁵

Where geographically, does this occur? It occurs all over the world.⁷⁶ The problems with this type of fishing are that the vessel owners are generally subsidized, and that together with the lack of regulation in the fishing industries in developed countries, and the lack of political will to reduce the size of domestic fishing vessels, have all led to substantial excess of capacity (i.e., too many boats catching too few fish); the other problem is that the fishing vessels are so large and powerful that their ability to catch outpaces capacity of fish to replenish their stocks (never reaching a maximum sustainable yield) and they go out further to high seas or into the territorial waters of third world countries.) Recall my discussing the Seychelles' fishing problem where South/North Korea were involved at the time I consulted for them.⁷⁷

It is easy to establish shell entities on paper. Shell entities are those that "own" a vessel but lack physical offices or identifiable individuals that are in control. The key problem in this area deals with lack of policing on behalf of the flag States. "Flags of Convenience" are issued by many countries that should be responsible for monitoring the activity of their vessels but do not have the capacity to do so.⁷⁸ Even if they wanted to monitor IUU

⁷⁵Id. at 6.

⁷⁶See Id. at 6. IUU fishing occurs worldwide, both within countries' exclusive economic zones (EEZs) and on the high seas. There are IUU "hot spots" but these shifts depending on the availability of fish stocks and the nature or lack of local and regional policies and enforcement measures. Vessel owners who want to engage in IUU fishing will exploit whatever circumstances they can, and they can move their vessels around the oceans quickly in that quest.

⁷⁷Christy, *supra* note 4.

⁷⁸*Flags of Convenience – Avoiding the Rules by Flying a Convenient Flag*, INT'L TRANSP. WORKER'S FED'N, available at <http://www.itfglobal.org/en/transport-seafarers/in-focus/flags-of-convenience-campaign/>. A flag of convenience ship is one that flies the flag of a country other than the country of ownership. For workers onboard, this can mean:

- Very low wages
- Poor on-board conditions
- Inadequate food and clean drinking water
- Long periods of work without proper rest, leading to stress and fatigue
- By 'flagging out,' ship owners can take advantage of:
- Minimal regulation
- Cheap registration fees

activities, they do not have coast guards or navies to patrol their waters. These “flags of convenience” are issued by many countries (e.g., Panama, Liberia, Albania, to name just a few). Some of these countries do not want to join Regional Fisheries Management Organizations (RFMO). So, there is really no State policing these types of vessels. They have a valid flag and/or registration and the flag is usually from a host country. The IUU fishing vessels fish until they are captured. They are licensed on a provisional basis that may lapse, but this does not really stop these vessels from fishing illegally. It is difficult to find out the ownership of a vessel. Fishing vessel owners can conceal their activities and identity and evade compliance with officials. The main problem is that they are not required to have a unique vessel identification number, similar to the Vehicle Identification Number (VIN) on a car. But the most important problem is this: *while the IMO requires a unique form of vessel identification system, fishing vessels are exempt from the requirement to use them!* Owners use flags of convenience to avoid taxes, as well as health and safety regulations from the labor laws of a developed country.⁷⁹ There is no such thing as a uniform system for tracking fishing vessels today, and information sharing between States is almost nonexistent.

The RFAO agreement on Port State Measures was implemented to prevent, deter, and eliminate IUU fishing in the Mediterranean and Black Seas.⁸⁰ The overall framework and the general provisions and requirements for entry into ports, use of

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- Low or no taxes
 - Freedom to employ cheap labour from the global labour market.

⁷⁹Id.

⁸⁰Committee on Fisheries, Combatting Illegal, Unreported and Unregulated (IUU) Fishing on its Thirty-Second Session, FOOD & AGRIC. ORG. OF THE U.N. COFI/2016/5 REV. 1 (2016), available at <http://www.fao.org/3/a-mq655e.pdf>. In February 2015 FAO convened a workshop in Rome, Italy, to consider methodologies for estimating the magnitude of IUU fishing at the global level. The workshop suggested that FAO could:

- (i) Coordinate a ‘Study of IUU fishing studies’ (the study) to review the different methodologies being used to estimate IUU fishing;
- (ii) Lead a process to develop technical guidelines for future studies so they could be conducted in a way that would allow for estimates to be combined to contribute to a global estimate; and
- (iii) Consider indicators of IUU fishing for inclusion in FAO’s bi-annual publication on the State of Fisheries and Aquaculture.

ports, inspections, and follow-up actions are set forth in the Port State Measures agreement. The drafters thought that the tools for enforcement at the national level under this treaty⁸¹ should include fleet registers, licensing systems, observer programs, inspection schemes, and intelligence sharing as well as electronic tools. Regional and global monitoring, control and surveillance (MCS) tools, and regional cooperation through Regional Fisheries Bodies (RFB) were also listed.⁸² Many countries have not participated in this agreement. Some reasons include, the lack of awareness by the administrations and governments of trade implications; the benefits to management; outdated legal frameworks; the need for cooperation between the countries; lack of political will; financial constraints; lack of cooperation between authorities; lack of training; and the need for modern technology.⁸³

The strategy for implementation of the PSMA would need to include the ability to assess current policies, the legal and institutional frameworks, and to utilize appropriate actions.⁸⁴

⁸¹See *Id.* at 3. With the agreement in force, Parties may consider convening an inception meeting that could address, *inter alia*, the establishment of the Ad Hoc Working Group under Article 21(6) of the Agreement which is expected to periodically report and make recommendations to the Parties on funding mechanisms in support of assistance to developing States Parties.

⁸²*Id.* at 5.

⁸³U.N. FAO, FAO Workshop on Implementing the FAO Agreement on Port State Measures to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing in the Mediterranean and Black Sea, ¶ 23, FIAP/R1151 (En) (March 4, 2016). Ms. Lori Curtis who is an FAO Consultant presented the cost and benefits of the implementation of the agreement as a minimum standard for the region. In her presentation she outlined the situation of the agreement's implementation in the region, the benefits and challenges of the agreement, reasons for non-ratification, cost and benefits of implementation, implications of non-ratification and assistance for implementation. Ms. Curtis presented the benefits of the Agreement which included: reducing unfair competition from illegal fishers (promote legal fishers), contributing to the sustainability of the fisheries resources, securing legitimate income for fishers, strengthening fisheries governance and management, and improving the exchange of information at national and international level. At the end of her presentation Ms. Curtis referred to article 21 of the Agreement as a mechanism to support developing States in the implementation of the agreement.

⁸⁴*Id.* at 6 ¶ 28. Mr. Lobach delivered a presentation that introduced general considerations on the need for policy and legal frameworks as well as how to strengthen the institutional capacity and coordination to support implementation of port State measures. He noted the considerations to be undertaken in order to develop such a policy and highlighted the provision of the agreement that would need to be implemented within a domestic legal framework, and he also suggested ways to address possible institutional constraints.

Article 38(1) part (a) of the Statutes of the International Court of Justice (ICJ) is used as reference and source of international law.⁸⁵ These sources include international conventions, agreements, treaties (expressly recognized by states), and part (b) is international customs, etc.⁸⁶

Emphasis that the PSMA must be reflected in national policies and laws will be a principal means by which States give effect to international law. Constraints which have hampered the full implementation of the treaty include, the lack of national legislation; not allowing coastal State access to foreign fishing vessels in international ports; no designation of ports; lack of properly trained inspectors in designated ports; lack of shared competence between different national administrations from management and control of the ports; and finally, the lack of a single coherent system for the exchange of information. Port State Measures underpin the use of a Vessel Monitoring System (VMS), and complying States seek ratification of the agreement. On February 11, 2016 President Obama approved the ratification of the PSMA.⁸⁷

⁸⁵Statute of the Court, I.C.J. Article 38:

(1) The Court, whose function is to decide in accordance with international law such disputes as are submitted to it, shall apply:

(a) international conventions, whether general or particular, establishing rules expressly recognized by the contesting states;

(b) international custom, as evidence of a general practice accepted as law;

(c) the general principles of law recognized by civilized nations;

(d) subject to the provisions of Article 59, judicial decisions and the teachings of the most highly qualified publicists of the various nations, as subsidiary means for the determination of rules of law.

(2) This provision shall not prejudice the power of the Court to decide a case *ex aequo et bono*, if the parties agree thereto.

⁸⁶*Id.*

⁸⁷Cliff White, *U.S. Ratifies Port State Measures Agreement to Combat IUU Fishing*, SEAFOODSOURCE, Feb. 16, 2016, available at <https://www.seafoodsource.com/news/supply-trade/us-ratifies-port-state-measures-agreement-to-combat-iuu-fishing>.

With a signature from President Barack Obama the United States formally ratified Port State Measures Agreement (PSMA), making the U.S. an official member of the international accord designed to combat illegal, unreported and unregulated fishing. The U.S. becomes the 21st party to ratify the PSMA, which goes into effect once 25 parties have signed and ratified the agreement. Larger countries that have signed on so far include Australia, Norway, and South Korea, as well as the European Union, which counts as one signatory party under the accord.

The Committee on Fisheries, in their early-32d session held in July 2016, set forth an overview of the status and information of the 2009 FAO Agreement on Port State Measures. The treaty itself came into effect on 5 June 2016.⁸⁸ Within the treaty, the parties considered and created an Ad Hoc Working Group under Article 21(6) of the treaty.⁸⁹

The treaty was thought to be the best way to stop IUU fishing by taking action that will aim to increase transparency, traceability, and dissemination of data on the global fishing fleet and its operations.⁹⁰ The FAO is collaborating with both developed and developing countries to implement an operational Global Record pilot project with broad regional coverage.⁹¹ The Global Record Informal Open-Ended Technical and Advisory Working Group (GRWG) considered, on an interim basis, an option of using a vessel's data from independent and reputable sources, especially from the Information Handling Services Maritime and Trade (IHSM).⁹² In its role, the manager of the IMO

⁸⁸Committee on Fisheries, *supra* note 83 at 3. It entered into force 30 days after the date of deposit with the Director-General of FAO of the twenty-fifth instrument of ratification, accession, approval or acceptance. With the Agreement now in force, Parties may consider convening an inception meeting that could address, *inter alia*, the establishment of the Ad Hoc Working Group under Article 21(6) of the Agreement, which is expected to periodically report and make recommendations to the parties on funding mechanisms in support of assistance to developing States Parties.

⁸⁹See *Id.* at 3. The Terms of Reference (ToRs) for this ad hoc Working Group were drawn up by a technical meeting in 2011 and endorsed by COFI at its thirtieth session in 2012. According to these ToRs, the first meeting of the ad hoc Working Group shall be convened between 90 and 120 days after the Agreement has entered into force. The ToRs of the funding mechanisms were also drafted by the technical meeting in 2011 but need to be reviewed and adopted by the Ad Hoc Working Group.

⁹⁰See *Id.* at 4. The Global Record as a tool that supports the implementation of international instruments such as the PSMA, is in line with COFI's requests at its last session, the development of the Global Record has progressed in a number of areas. The Global Record Informal Open-Ended Technical and Advisory Working Group (GRWG) was established to provide advisory services, specifically to clarify outstanding issues and to find a solution for long-term financing.

⁹¹See *Id.* at 4. Some members gave their commitment to participate in the pilot project and the Global Record program is supporting a number of partner countries in building their capacities and coordinating the submission of data to the Global Record. Wider participation would secure the successful implementation of the Global Record.

⁹²See *Id.* at 4. The GRWG acknowledges that States are responsible for data and its provision to the Global Record. However, this is being considered in light of immediate difficulties that some States may face in providing information to the Global Record pilot

number is being used as Unique Vessel Identifier (UVI) for the global record.⁹³ The Ad Hoc Working Group (AHWG) on IUU fishing held its third session in London on November 16-18, 2015.⁹⁴ It recommended that the FAO and IMO explore the possibility of expanding the application of the IMO monitoring scheme to include fishing vessels that are currently outside its scope, in particular, fishing vessels of less than 100 gross tonnage.⁹⁵ Dr. Lisa Otto was a bit skeptical about the enforcement of the PSMA, and the implementation of measures for curtailing and stopping IUU Fishing.⁹⁶ She said "...it surely can't be considered groundbreaking until it begins to generate a critical mass."⁹⁷ She called for an even stronger treaty by stating:

project. The IHSM has the role as the manager of the IMO number that is being used as the Unique Vessel Identifier (UVI) for the Global Record.

⁹³*Unique Vessel Identifier – Global Record*, FAO FISHERIES & AQUACULTURE DEPT. (July 16, 2013), available at <http://www.fao.org/fishery/topic/18021/en>. The Unique Vessel Identifier (UVI) is a global unique number that is assigned to a vessel to ensure traceability through reliable, verified and permanent identification of the vessel. The UVI will be with the vessel for its entire life, regardless of changes in flag, ownership, name etc. It is the key component of the Global Record and it is necessary to maintain its integrity.

⁹⁴Committee on Fisheries, *supra* note 83 at 4.

⁹⁵*Id.* at 4.

⁹⁶See Lissa Otto, Biography, available at <http://www.coventry.ac.uk/research/research-directories/researchers/lisa-otto/>. Lisa Otto holds BA and BA Honors degrees in subjects of Politics and International Relations from the University of Johannesburg, a first-class MA in International Peace and Security from King's College London, and a D. Litt et Phil in Political Studies from the University of Johannesburg. For her doctoral research, she conducted an in-depth study of maritime crime in West Africa, including visiting research at the International Maritime Organization and the University of Greenwich's Maritime Institute. Before joining Coventry, Lisa has worked at South African think tanks, the Institute for Security Studies, and the South African Institute of International Affairs, and political risk analysis in Johannesburg and London.

⁹⁷See Lisa Otto, 'Ground-Breaking' PSMA Comes into Force, 8 MAR. SEC. BRIEFINGS, available at <http://www.coventry.ac.uk/Global/08%20New%20Research%20Section/Researchers/CTPSR/Maritime%20Security%20Briefing%208.pdf>. Those having ratified the PSMA are now bound by law to implement measures portside to detect vessels involved in IUU fishing, intercept their catches, and share information about known offenders far and wide. This could be useful for the West African region, for example, where IUU fishing is thought to cost these economies US\$1.3 billion per annum, with estimates suggesting that catches may be 40 per cent higher than what is reported. This signals the depletion of a precious resource that could be creating opportunities for local communities, and contributing to food security in this region. Sadly, however, only two countries in West Africa have become party to the agreement – the Gambia, and Gabon (while Guinea Bissau is yet to deposit its ratification) – forming

“Evidently, more work needs to be done to generate consensus surrounding the need for an agreement on IUU fishing that could bring practical outcomes in making it difficult for illegal fishers to continue to operate.”⁹⁸ On May 6, 2016, 25 countries had ratified the PSMA. Per the treaty, pacifist provisions go into effect after 25 countries had ratified it.⁹⁹ The problem is that the countries that have not ratified it are the greatest users of IUU vessels (e.g. China, Japan, et al.).

China has started using a national military force because of the Chinese distant-water fishing vessels’ suspicion of illegal operations.¹⁰⁰ Indonesia has taken steps to confiscate and blow up IUU Fishing vessels with explosives in an effort to deter future violations. PSMA attempts to hamper IUU operations by denying easy access to port facilities for suspected illegal operations.¹⁰¹

part of the group of only six countries of 54 on the African continent that have signed up to this agreement.

⁹⁸Id.

⁹⁹See Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, FAO, available at http://www.fao.org/fileadmin/user_upload/legal/docs/2_037t-e.pdf. What the author calls ‘pacifist provisions’ are the articles in the agreement which state the purpose of the agreement itself, which came to be as a concern about the continuation of illegal, unreported and unregulated fishing and its detrimental effect upon fish stocks, marine ecosystems and the livelihoods of legitimate fishers, and the increasing need for food security on a global basis. The conscious role of the port State is in the adoption of effective measures to promote the sustainable use and the long-term conservation of living marine resources. The agreement recognizes that measures to combat IUU fishing should build on the primary responsibility of flag States and use all available jurisdiction in accordance with international law, including port State measures, coastal State measures, market related measures and measures to ensure that nationals do not support or engage in IUU fishing.

¹⁰⁰See Tabitha G. Mallory, *China As a Distant Water Fishing Nation*, USCC (Jan. 26, 2012), available at https://www.uscc.gov/sites/default/files/1.26.12mallory_testimony.pdf. This is Dr. Mallory’s testimony before the U.S.-China Economic and Security Review Commission. She testified that the Chinese are calling the 21st century the “ocean century.” A strong ocean country, in the mind of one Chinese scholar, has three components: economic, scientific and technological, and military. One issue that lies at the intersection of these three facets is marine fisheries. China is already the world’s largest producer of marine catch, producing 12.7 million tons out of an estimated global total of 79.9 million tons in 2009 (which is about 16 percent of the world total). As such—and furthermore as 85 percent of global fisheries are fully exploited, overexploited or depleted—China’s behavior in international fisheries has considerable economic, security, environmental and governance implications for the United States.

¹⁰¹MarEx, *Will a New Treaty Slow Down Illegal Fishing?* THE MAR. EXEC. (June 23, 2016), available at <http://www.maritime-executive.com/editorials/will-a-new-treaty->

The PSMA requires that parties designate a specific port for use by foreign fishing vessels, making inspection and control easier.¹⁰² These vessels must request permission to enter ports ahead of time and inform authorities about the fish that they have on board. Once in the port, they must permit inspection of their log books, licenses, fishing gear, and actual cargo.¹⁰³

Dr. Lisa Otto had expressed skepticism of the PSMA's ability to drive change. She noted that six of the world's top ten fish-producing countries (i.e., China, Peru, India, Japan, Vietnam and Russia) have not ratified the treaty, leaving a large number of ports accessible to the world's largest fishing boat fleets without the application of PSMA's rules.¹⁰⁴ Also, Dr. Dana Miller, a research scientist with the University of British Columbia's Fisheries' Center in Canada,¹⁰⁵ suggested that the challenge for the PSMA would be ratification and implementation. It is very important, she said, that the agreement is universally ratified and enforced; otherwise there is a higher risk that more ports (of convenience) will appear and illegal fishers will find alternate routes through which to access global markets.¹⁰⁶

Major problems, aside from illegal fishing, are human trafficking (i.e., slavery) on fishing vessels, and environmental damages which are extremely relevant in any discussion of IUU

slow-down-illegal-fishing. The Port State Measure Agreement (PSMA) on combatting illegal fishing went into effect, putting an array of new tools for coordination and action between nations to deny safe haven to fishing vessels operating outside the law. "The PSMA will drive the seafood industry toward greater sustainability and have significant ripple effects throughout the entire fisheries supply chain. Let no port state be known and targeted by [illegal] fishing operators as a shelter for non-compliance," said the director general of the UN Food and Agriculture Organization.

¹⁰²Id. at 2.

¹⁰³Id. at 2.

¹⁰⁴See Id. at 2. Dr. Otto also stated that the FAO has called PSMA 'groundbreaking', and whilst the organization should surely be hailed for the work that it has done to bring the PSMA into effect and to develop the capacity needed to implement the measures it entails, it surely cannot be considered groundbreaking until it begins to generate critical mass.

¹⁰⁵Dana Miller, Biography, available at <https://theconversation.com/profiles/dana-miller-102939>. Post-Doctoral Fellow, Fisheries Economics Research Unit, University of British Columbia. Dana's research focuses on the topic of international fisheries management and economics - specifically, the practice of fishing under flags of convenience (FoCs), aiming to identify factors which incentivize or discourage their use.

¹⁰⁶MarEx, supra note 104 at 3.

Fishing. Let us now turn and look at the problems to see what can be done to eliminate them.

VII HUMAN TRAFFICKING (I.E., SLAVERY ON FISHING VESSELS) AND ITS EFFECT ON THE ENVIRONMENT

The widespread failure to control operations of fishing vessels together with a demand for cheap seafood has led to a failure to protect marine biodiversity, and failure to protect human rights.¹⁰⁷ Stocks are declining due to overfishing. This alone is causing fishing companies to seek ways to maintain profits by investing in new fishing gear and technologies to find and catch fish, all the while cutting costs in other areas including crew payments and safety. There is insufficient monitoring, control, and surveillance both at sea and in ports, and also practices such as transshipping "catches to other vessels at sea facilitates the flouting of fisheries regulations while allowing these failures to continue largely unseen."¹⁰⁸ As a result of these problems, human rights are threatened.¹⁰⁹

The human rights at stake include, the right to live; to organize; to have freedom from torture and other cruel, inhumane, or degrading treatment; as well as freedom from slavery and forced labor. In addition, the right to work in favorable conditions; the right to health and to a healthy environment; and the right to have access to food for both worker and communities affected by unsustainable fishing practices.¹¹⁰ Accordingly, the right of access

¹⁰⁷Envtl. Just. Found., *supra* note 22. As managers have failed to limit the number of vessels and gear deployed at sea, and technology improvements have allowed vessels to spend longer times at sea at greater distances from the shore, fish stocks have declined. Vessel owners seek to maintain profits by investing in new fishing gear and technologies to find and catch fish, while cutting costs in other areas including on crew payments and safety.

¹⁰⁸See *Id.* at 2. In turn, government fishing subsidies mitigate low fleet profitability while undermining attempts to put in place rules ensuring that these problems are effectively addressed.

¹⁰⁹*Id.* at 2.

¹¹⁰See *Id.* at 2. This information can also be found in Art. 20 of the Universal Declaration of Human Rights; ILO Convention N87 on Freedom of Association and Protection of the Right to Organize.

to food has been commonly recognized not just as an individual right, but also as a community right. Fish are also strictly and necessarily related to the cultural traditions of certain people. In addition, the right to food has been related to the right to self-determination as one of the essential elements to native people to freely pursue their economic, social, and cultural development.¹¹¹

As far as the impact on human rights and biodiversity is concerned, losses and violations at sea have created a maritime tragedy.¹¹² No one knows how many fish there are, so no one can actually set forth a maximum sustainable yield. The most recent data from 2013 shows that 31.4% of stocks are overfished and 58.1% are fully fished.¹¹³

Overfishing of the capacity of unselected fishing has larger consequences with the wrong policy.¹¹⁴ Overcapacity is a major

¹¹¹See *Id.* at 3. This information can also be found in Art. 11 International Covenant on Economic, Social and Cultural Rights (ICESCR) in general comment 12, and in the UN Special Rapporteur on Right to Food which can also be found in Art. 1.1 ICCPR and ICESCR.

¹¹²See Carl Zimmer, *Global Warming Alters Arctic Food Chain from the Bottom Up*, *Scientists Say*, N.Y. TIMES, Nov. 22, 2016, available at https://www.nytimes.com/2016/11/22/science/global-warming-alters-arctic-food-chain.html?_r=0. Confirming earlier research, scientists reported that global warming is altering the ecology of the Arctic Ocean on a huge scale. The annual production of algae, the base of the food web, increased an estimated 47 percent between 1997 and 2015, and the ocean is greening up much earlier each year. These changes are likely to have a profound impact for animals further up the food chain, such as birds, seals, polar bears and whales. But the scientists still do not know enough about the biology of the Arctic Ocean to predict what the ecosystem will look like in decades to come.

¹¹³See *Env'tl. Just. Found.*, *supra* note 22 at 4. The consequences of overfishing and unselective fishing are numerous. Population declines will very likely have long-term repercussions on the genetic diversity, and in turn, evolutionary decay of overfished species – losses that are more difficult to recover than simple population numbers.

¹¹⁴See J.R. Beddington et. al., *Current Problems in the Management of Marine Fisheries*, *SCI.* 316, 1713 (June 2007), available at <http://science.sciencemag.org/content/316/5832/1713.full>. Where management is weak or non-existent, the economic factors underlying overfishing in commercial fisheries have been generally understood since the 1950s. In short, when multiple fishers compete to catch fish from a given population, each fisher maximizes his net income by continuing to fish as long as the value of his catch exceeds the cost of catching it. An equilibrium, called the bionomic equilibrium, is reached only when fishing has reduced the fish population to a level at which catch rates are barely sufficient to cover the costs of fishing. The population is then maintained at this level through biological processes of natural growth and reproduction. Thus, if the price:cost ratio is high, the bionomic equilibrium will result in a low stock of fish, and hence a low annual catch level—two characteristic features of overfishing.

cause of the crises in world fisheries.¹¹⁵ Overcapacity is triggered by rapid fisheries development, government subsidies, and competition between fishers for shrinking pools of fish in particular. “. . . Harmful government subsidies are widely recognized as a major factor driving the generation of overcapacity.”¹¹⁶ Global fisheries subsidies amount to USD 35 millions (2009 dollars).¹¹⁷ The vast majority of the 4.6 million vessels that belong to a strong global fishing fleet are made up of vessels smaller than twelve meters long, and include many subsistence fishers who have no ability to better themselves either with advance technology or finding new fishing grounds.¹¹⁸ They leave every day from shore to go out a short distance (which is probably much longer now) and then return with little or no fish.¹¹⁹ An example of the problems in the tuna industry is the linkage between IUU Fishing, forced labor and human rights abuses. The tuna industry is a global industry operating usually at great distances from the shores where these abuses have come together. Tuna is the most economically viable fish in the world as well as an important predator species in maritime ecosystems.¹²⁰ The industry itself provides thousands of jobs in the catching, processing, and trading sectors worldwide (including

¹¹⁵Envtl. Just. Found., *supra* note 22 at 4.

¹¹⁶*Id.*

¹¹⁷See *Id.* at 4. The subsidies help the fishing sector make more profit than it would without them. The subsidies also offset some of the rise in operational costs that would otherwise encourage a reduction in fishing capacity.

¹¹⁸See *Id.* at 4. Subsequently, catch and revenue losses resulting from overfishing and overcapacity are disproportionately affecting the livelihoods of small, local fishers as well as the food security of developing nations with widespread undernourishment that heavily depend on fish as a vital source of food.

¹¹⁹See FAO, *The State of the World's Fisheries and Aquaculture 2016: Contributing to Food Security and Nutrition for All*, (Rome: 2016). One of the steps to bring forth responsible inland fisheries is to develop and improve science-based approaches to fishery management; Many inland waterbodies do not have fishery or resource management arrangements that can adequately address sustainable use of resources. Where management arrangements exist, compliance and enforcement are often minimal or non-existent. This may result in excessive fishing pressure, decreased catch per unit effort, and conflicts between fishers, as well as changes in the productivity of fishery resources. In some areas, reductions in fishing capacity will be required. To facilitate fishery management, it will be important to improve access to and promote better sharing of data and information about inland fisheries supporting the assessment-management cycle.

¹²⁰Envtl. Just. Found., *supra* note 22 at 5.

in many developing coastal States), as well as significant revenues in terms of access fees.¹²¹ To compensate for the higher cost of distance type of water fishing, underhanded operators turn to illegal trafficking networks to supply cheap labor at the expense of vulnerable populations, often migrant workers.¹²² The lack of monitoring, control, and enforcement that allows for such a situation by IUU fishing vessels deters conservation goals and deploys oceans of life, as well as the exploitation of workers in the fishing sector.¹²³ "...The result is an alarming cycle of environmental degradation and human rights abuse, which exacerbates and perpetuates."¹²⁴ On board fishing vessels that are far away (some for four years at a time) from any type of regulation or authority, there are workers who have reported experiencing appalling conditions including 20 to 22 hour work days, being grossly underpaid or withheld wages, excessive fees, confiscation of documents, lack of decent food or clean drinking water, unsanitary and unsafe working and living environments, physical abuse and verbal intimidation, forcible confinement, lack of medical care and even murder.¹²⁵ Labor brokers are used as recruitment agencies that have been known to use deception, coercion, and abduction to the largest vulnerable migrant

¹²¹See *Id.* at 5. Given the pressure fish species face globally, it comes at no surprise that many tuna stocks are severely overfished. In 2011, the IUCN Red List placed five out of eight surveyed tuna species in threatened or near threatened categories.

¹²²See Robin McDowell et al., *AP Investigation: Slaves may have Caught the Fish you Bought*, ASSOCIATED PRESS (March 25, 2015), available at <https://www.ap.org/explore/seafood-from-slaves/ap-investigation-slaves-may-have-caught-the-fish-you-bought.html>. In the Indonesian island village of Benjina and the surrounding waters, hundreds of trapped men represent one of the most desperate links criss-crossing between companies and countries in the seafood industry. This intricate web of connections separates the fish we eat from the men who catch it, and obscures a brutal truth: your seafood may come from slaves. The men the AP interviewed on Benjina were mostly from Myanmar, also known as Burma, one of the poorest countries in the world. They were brought to Indonesia through Thailand and forced to fish. Their catch was then shipped back to Thailand, where it entered the global stream of commerce.

¹²³Environmental Justice Foundation, *supra* note 22 at 5.

¹²⁴*Id.* at 5.

¹²⁵See *Id.* at 6. Because victims are typically migrant workers outside their countries of origin, they often lack the access and means to submit complaints to authorities. Even then, difficulties collecting evidence and clarifying the question of jurisdiction can make it difficult to properly investigate and resolve cases.

workers.¹²⁶ This sounds similar to the practice used by the British navy in the 1800's, which would impress sailors found in bars and elsewhere. Do these situations exist today? Because of the economics of the fishing industry, it is becoming more common to use illegal recruiting methods as an attractive option in order to supplement catch profits.

Illegal catches and labor abuses are used in the practice of "transshipment." "Transshipment" refers to fishing vessels that transfer their catches to other vessels, typically refrigerated cargo ships, that also refuel and restock at sea.¹²⁷ Since vessels can empty their cargo and provisions before they go into port, "transshipment" enables these vessels, together with their crews, to stay out in the sea indefinitely, away from the scrutiny of authorities, and to rid themselves of physical evidence of illegal fishing activities.

As stated earlier, vessels that fish illegally and engage in human trafficking are using "flags of convenience."¹²⁸ Some flag States operate open registries which allow foreign-owned fishing vessels to fly their flag. Flags of convenience are used by operators to register vessels under a foreign flag, because they stand to benefit from cheap registration fees, low or no taxes, and less strict regulations from those imposed by their own countries.¹²⁹ There also exists a weak regulatory framework, lack of proper enforcement, and other hands-off attitudes that have provided fishing vessels with a range of evasatory tactics enabling wide spread IUU fishing and human rights abuses.

All this leads to the conclusion that an enforcement mechanism needs to be strengthened, and there needs to be an increase in monitoring control surveillance through electronic and direct observation of fisheries both at sea and at ports. On average, four percent of tuna fishing vessels carry independent observers on board, with some fleets as low as one percent. This is obviously a

¹²⁶See *Id.* at 6. Recruiters offer to help migrant workers emigrate from their home villages and promise good jobs for a fee set off against future earnings. The recruitment fees can add up to substantial debts that function as debt bondage, leaving workers susceptible to human trafficking and forced labour.

¹²⁷What is Transshipment?, *supra* note 43.

¹²⁸Flags of Convenience, *supra* note 81.

¹²⁹*Id.*

lack of transparency and traceability on sea food supply chains, and thereby limits the accountabilities for the fishing and the labor practices happening on board, undermining both marine conservation and free and fair labor practices. For emphasis, we restate that the rights at stake include the right to life, the right to organize, the right to freedom from torture and other cruel, inhumane or degrading treatment, the right to freedom from slavery and forced labor, the right to work in favorable conditions, the right to a healthy environment and the right to have access to food for both workers and communities affected by unsustainable fishing practices.¹³⁰

VIII

A LACK OF A UNIFORM APPROACH TO INITIATIVES IS BRINGING WEAK RESULTS

There are many initiatives (perhaps too many initiatives through the “safe ocean network”)¹³¹ in connection with the fight against illegal fishing, that include detention, enforcement, and prosecution. Before going into the possible solutions to these problems, it has to be remembered that there should be only one party pulling all these initiatives together in order to have cohesiveness and an organized plan.¹³²

¹³⁰See MarEx, *Call to Address Human Rights and Illegal Fishing Links*, MAR. EXEC. (Oct. 16, 2016), available at <http://www.maritime-executive.com/article/call-to-address-human-rights-and-illegal-fishing-links>. The connections between human rights and labor abuses in the fishing sector with the practices of overfishing and illegal, unreported, unregulated (IUU) fishing, are abundantly clear. However, existing legal instruments keep these issues in isolation from each other.

¹³¹See *Safe Ocean Network*, U.S. Department of State bulletin, U.S. DEPT. OF STATE (Sept. 15, 2016), available at <https://fr.usembassy.gov/france-joined-safe-ocean-network-stop-illegal-fishing/>. Safe Ocean Network is an initiative U.S. Secretary of State John Kerry first announced at the second Our Ocean Conference in 2015, which seeks to build a global community to strengthen all aspects of the fight against illegal fishing including detection, enforcement, and prosecution. The Safe Ocean Network is focused on increasing collaboration between countries and organizations combating illegal fishing around the world, and has brought together 46 governments and organizations to share knowledge and better coordinate to combat illegal fishing around the world.

¹³²See *Id.* More than 40 counter illegal fishing projects worth over \$82 million are affiliated with the Safe Ocean Network. Some of these projects bring their own initiatives towards the resolution to illegal fishing. Examples of these projects are:

Your authors would like to demonstrate the problem by using China as an example. Not only is China unwilling to cooperate in stopping worldwide IUU fishing, but China is also contributing to the problem regarding Chinese IUU fishing. This has created a crisis point for some of the world's most vulnerable communities. The problem is that the various data obtained from environmental groups indicates that China's many hundred-strong "distant water fleet" is increasingly applying IUU tactics to plunder millions of dollars of seafood.¹³³ They disguise their true location, employ destructive fishing techniques, and flout the territorial boundaries of sovereign nations. A significant portion of all the catch is destined for American dinner tables. One study estimates that 20% to 32% of all wild-caught seafood imported to the U.S. in 2011 was illegally procured, and China is the number one exporter of seafood to American homes.¹³⁴ They are destroying the environment by using destructive fishing practices like driftnets¹³⁵ to "vacuum up" all manner of sea life in frigid waters

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- More than 40 counter illegal fishing projects worth over \$82 million are affiliated with the Safe Ocean Network;
 - Paul Allen's Vulcan announced \$3.7 million to develop a satellite image analysis system to aid the detection of illegal fishing activity;
 - The Pew Charitable Trusts and Satellite Applications Catapult will continue to support Project Eyes on the Seas, a technology platform that combines satellite monitoring and imagery data with other information such as fishing vessel databases and oceanographic data, to help authorities detect suspicious fishing activity;
 - The International Monitoring, Control, and Surveillance Network is developing a centralized data base of vetted qualified monitoring, control, and surveillance (MCS) experts available to national authorities and international institutions for consultancy and capacity-building projects in the field of fisheries.

¹³³See Charlie Campbell, *The Fight to Save the World's Seas from China's Bloated Fishing Industry*, TIME (Aug. 24, 2016), available at <http://time.com/4463943/japan-china-fishing-marine-iuu-environment-google-skytruth/>. New data from environmental groups indicates that Chinese fishing ships are disguising their true location, employing destructive fishing techniques and flouting the territorial boundaries of sovereign nations.

¹³⁴Id. at 2.

¹³⁵See *Wild-Caught*, ANIMAL WELFARE INST., available at <https://awionline.org/content/wild-caught>. Drift nets are gillnets that are allowed to drift near the surface of the water. Fish are trapped as nets slide behind their gill covers. Driftnets are used to capture many types of fish including tuna, swordfish and salmon. These nets were traditionally small in size, biodegradable and attached to small vessels. Present day driftnets, however, are made of nylon and can measure up to 50km in length. The tops of driftnets are equipped with floats, and weights are attached to the bottoms - creating a vertical wall in the water.

off, for example, Japan's eastern coast that is ordinarily teeming with sardines, mackerel, anchovy and scallop. That industry alone is worth about 9 billion dollars a year, but again China is acting as an interloper and sent out approximately 200 Chinese fishing boats, which recently set up shop at the edge of Japan's EEZ. Their boats are concealing their true whereabouts by tampering with Automatic Identification Systems (AIS) devices. Those signals can be picked up by various monitoring systems, including satellites and handheld receivers; however, coverage is very limited and different nations have contrasting AIS regulations (i.e. no uniformity). Sky Truth is a U.S. Non-Governmental Organization (NGO) product and has been working with Google to develop a global AIS monitoring system. AIS, which is not mandatory, would aid the ability of Sky Truth's global fishing watch system to track all vessels around the world, flagging those that appear to be using destructive fishing techniques, like drift nets. Vessels exhibit certain characteristics depending on their purpose.¹³⁶ One example is container ships, which always take the straightest possible route between two ports to reduce the fuel cost. Sky Truth is developing an algorithm that would automatically fix quiet vessels that betray classic drift net fishing behavior. China is one of the nations that did not sign the Port Agreement.¹³⁷

The U.S. Department of State's Safe Ocean Network initiative, which was an initiative by U.S. Secretary of State John Kerry, was first announced in 2015.¹³⁸ Certain States agreed that as part of the sustainable development goals they wanted to target the end of overfishing, IUU fishing, and destructive fishing by 2020.¹³⁹ Safe Oceans Network hopes to contribute to achieving this goal. The initiative has brought together 46 governments and

¹³⁶Campbell, *supra* note 136 at 4.

¹³⁷See *Id.* at 4. Environmentalists are calling on the Beijing authorities to better regulate the activities of all Chinese vessels, scale back overcapacity and end the state subsidies fishing operations enjoy. They also want China and all world governments to make AIS systems obligatory and companies legally culpable should their readings not be correct. Unique vessels identifiers – a permanent code equivalent to a car vehicle identification number etched into the engine block – should also be made mandatory for all vessels around the globe.

¹³⁸Safe Ocean Network, *supra* note 134.

¹³⁹See *Id.*

organizations in order to share knowledge and to better coordinate and combat illegal fishing around the world.

However, looking at the number of initiatives (33), one wonders if people are working at opposite ends on this situation. It is good to have regional cooperation as well as multilateral and bilateral, but your authors wonder how much is being accomplished this way. One of the initiatives that interested your authors concerned an offer by the Netherlands that contributed one million dollars for the development of a device called a "black box." This black box can be installed on fishing boats to continuously monitor and track vessels and provide opportunities to improve compliance with fisheries regulations. Of course, they would probably encounter a situation as to whether or not one country could force another sovereign nation, whose flag the fishing vessels utilize, to install one of these boxes on ships registered with their open registry.

There was a case called The "Volga" that was decided by the International Law of the Sea Tribunal in 2002.¹⁴⁰ One of the arguments made by the Respondent (Australia), was that if the vessel was released by Australia, it had to carry a Vessel Monitoring System (VMS),¹⁴¹ and the information concerning particulars about the owner and ultimate beneficial owners of this ship had to be submitted to Australia. The Respondent contended that the carrying of the VMS is necessary in order to prevent

¹⁴⁰The Volga Case (Russian Federation v. Australia), Order of Dec. 13, 2002, ITLOS/PV.02/04; *The Volga Cases*, ENVTL. L. AUSTL., available at <http://envlaw.com.au/the-volga-cases/>. This case study involves two related proceedings. Both cases concerned the arrest of the Russian-flagged longline fishing vessel, Volga, which was apprehended by the Australian Navy for illegally fishing for Patagonian Toothfish in the Australian Fishing Zone (AFZ) adjacent to Heard and McDonald Islands, remote and uninhabited islands 4,000 km southwest of Perth. The Volga was the second of two Russian-flagged vessels arrested by the Australian frigate HMAS Canberra within 24 hours of each other on 7 and 8 February 2002 (the other vessel was the Lena). The Volga was arrested by Australian naval personnel, who fast-roped from a helicopter launched from HMAS Canberra. The arrest occurred 0.5 nautical miles (900m) outside of the AFZ and exclusive economic zone (EEZ) just after the vessel exited the AFZ and EEZ.

¹⁴¹See *Fishing Vessel Monitoring System*, FAO U.N., available at <http://www.fao.org/fishery/vms/en>. A fishing vessel monitoring system (VMS) is a cost-effective tool for the successful monitoring, control and surveillance (MCS) of fisheries activities. VMS provides a fishery management agency with accurate and timely information about the location and activity of regulated fishing vessels.

further illicit fishing once the ship was released. The tribunal decided that Australia did not have the right or privilege to seek this type of result. The issue, of course, was whether the imposition of the proposed condition was a legitimate exercise of a coastal State's sovereign rights in its exclusive economic zone.¹⁴² However, that issue had nothing to do with the VMS request (that your authors thought was perfectly reasonable under the circumstances), because many of these flags of convenience vessels go right back to fishing illegally in the same area.¹⁴³ In the Volga case, it concerned the illegal fishing of Patagonia toothfish, also known as Chilean bass. It is on everybody's "extinction list." Australia made some excellent arguments. Australia was obliged by existing scientific information, they argued, to ensure that the Patagonia toothfish did not become extinct, and there was a serious danger of that. They argued that it was much cheaper to fish for Patagonian toothfish if one did not have an observer, or if you did not have VMS, and if you did not need a quota. The release of the IUU ship caught fishing in these circumstances must take into account the endangerment to the species of fish. As an example, or by use of an analogy, the Respondent (Australia) said that we should look upon this case the same as we would the case of a truck driver who, while under the influence of alcohol, killed someone and is brought to the magistrate and is pending trial. The truck driver says "I stand innocent. I plead not guilty, this is my livelihood, do not take it away from me, it will cause ruin."¹⁴⁴ It is perfectly reasonable in the period prior to the trial to put a governor on the truck to make sure that the truck driver does

¹⁴²See *The Volga Case*, supra note 143 at 8-9. While on the hot pursuit issue, Australia's contention is that because the warship allegedly used all practicable means available and satisfied itself at the time, albeit wrongly, that the Volga was inside the Australian EEZ, and because the vessel was, in the warship's view, fleeing the jurisdiction, the requirements under Article 111 that a stop order must be given and that the pursuit must commence inside the EEZ, simply did not apply. Article 111(1) is in clear mandatory terms. A pursuit cannot be lawful if it is commenced outside the EEZ. At best, Australia may be able to rely on Article 111(4) and establish that it took all practicable means available to it at the time to establish the Volga's position so that, and provided it can establish all the other conditions of a hot pursuit, it may have a potential defense to part of a damages claim under Article 111(8) because the pursuit at the time was justifiable.

¹⁴³Flags of Convenience, supra note 81.

¹⁴⁴*The Volga Case*, supra note 142 at 19.

not exceed the speed limit, or to impose other conditions that would be described as a bond or other financial security. It would be a financial security imposed on the driver to ensure good behavior pending trial. The Respondent pointed out that it's exactly what they wanted with the deployment of the VMS on the ship.

A further argument made by respondents was that "...We face a period of about 5 to 10 years in which there has to be reversal of the present chronic state of most of the world's fish stock."¹⁴⁵ The judges living in Europe will need no reminder of the situation as a result of the drastic cuts on commercial fishing of Atlantic sea bass, in order to prevent a collapse in fish stocks.¹⁴⁶ There is about to be a dramatic shift of fishing power from the northern to the southern hemisphere, and the Station of the southern hemisphere needs to be in a position to respond.¹⁴⁷ That, at a fundamental level, if you like, is a question of policy: "is it a question of policy in which this tribunal can take account?"¹⁴⁸

As the authors mentioned in a prior article (on flags of convenience),¹⁴⁹ the most critical gaps that need to be addressed are the lack of required, internationally recognized unique Vessel Identification Numbers on fishing vessels. The existence of the lack of a sound, uniform system for tracking vessels, as well as poor sharing of information on suspected illegal fishing activity among national and international bodies and agencies must be addressed and answered!¹⁵⁰

¹⁴⁵Id. at 19.

¹⁴⁶See *EU Proposes Total Commercial Fishing Ban on Atlantic Sea Bass*, THE GUARDIAN (Oct. 27, 2016), available at <https://www.theguardian.com/environment/2016/oct/27/eu-proposes-total-commercial-fishing-ban-on-atlantic-sea-bass>. This would also cut Scottish whiting catches to zero, while Celtic cod and Irish sole face hefty reductions to prevent stocks collapsing. The total allowable catch (TAC) for cod in the Celtic Sea will also be cut by 68% under the plan, while sole quotas in the Irish Sea will be trimmed by a hefty 82%. The move, to cut sea bass catches from 570 tonnes a year to zero, follows what the EU calls "very alarming" advice from fisheries scientists, who found that numbers had fallen below "safe biological limits".

¹⁴⁷Luck J. McK, *Performance of Southern Hemisphere Stations*, EOS SPACE SYS., available at <https://cddis.nasa.gov/lw15/docs/papers/Performance%20of%20Southern%20Hemisphere%20Stations.pdf>. There are five southern hemisphere stations: YARR, STRM, HART, TAHI, and TIGO.

¹⁴⁸The Volga Case, *supra* note 142 at 9.

¹⁴⁹Flags of Convenience, *supra* note 79.

¹⁵⁰FAQ: Illegal, Unreported, and Unregulated Fishing, *supra* note 44 at 9.

So, one of the solutions that Pew sets forth, as do many others, is “advocating for a requirement that all vessels of 24 meters in length or 100 gross tons in weight have an IMO number as a vessel’s unique vessel identification number...”¹⁵¹ This is not an unusual situation in that the commercial maritime fleets already use the global merchant. They already have in place such vessel identification for a commercial maritime fleet. This would also go hand in hand with the automatic onboard tracking system. Information sharing, enforcement, and prosecution of fishery crimes is better done with cooperation regionally, bilaterally, and multilaterally because all could use the technology, training and intelligence gathering. That is why Pew argues for the implementation of the PSMA in key countries, and for the adoption of measures consistent with that agreement by RFMO’s. Such measures will cut off port access to illegal fishes.

Finally, the Pew argues that we should all be working towards recognizing illegal fishing as a criminal activity so that the full force of the law can be brought to bear against those engaging in such activity. The Pew system is called Project Eyes on the Sea, and what that will do is initially launch a “virtual watch room” monitoring the waters surrounding Easter Island, a Chilean territory and the pacific island nation of Palau.¹⁵² In addition, this key initiative and recommendation would develop a

¹⁵¹See *Id.* at 9. This requirement should stipulate that every vessel that gets an IMO number should also be outfitted with an automatic onboard tracking system.

¹⁵²See *Pew Unveils Pioneering Technology to Help End Illegal Fishing*, THE PEW CHARITABLE TR. (Jan. 21, 2015), available at <http://www.pewtrusts.org/en/about/newsroom/press-releases/2015/01/21/pew-unveils-pioneering-technology-to-help-end-illegal-fishing>. The system is being developed in partnership with Satellite Applications Catapult, a British company established through a UK government initiative. The technology analyzes multiple sources of live satellite tracking data and then links to information about a ship’s ownership history and country of registration, providing a dossier of up-to-the-minute data that can alert officials to suspicious vessel movements. Experts estimate that up to \$23.5 billion worth of fish enter the world market each year from illegal fishing, which averages to approximately 1 in 5 fish caught in the wild. In some regions, as much as 40 percent of the catch is thought to have been caught unlawfully. This theft persists largely because industrial-scale pirate fishers know that nobody is watching them. Project Eyes on the Seas aims to solve that problem by offering authorities for the first time a real-time comprehensive monitoring and analysis system of activity on the water.

comprehensive global record of fishing vessels (within FAO's),¹⁵³ including refrigerated transport and supply vessels that incorporate available information on beneficial ownership subject to confidentiality requirements in accordance with national law.¹⁵⁴ The aim of the global record will be to ensure the effectiveness of port state measurements, and will be critical for improving traceability transparency, risk assessment, and decision-making on a broad range of topics. In other words,

... the global record is envisaged as a one-stop-shop of vessel and vessel related information that can be used to identify the vessel, describe the capacity and capability, identify its owners and associate interest, identify its fishing authorizations, provide a history of non-compliance, provide information on vessels involved in transshipment and refueling operations, provide other data, and provide an access point to other complimentary information."¹⁵⁵

Even INTERPOL has gotten into the IUU fishing problem by launching what it calls "Project Scale" to combat fishery crimes.¹⁵⁶ It turns out that Project Scale is the latest of INTERPOL's ongoing efforts to support member countries to tackle more effectively environmental crime no matter where it is committed. The ideas behind Project Scale are to raise awareness of fisheries crimes and its consequences; to establish a national environmental security task force to ensure institutionalized cooperation between national agencies and international partners; to assess the needs of vulnerable countries; to conduct operations

¹⁵³U.N. FAO, Meeting of the Informal Open-Ended Technical and Advisory Working Group of the Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels, U.N. DOC. GRWG/2015/1/4 (Feb. 23, 2015). Since 1990 the international community has been engaged in global and regional discussions regarding how better to combat and deter IUU fishing activities. A number of international binding agreements as well as soft law instruments have been adopted to prevent, deter and eliminate IUU fishing and to promote the sustainable management of fisheries resources.

¹⁵⁴*Id.*, at 1.

¹⁵⁵*Id.*, at 2.

¹⁵⁶See INTERPOL Launches Project Scale to Combat Fisheries Crime, INTERPOL (Feb. 26, 2013), available at <https://www.interpol.int/News-and-media/News/2013/PR024>. Project Scale is a global initiative to detect, suppress and combat fisheries crime which is estimated to cost the global economy up to USD 23 billion each year and is linked to other forms of serious transnational crime including corruptions, money laundering, fraud, human and drug trafficking.

to suppress criminal activity; to disrupt trafficking routes; and to ensure the enforcement of national legislation. They plan to create a strategy to develop a fisheries crime working group; to develop a case study with histories of fisheries crime in west Africa;¹⁵⁷ to enhance expertise regarding international marine enforcement network to provide expert recommendations that are more effective and efficient fisheries-related environmental law compliance; and to conduct regional commodities-specific targeted operations tailored to vulnerable regions.

In addition to INTERPOL, there is an organization called Fish-i Africa,¹⁵⁸ which can identify areas that Fish-i Africa wanted to impact, and which are very similar to the ones we have been discussing in this article; namely corruption, false vessel identity, weak human and institutional capacity; lack of trust and cooperation between countries; weak port state measures; flag hopping and the use of flags of conveniences;¹⁵⁹ other crimes in

¹⁵⁷See Project Scale - An INTERPOL Initiative to Detect, Suppress and Combat Fisheries Crime, INTERPOL (Sept. 2013), available at www.interpol.int. Part of the objective of the initiative is to:

- Raise awareness of fisheries crime and its consequences;
- Establish National Environmental Security Task Forces (NESTs) to ensure institutionalized cooperation between national agencies and international partners;
- Assess the needs of vulnerable countries; and
- Conduct operations to suppress criminal activity, disrupt trafficking routes and ensure the enforcement of national legislation.

¹⁵⁸See *Issues/Investigations/Impacts: Stop Illegal Fishing*, FISH-I-AFR. (2016), available at https://www.fish-i-africa.org/wp-content/uploads/2016/07/FISH-i_Impacts_report_second_edition_20022017_COMPLETE_WEB-1.pdf. There is a list of what worked and what needs to be changed and part of those initiatives are as follows:

- FISH-i Africa's first Success: the PREMIER
- Fake licensing operation uncovered in Tanzania
- FISH-i Africa country de-flags IUU listed fishing vessels
- The multiple identities of the NAHAM-4
- Fugitives from justice: the SAMUDERA PASIFIC No.8 and BERKAT MENJALA No. 23
- Mysterious movements on the Somali coast: the POSEIDON and the AL-AMAL
- Piracy, poaching and people smuggling? – The case of the LUCKY STAR
- Three vessels or one?
- A repeat offender bought to book: the NESSA7
- FISH-i Africa works: Mauritian action on Sri Lankan vessels.

¹⁵⁹Ted Kemp, *The Link Between Illegal Fishing and Piracy*, CNBC (Sept. 19, 2014), available at <http://www.cnn.com/2014/09/18/flag-hopping-fishing-companies-drive-small-fishermen-to-piracy.html>. An Australian government examination of data from naval insurer Lloyd's Register of Ships found that many of the companies that use

the fishery sector-fish crimes; semi illegal transshipment of fish; and forged and false documents.

In summary, it seems that there are many initiatives, both on the regional and international bilateral stages. Your authors could not help but wonder if any of these can be really helpful, especially against countries like China which flouts this type of regulation (e.g., it also has had problems with copyright theft). China resembles a country that just woke up from a long sleep and has now decided to be a capitalistic economy with a communist run dictatorship. How do you deal with China and countries like that? The answer is you need a system of vessel identification, but of course China is not going to oblige anybody by doing so, unless, they can figure out a way around it like they have in certain areas. So, that is really a problem which needs to be addressed. You cannot have all these initiatives and not look at it. Doing nothing about it is like watching the "Emperor's New Clothes,"¹⁶⁰ because everybody sees what is happening, (i.e., the emperor is totally nude parading himself down the streets or blocks but everybody is saying that he's wearing a beautiful outfit). In any event, the conclusion is one your authors have prepared in conjunction with all of the information that was at their disposal.

flags of convenience are actually based in Taiwan and the European Union, with Spanish firms accounting for about half of the EU total. Russia is another prominent flag-hopping nation, according to Lloyd's. The most common flags of convenience come from Panama, Liberia, the Marshall Islands and Malta. More than half of the world's merchant fleet is flagged to one of those countries.

¹⁶⁰See HANS C. ANDERSEN, *THE EMPERORS NEW CLOTHES*, (1837), available at <http://www.pitt.edu/%7edash/type1620.html>. There lived an emperor who loved beautiful new clothes so much that he spent all his money on being finely dressed. His only interest was in going to the theater or in riding about in his carriage where he could show off his new clothes. One day two swindlers came to the emperor's city. They said that they were weavers, claiming that they knew how to make the finest cloth imaginable. Not only were the colors and the patterns extraordinarily beautiful, but, in addition, this material had the amazing property that it was to be invisible to anyone who was incompetent or stupid. They set up their looms and pretended to go to work. The emperor walked beneath the beautiful canopy in the procession, and all the people in the street and in their windows said, "Goodness, the emperor's new clothes are incomparable! What a beautiful train on his jacket. What a perfect fit!" No one wanted it to be noticed that he could see nothing, for then it would be said that he was unfit for his position or that he was stupid. None of the emperor's clothes had ever before received such praise, but a small child said that he didn't have anything on.

IX CONCLUSION

I became interested in the topic of illegal fishing because of the word "piracy" and because the word piracy was being used in connection with IUU fishing; human trafficking (because people are forced to work on fishing vessels); and the environment because of the damage caused by dynamiting for fish and the use of driftnets (just to set forth two examples).

As mentioned earlier, the first time I heard the expression "illegal fishing," it was used by the Attorney General of the Seychelles in order to point out that neither North nor South Korea (nor probably every other nation in the world that fished in the Seychelles' area) paid licensing fees, which the Seychelles really needed for their country. Fishing had never been important when I was growing up. People used to eat fish on Friday's. In my parent's house, we had fish sticks. But Americans never cared much for fish except for a lobster, possibly cod, and tuna fish. Most of us grew up as meat eaters, but now people are more aware of the difficulties facing the developing nations especially since they have to use fish as their protein. We do not know what is going to happen, but we see some real problems with getting enforcement in this area unless everybody cooperates. The maximum sustainable yield of fish has to be achieved so that nations can fish at a certain level without destroying a fish stock or creating extinctions, such as is happening in the Patagonian toothfish situation.

It is a very complicated situation but one that I think would be helped with the advent of requiring the use of some type of device on fishing vessels, perhaps similar to the Vessel Identification Numbers (VIN) used for commercial merchant vessels. Questions of sovereignty have to be put aside for this to happen and rightfully so, because the world is facing extinction of the oceans and its fish. The human population is rising and they need fish to live. So, the purpose of this paper has always been to explain the shortcomings due to lack of uniformity of regulations and consistency in application.

Legally, the best way to handle this type of situation is to have a uniform system which is coherent and consistent with international community values. That is probably asking too

much, but that is really what is necessary. The PSMA is a start toward enforcement. Identification of state fishing ships is a necessity. We will not survive without oceans and fish. We must correct the human rights situations on IUU ships and the environmental damage to humans, ocean and ocean life. The suggestions put forth are meant to achieve stability in a civilized fashion.

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