HUMAN RIGHTS & THE OCEAN

SLAVERY AND THE SHRIMP ON YOUR PLATE

Gemunu Amarasinghe / Associated Press

ABSTRACT: *In this paper, we explore the intersection of human rights abuses and degraded ocean systems with a focus on the under-regulated, under-enforced fishing fleets and seafood processing industry of Southeast Asia. The intertwined abuse of human capital and natural capital ensures that people in the US and UK can eat four times as much shrimp as they did five decades ago, and at half the price. The unsustainable activities that degraded, and continue to degrade, our global fisheries, habitats, and ocean systems also degrade human communities. As overfishing depleted the world's fisheries, aquaculture was promoted as a way to diversify community economies and meet the demand for seafood. Aquaculture now meets more than half the global demand for seafood. Much has been written about how these aquaculture practices degrade coastal and terrestrial habitats, leaving the communities impoverished and bereft of natural resources. In recent years, additional media investigations, NGO and government reports, and books have highlighted the role of modern slavery in global fisheries. The same slave-based fisheries also help ensure that our pet cats can consume an average of 30 pounds of fish apiece each year. By addressing the human rights violations, we can also address the mindless plundering of the region's fishery resources. This paper is not intended to be exhaustive; rather it's a synthesis of others' research to offer an overview of the issue, some conclusions about what might be done to preserve human and natural (ocean) capital, and to provide information on additional resources.*

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> Speaking on condition of anonymity, a high-ranking broker explained to the Guardian how Thai boat owners phone him directly with their "order": the quantity of men they need and the amount they're willing to pay for them.
>
> "Each guy costs about 25,000-35,000 baht [£450-£640] – we go find them," explains the goateed broker, who operates out of the industrial fishing and prawn-processing hub of Samut Sakhon, just south of the capital, Bangkok.
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> Kate Hodal & Chris Kelly, *The Guardian* 10 June 2014

TABLE OF CONTENTS

INTRODUCTION

As economies evolve and become more complex, the human relationship to food evolves from eating a diet that meets basic nutritional and caloric needs to a diet that offers choice for the sake of offering choice. Entire industries emerge for the sole purpose of meeting market demand for diversity of choice at restaurants and in grocery stores—often far from the source of the desired food and sometimes in ways that make the production process harmful socially, environmentally, and economically. Too often, providing that choice means harming life in the ocean and the communities who depend on the ocean for their own sustenance. And, in too many cases, it means that the supply chain depends on slavery to keep the price down.

Shrimp, especially warm-water shrimp, is the most popular seafood in the United States. Shrimp (prawn) is popular in Europe as well. Domestic sources of wild shrimp have been greatly reduced by warming oceans, overfishing, and other factors. Americans consume roughly four pounds of shrimp per person per year. While it doesn't compare to the annual US consumption of beef (74 pounds) or chicken (57 pounds),[1] the demand is a big enough "choice" market to translate to an important industry, driving sprawling shrimp aquaculture operations around the world. Shrimp is also a luxury item, not a necessity, and it can command a higher price in the market than beef or chicken, for example, but it still sells for less per pound in real dollars than it did three decades ago. However, the retail price has to take into consideration certain fixed costs—long transport distances, special processing and handling (e.g. refrigeration), and the cost of feed to feed the shrimp in the farms—and of course, profit. Thus, the pressure to minimize labor costs is enormous—especially when it comes to catching the sealife that is turned into shrimp food, and processing the shrimp once they've grown.

The bad news is that shrimp farming in Thailand has relied on slavery at sea (the workers on the vast, often underregulated and illegal fleet of Thai trawlers) and in the processing sheds to provide a product that can be sold for as little as US$10 a pound retail in the U.S. The good news is that evolving international efforts to address the human trafficking issues involved in shrimp aquaculture may also address the illegal fishing issues.

In this paper we take a look at the services the ocean provides, the decline of wild caught fisheries, the rise of aquaculture, the market forces that are in play around luxury foods such as shrimp, the role of slavery, and the potential for addressing these issues through diverse strategies to promote transparency, empower communities, and pressure governments.

[1] Consumption of Meet in the U.S. National Chicken Council http://www.nationalchickencouncil.org/about-the-industry/statistics/per-capita-consumption-of-poultry-and-livestock-1965-to-estimated-2012-in-pounds/

Fishing Down the Food Chain and Mean Trophic Level (MTL)

The MTL of animals caught in a particular fishery is the average of their positions in the food web. A fishery that exclusively targets top predators…could have an MTL of around four. One targeting only primary producers at the bottom of the food chain, such as seaweed, would have a trophic level of one. In 1998, a paper published in *Science* found that the MTL of fish landed globally was declining by 0.1 per decade. "It is likely that continuation of present trends will lead to widespread fisheries collapses," the authors warned. Based on the term "fishing down the food chain" worldwide -- in other words, exhausting stocks of top predators...before switching attention to smaller marine animals.

-- Dan Cressey, *Nature News*, November, 7 2010

The Ocean & Its Fisheries

The sea supports all life. Covering over 71 percent of the planet and holding 97 percent of its water, the global ocean is the foundation for life on Earth.[2] Eighty percent of life is found in its waters.[3] As the great absorber of carbon dioxide and a primary producer of oxygen, the ocean is responsible for regulating global climate and weather systems.[4] However, being the supplier of clean air, the absorber of our emissions, and the generator of rain are not the only reasons humans depend on the ocean.

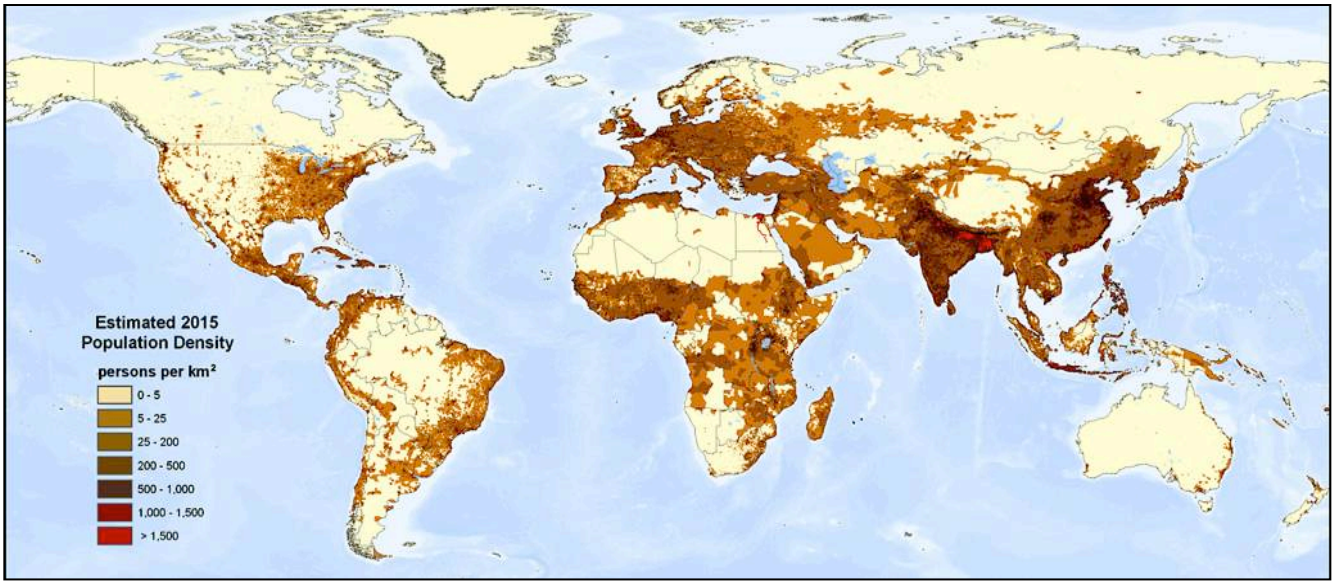
Since the beginning of civilization, humans have flocked to the ocean for nourishment, livelihood, trade, and adventure. Today, an estimated 350 million people rely on fishing, aquaculture, coastal and marine tourism, and marine research for a living.[5] The ocean and coasts are key drivers not only of coastal and national economies, but also of the global economy. In 2014 alone, fisheries contributed over $100 billion to the global economy.[6]

The importance of the ocean and its fisheries cannot be overstated, especially when it comes to developing countries. Of the people who derive livelihoods from fishing, 90 percent live in developing countries. With the fish trade in developing counties valued at $25 billion per year, fish have come to represent these countries' most significant traded food product.[7]

Moreover, at least one billion people in developing countries depend on fish or other seafood as their primary source of protein.[8] Unfortunately, it is these exact same countries, which depend so heavily upon the ocean and all of its goods and services that are experiencing the brunt of its degradation. As the world's waters continue to

[2] Herr, D., Isensee, K., & Turley, C. (2013). "Overview of the international policy landscape and activities on ocean acidification." International Atomic Energy Council. https://www.iaea.org/ocean-acidification/download/OA Policy white paper_final.pdf
[3] Spalding, M. (2014). Mapping Ocean Wealth. The Nature Conservancy. http://www.nature.org/ourinitiatives/habitats/oceanscoasts/mapping-ocean-wealth-white-paper-pdf.pdf
[4] Herr, D., Isensee, K., & Turley, C. "Overview of the international policy landscape."
[5] The World Bank. (2014). Sustainable Development - The Living Oceans. http://go.worldbank.org/A2MYFIUQM0
[6] Spalding, M. (2014). Mapping Ocean Wealth. The Nature Conservancy. http://www.nature.org/ourinitiatives/habitats/oceanscoasts/mapping-ocean-wealth-white-paper-pdf.pdf
[7] The World Bank. (2014). Sustainable Development - The Living Oceans.
[8] Ibid.

be exploited and degraded at the hand of man, it is apparent that the ocean's fate is intertwined with that of mankind— that the fulfillment of fundamental human rights is dependent upon the continued health of the waters that bind all things.



Maps on the Web. Estimated 2015 Population Density

Beginning with the population growth and overfishing along the western European coast that drove Basque and other countries' fishermen far from their native shores in search of fish to meet their nations' demand, commercial fishing has been a global activity as well as a local one. The sense that the ocean was vast, and the surpluses of seafood nearly infinite, helped drive a common view that humans could do no harm to the sea through their activities.

Today, however, human activities have eroded the health of the ocean from every corner of the earth, in every cove and bywater, and even on the high seas. Human demand has driven multiple marine species to extinction, nearly drove whales to disappearance, and overfished the seas to a fraction of their historical abundance. From the oysters of the Chesapeake Bay, to the iconic cod of the North Atlantic, to all five species of sea turtle, overfishing has altered the global ocean system, perhaps irrevocably. Global take of fisheries plateaued in the 1980's, and in many regions, landings have been maintained by "fishing down the food chain," or traveling further and further to catch fish, in some cases, with increasingly indiscriminate gear.

Aquaculture

Declining wild caught fisheries triggered an increase in aquaculture—a centuries-old, small scale, largely sustainable suite of practices that has evolved since the 1940's into a global industry growing at a pace that is unmatched by any other industry over the past few decades.[9] As the Food and Agricultural Organization of The United Nations (UNFAO) reported in 2010, "With capture fisheries production stagnating, major increases in fish food production are forecast to come from aquaculture. Taking into account the population forecast, an

[9] De Silva, S.S., 2001. A global perspective on the growth of aquaculture in the new millenium. http://www.fao.org/docrep/003/ab412e/ab412e27.htm.

additional 27 million tons of production will be needed to maintain the present level of per capita consumption in 2030." [10]

In 2014, aquaculture overtook wild-caught fisheries in supplying the global demand for seafood. Half of all aquaculture production is finfish, a quarter is aquatic plants and the remaining quarter is made up of crustaceans (such as shrimp, prawns, crabs) and mollusks (such as clams, oysters and mussels).[11] Although aquaculture plays a significant role in meeting protein needs, the real financial value lies in producing high-end luxury items (e.g. shrimp) for the U.S. and European markets.

Far from relieving pressure on marine systems, the growth in aquaculture has, in some cases, increased it. Pressure remains on wild fisheries not only to serve the global seafood demand, but also to provide seafood for the feed mills for aquaculture and other farmed animal feeds.

Although "10 to 15 percent of commercial fishermen around the world work under conditions that make them virtual modern-day slaves,"[12] the problem is particularly ubiquitous in certain countries, especially Thailand, where a huge, financially important aquaculture and pet food industry needs cheap inputs to maximize profits and fulfill market demand. However it is not just Thailand that should be singled out.

> *The Catch* reveals what Michael Field discovered: "Horrifying examples of modern slavery in which men from poor countries are trapped on filthy, unsafe ships, treated brutally by captains and officers, and receive little or no pay; and fishing practices that are wasteful, environmentally damaging, and often illegal."
>
> -Michael Field interviewed in *Undercurrent News,* June 27, 2014

Globally, the fishing industry, the aquaculture industry, and the fish processing industry all rely on child, slave, and bonded labor to meet the consumer demand for cheap seafood products. As Michael Field writes in his 2014 book *The Catch*,[13] "the global market place constantly requires margins to be squeezed...If a supplier can make men and women work for a pittance, breaking laws in the process if need be, margins can be trimmed…" Inevitably, the most vulnerable are preyed upon to fulfill the low-cost labor demand and the habitats and animals of the ocean are willfully decimated for the benefit of luxury markets and fishing company monopolies. Thus creating a market distortion, in which human labor is grossly undervalued, allowing exploitation (overfishing) to exceed sustainable levels that will inevitably lead to collapse.

Thus, slavery in the fishing industry exacerbates the degradation of the oceans and the depletion of fishing stocks. Slavery artificially depresses the price of seafood, since the cost of labor becomes virtually free. Low prices mean higher demand, which generates a vicious cycle of worker exploitation and over-fishing. It also creates a market for "trash fish", which are important to the ecosystem but which there is not normally a market. These species – often by-

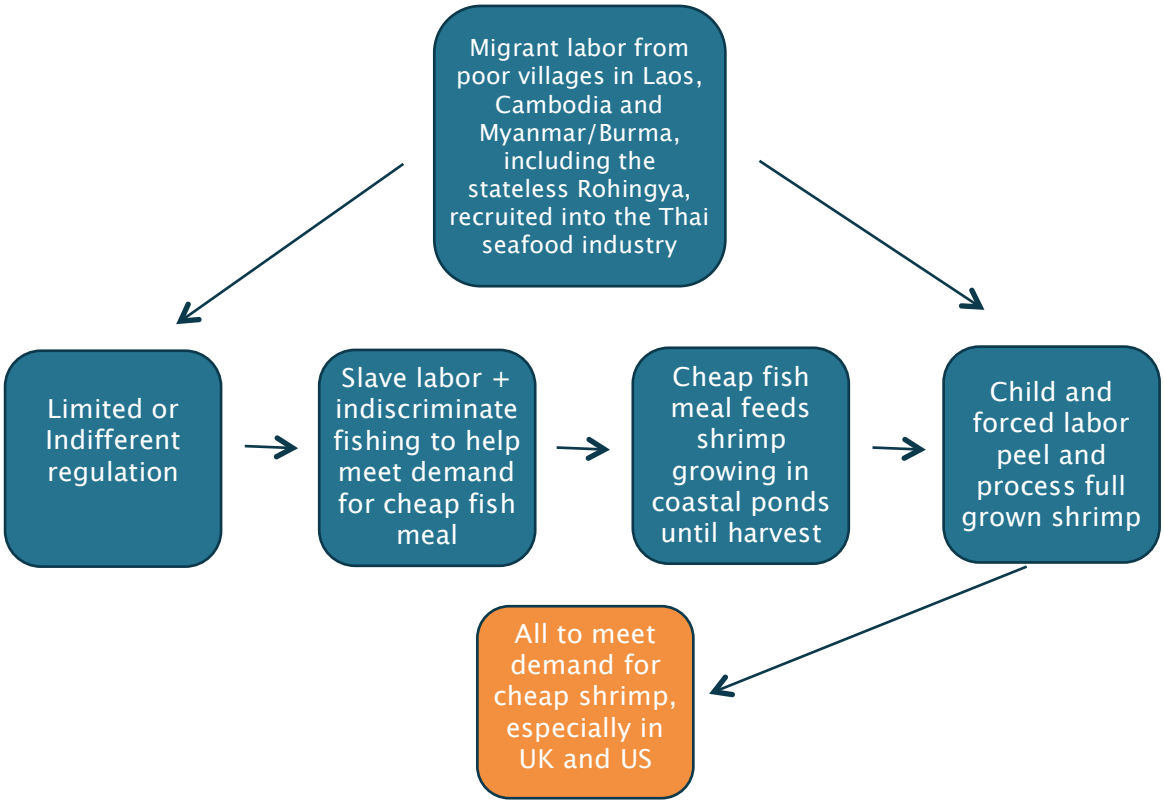
[10] UN FAO The State of World Fisheries and Aquaculture Report 2010. http://www.fao.org/docrep/013/i1820e/i1820e01.pdf
[11] Ibid.
[12] Bowermaster, J. (2013, June 28). *Slavery: The Fishing Industry's Shameful Bycatch.*
[13] Field, Michael. *The Catch: How Fishing Companies Reinvented Slavery and Plunder the Ocean,* AWA Press, Wellington, NZ, 2014. P. 23

catch in the search for pricier fish – are then ground up for other uses, including fertilizer, fish meal, and pet food. There are points of intervention throughout the cycle.

Credit Adam Dean for *The New York Times*

WHERE THE DEMAND LIES & WHO MEETS IT

The demand derives from the global markets served by three sectors of the seafood industry: high value fish such as tuna; aquaculture; and pet food. For the purposes of this paper, the focus will be on the role of slavery in the Thai shrimp aquaculture industry and its associated relationship with the pet food industry.



Growth in aquaculture has been particularly strong across Asia—fueled by significant international investment to support aquaculture production as an economic development solution for coastal communities. Aquaculture production by volume from China, South Asia and most of Southeast Asia consists primarily of cyprinids (freshwater carp species), while production from the rest of East Asia consists of high-value marine fish and shrimp.[14]

Shrimp aquaculture has grown to an almost unbelievable global level from its modest beginnings in Japan in the 1930's.[15] It ebbed and flowed in different countries as technology evolved and as disease decimated production in various countries, especially throughout the

[14] Subasinghe, R., and Currie, D., (May 2005). Aquaculture Topic and Activities: Main Cultured Species. http://www.fao.org/fishery/topic/13531/en
[15] See Appendix II: A Short History of Shrimp Aquaculture

1980s. Investment from international development entities in farmed shrimp has been steady as it is a luxury item with increasing demand from wealthy nations such as the U.S., the U.K., and other countries in the European Union.

Each year Americans consume a lot of shrimp—about 4.4 pounds per person,[16] about **double** what they consumed in 1990, and at about **half** the price per pound in 2015 dollars. The fact that the country's most popular seafood is not particularly healthy—high in cholesterol, for example, even before frying—has not hampered demand for shrimp. The vast majority of that shrimp is farmed, and production has risen to meet that demand. Although China is the biggest single producer of shrimp, Thailand is the biggest single supplier to the U.S. and to the UK.[17] The U.S. imports more than 50 percent of Thailand's total shrimp exports, and the UK imports another 7 percent alone.

The average American pet cat eats 30 pounds of seafood a year—more than twice the per capita seafood consumption by humans.

Outlaw Ocean Series by Ian Urbina of The *New York Times*

Warm water shrimp aquaculture provides what the market demands in ways that wild caught shrimp cannot. "This is due to the consistent quality, size and predictability of supply, all of which are characteristics that buyers insist on." [18]

There are about 25,000 shrimp farms in Thailand. They all rely heavily on migrant labor along with food made from fishmeal and fish oil. Most of the fish used to make shrimp food is provided by the large, minimally regulated Thai fishing fleet, fishing with indiscriminate gear, little to no recordkeeping, and no oversight in the high seas. Most of the workers on those boats are not there by choice. Many have not set foot on land in months, if not years.

Likewise, human trafficking fulfills the demand for labor in the processing of Thai farmed shrimp. The market demands peeled, processed shrimp, and historically Thai "peeling sheds" used child and forced labor to meet that demand.

[16] Wang and Reed, (February 2014). "Estimating the Demand for Imported Shrimp in the United States." http://ageconsearch.umn.edu/bitstream/162459/2/SAEA%202014.pdf
[17] Ibid.
[18] Seafish, "Industry Briefing: Labour Issues in the Fishing & Aquaculture Sector, http://www.seafish.org/media/publications/SeafishBriefing_LabourIssues_ThailandWWP_1214.pdf

THE ROLE OF FISHMEAL IN SHRIMP AQUACULTURE

Fishmeal is a generic term for a nutrient-rich feed ingredient used primarily in diets for domestic animals, especially pigs, chickens, and farmed fish. In the early 20th century, it was used as a high-quality organic fertilizer, a practice that diminished as it became more economic for use in animal feed.[19] Farmed shrimp food is made of 25-35% protein (fishmeal/fish oil) and 65-75% grains (soy, corn) with trace minerals added to ensure a balanced diet.[20]

Barrels of shrimp in Myanmar processing facility.
Kieran Kelleher/Marine Photobank

Most of the world's fishmeal is produced with whole fish, usually that of pelagic forage species (small prey fish near the base of the food chain). A commercial fishery catch largely targeting a single species is known as an industrial fishery. There are industrial fisheries for anchovy, herring, menhaden, and other forage fish. Fishmeal is a product for which the global market demand is growing exponentially. The price remains high for the fish oil and fishmeal made from industrial fisheries in countries such as Peru and Chile, largely because its end use is in value-added products.

However, virtually any fish or shellfish in the sea can be used to make fishmeal. The nutritional value of proteins from vertebrate fish differs little from one species to another; whole shellfish provide a less nutritious meal per pound, because of the low protein content of the shell. The Thai shrimp industry's growth has generated a demand for lower cost, less discriminating fishmeal. That demand is being met in part by the so-called Southeast Asian trash fishery.

[19] UN FAO Torry Research Station: "A Note about Fishmeal." http://www.fao.org/wairdocs/tan/x5926e/x5926e01.htm
[20] SeaPort. FAQ's on Warm Water Shrimp http://www.cport.net/assets/uploads/files/fao.pdf

DEFINING TRASH FISH & THE "TRASH FISHERY"

Raj Fish Meal & Oil Co.

Today, "low value/trash fish" is a loosely used (and inaccurate) term that describes fish species with various characteristics; but they are generally small in size, have low consumer demand and have little or no direct commercial value. As one UNFAO paper points out, "The term is not really appropriate in many cases as these fish form the basis of human nutrition in many coastal areas in Asia-Pacific. Fish can be trash for one community but preferred in another, making a precise definition difficult."[21]

Traditionally, local fishing supplied local communities with the species of preference—reserving higher value wild caught species for wealthier markets in country, and permitting juveniles the chance to grow to marketable size. As coastal habitats were degraded, and the number of fish diminished, fisheries had to move further off shore raising the cost of the catch of higher value species such as tuna. With the growth of the fishmeal and pet seafood trade, the low value/trash species offered an additional source of revenue.

However, for the purposes of discussing shrimp food in Thailand, the Southeast Asia trash fishery is defined somewhat differently. The Thai government's management of the country's fisheries has led to its own self-destructive cycle. As Environmental Justice Foundation's (EJF) 2015 report *Pirates & Slaves* states: [22]

[21] Funge-Smith, S., Lindebo, E. and Staples, D. UN FAO Asia Pacific Office. 2005. "Asian Fisheries Today: The Production & Use of Low Value/Trash Fish in Asia." http://www.fao.org/docrep/008/ae934e/ae934e04.htm

[22] EJF. (2015). *Pirates and Slaves: How Overfishing in Thailand Fuels Human Trafficking and the Plundering of Our Oceans.* EJF: London. http://ejfoundation.org/sites/default/files/public/EJF_Pirates_and_Slaves_2015.pdf

> The Thai fishing industry has undergone a textbook example of overfishing. Rapid industrialization of the fishing fleet during the 20th Century has resulted in too many vessels using destructive and unsustainable fishing methods to catch too many fish. This industry has consistently failed to consider the true ecological costs of its unsustainable business model. With boats now catching the equivalent of just 14 percent of what they were in the mid-1960s, Thailand's fish stocks and marine biodiversity are in crisis.

Thus the term trash fishery generally refers to the process of scooping up everything that can be caught in a net (including worms and other bottom dwellers) and sorting out the high value fish (generally tuna) and selling everything else for use in fishmeal.

As fish stocks closer to shore become depleted, the fleet must go further and further afield with the accompanying rise in fuel and related costs to operate the ships. And being so far from land, these fishing fleets know that neither the international fishing agreements (e.g. those governing tuna) nor the international recognitions of human rights and worker protections are likely to be enforced. Recent media reports describe work days of 20 hours, minimal food and water, shackling, beatings, and other worker abuses—including the killing and drowning of sick, resistant, or otherwise unwanted workers.[23]

An AP report published in March 2015 tracked seafood from the remote Indonesian community of Benjina to the supermarkets of the U.S. and EU. "Tainted fish can wind up in the supply chains of some of America's major grocery stores, such as Kroger, Albertsons and Safeway; the nation's largest retailer, Wal-Mart; and the biggest food distributor, Sysco. It can find its way into the supply chains of some of the most popular brands of canned pet food, including Fancy Feast, Meow Mix and Iams. It can turn up as calamari at fine dining restaurants, as imitation crab in a California sushi roll or as packages of frozen snapper relabeled with store brands that land on our dinner tables."[24] One example of a relatively recently emerging low-value, high-volume fishery to supply the fishmeal and pet food industry is that of Southern blue whiting, a fish "worth catching only if the costs involved are pared to the bone."[25]

In 1948, the United Nations adopted the **Universal Declaration of Human Rights**, which consists of 30 articles that outline the basic rights to which every human being is inherently entitled. While the declaration is not legally binding, it represents the first global expression of fundamental human rights and has been accepted widely throughout the world.

[23] Hodal, K. and Kelly, C., "Trafficked Into Slavery on Thai Trawlers to Catch Food for Prawns," *The Guardian*, 10 June 2014.
[24] McDowell, Mason, and Mendoza, "Are Slaves Catching the Fish You Buy?" AP 3 March 2015. http://bigstory.ap.org/article/b9e0fc7155014ba78e07f1a022d90389/ap-investigation-are-slaves-catching-fish-you-buy
[25] Field, Michael. The Catch, p. 43.

The pressure to maximize profits provides an ever-increasing incentive to cut corners. It has become common practice to refuel, restock, and offload catch at sea—the so-called "mother-ships" who ferry the fish back to market. Not only does the "transshipment" enable longer stays at sea and limit the ability of workers to escape, it reduces scrutiny from government officials, and obscures the sourcing and ownership of the fish—making illegal fishing easier.[26] It further permits the selling of workers ship to ship as labor is always in short supply and the loss of workers to illness and accident is not uncommon.

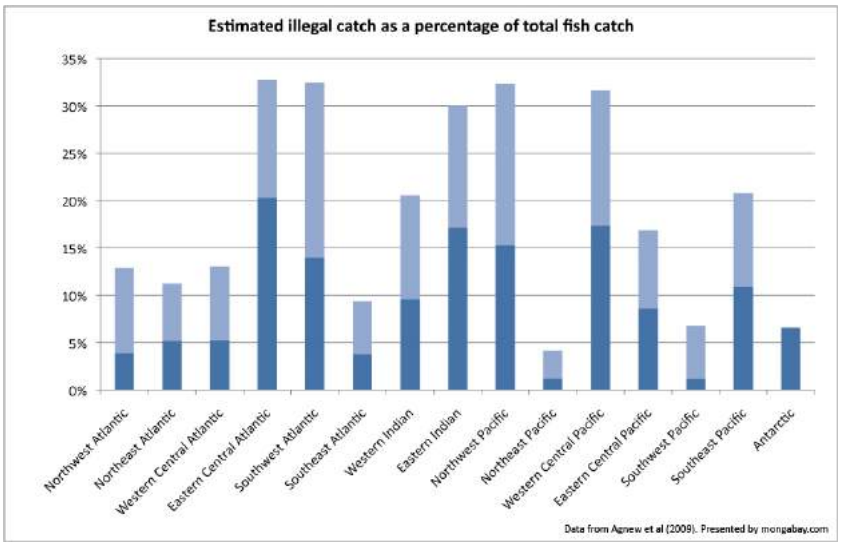
As Couper, Smith, and Ciceri write in their recent book, "The logistics of this sea-based transshipment system are elaborate. Several catchers with full loads [use GPS and minimal radio contact to rendezvous]…Two catchers at a time come alongside the mother ship, to both port and starboard," thus commingling catch, and providing plausible deniability about its sources.[27] The goal for many reform efforts is to establish traceability from the moment of catch of fish destined to become shrimp food to the moment of sale of the shrimp itself. In such a complex, multi-sourced supply chain, achieving that goal is fraught with challenges.

"A Mothership Your Mother Wouldn't Like" © Greenpeace

[26] Hodal, K. and Kelly, C., "Trafficked Into Slavery on Thai Trawlers to Catch Food for Prawns."
[27] Couper, A., Smith, H., Ciceri, B. (2015) *Fishers and Plunderers: Theft, Slavery and Fisheries at Sea,* Pluto Press.

DEFINING ILLEGAL FISHING & FLAGS OF CONVENIENCE

There are a number of international legal agreements that govern commercial behavior on the high seas as well as in the Exclusive Economic Zones (EEZs) of nations. The UN Food and Agriculture Organization monitors, evaluates, and provides guidance on best labor, sourcing, and other practices for food security worldwide. The International Maritime Organization (IMO), for example, regulates everything from shipping lanes to human rights at sea.



Some form of management plan governs most commercial fishing in national and international waters. Some countries, e.g. the United States and New Zealand, have formal management plans in place for many of the target fisheries in their national waters and EEZ, and intend for their fisheries to be caught by domestic fleets. Other countries have such frameworks in place that are intended to protect domestic fishers and their livelihoods, but may be vulnerable to outside fishing fleet pressure economically and otherwise. Still other governments have chosen to promote the taking of fish even as catch declines with no sense of implementing some more sustainable practices.

The international governance regimes help to adjudicate that the take of highly pelagic stocks, such as tuna, determine the rights of individual nation's fleets, define resource management regimes, and promote enforcement and compliance with international law. IUU or illegal, unreported and unregulated fishing is fishing that is conducted contradictory to legal conservation and management measures currently in place around the world.

The UN FAO International Plan of Action to Prevent, Deter, and Eliminate IUU adds additional definitions:[28]

> **3.1** Illegal fishing refers to 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

[28] UN FAO (2001) *The UN FAO International Plan of Action to Prevent, Deter, and Eliminate IUU*. http://www.fao.org/docrep/003/y1224e/y1224e00.htm

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.

3.2 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.

3.3 Unregulated fishing refers to fishing activities:

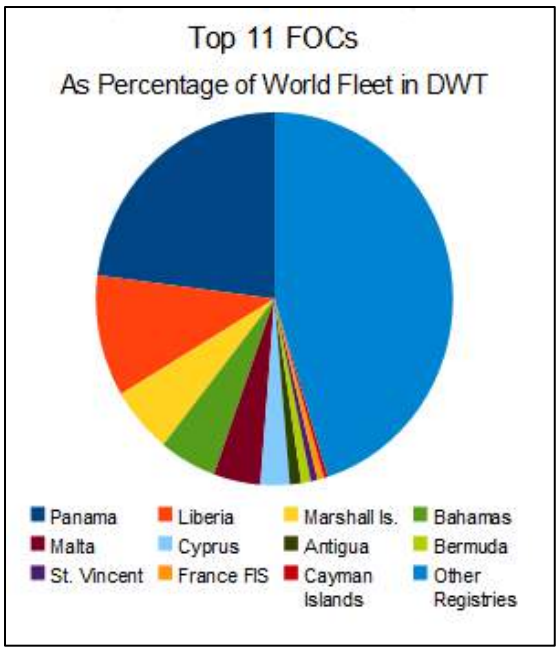
3.3.1 in the area of application of a relevant regional fisheries management organization that are conducted by vessels without nationality, or by those flying the flag of a State not party to that organization, or by a fishing entity, in a manner that is not consistent with or contravenes the conservation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

To avoid quota regulations and other limits, illegal catch may be mislabeled as a species of lesser value with fewer regulations until final point of sale.[29]

Flags of Convenience (FOCs): International law requires that every merchant ship be registered in a global registry and list a specific nation, called its flag state. These individual nations must in turn help enforce international maritime, labor, and other laws (and any applicable domestic laws) for ships flying their flag. Inevitably, there are nations with strong legal frameworks and the resources to enforce those frameworks, and there are those nations that not only have weaker legal frameworks, but also have a vested interest in collecting the revenue from vessel registration without spending on enforcement. Shipowners have a vested interest in ensuring that they maximize profits and may establish complex financial arrangements in order to register their ships elsewhere.[30]

[29] Couper, Smith, and Ciceri, 2015. *Fishers and Plunderers: Theft Slavery and Fisheries at Sea*.
[30] UNCTAD secretariat. (Data Compiler). World seaborne trade, by country group, 2013 [digital image]



Source: UNCTAD Secretariat

Historically, a ship would fly the same flag as the nationality of its owner to indicate its country of origin.[31] Whichever nation's flag a ship is registered under, it is required to abide by the laws and regulations of that country. An FOC is the practice of registering a ship in a country different from that of the ship's owner and is typically done to reduce operating costs or avoid the regulations of the true country of origin.[32] Today, approximately 73 percent of the world fleet flies an FOC. Consequently, developing countries, with their minimal regulations and cheap operating costs, account for over 75 percent of the global fleet registration.[33]

The world's fishing fleet stands at about 4 million vessels, but the vast majority are below 100 gross tonnage (GT). There are fewer than 25,000 industrialized fishing vessels globally (above 100GT), a number that has remained relatively static for the past decade or so. Two-thirds of the fishing fleet is less than 10 meters in length, and the vast majority of those boats operate in Asia.[34] To participate in international fisheries, fishing vessels are required to be registered.

Many countries are aware of the dual enforcement challenges of both FOCs and unregistered or ghost vessels. Indonesia has begun aggressively enforcing its own fishing fleet to ensure that foreign-owned vessels are not plundering the Arafura Sea, which provides some of the world's richest and most diverse fishing grounds, teeming with mackerel, tuna, squid and many other species. Although the sea is within Indonesian territory, it draws many illegal fishing fleets, including from Thailand.[35] The practice of dual registrations or simply not registering ships is also widespread. It has been estimated that Thailand's so-called "ghost fleet" may be as much as twice the size of its registered fleet.

Ports of Convenience: The level of enforcement at ports—from recordkeeping to inspection—varies greatly. As U.S., EU and other ports become ever more vigilant about illegal fish, mislabeling, and other activities, diversion to other ports becomes more common.[36] It is possible that enforcement actions related to where fish are landed (and are required to be landed) may be one strategy for reducing illegal take, and providing opportunities to intervene on behalf of enslaved workers.

[31] Hoffmann, J., Juan, W., Rubiato, J. et al. (2014). *Review of Maritime Transport 2014* (J. Rogers, Ed.). U.N. Conference on Trade and Development.
[32] Kateshiya, G. (2015, January 14). "Japan pushes for ratification of Hong Kong Convention, ship recyclers agree." *The Indian Express*. http://indianexpress.com/article/cities/ahmedabad/japan-pushes-for-ratification-of-hong-kong-convention-ship-recyclers-agree/
[33] U.N. Conference on Trade and Development, 5th session (2013). "Recent developments and trends in international maritime transport affecting trade of developing countries."
[34] UN FAO. "Fact Sheet on Fishing Vessels." http://www.fao.org/fishery/topic/1616/en
[35] McDowell, Mason, and Mendoza, "Are Slaves Catching the Fish You Buy?" Ibid.
[36] Sometimes called "ports of convenience"

DEFINING HUMAN RIGHTS & TRAFFICKING

The UN Declaration of Human Rights[37] specifically addresses the human right to life, liberty, and security of person (Article 3); the global prohibition on being held in slavery or servitude (Article 4); the protection from torture and inhuman or degrading treatment (Article 5); and the right to recognition everywhere as a person (Article 6). These are among the universally accepted grounds for protection against forced, bonded, or slave labor. Despite progress made on recognizing the diverse forms of trafficking and forced labor, the problem is global, challenging, and occurs at all levels.

As the International Labor Organization (ILO) reports: [38]

> Using a new and improved statistical methodology, the ILO estimates that 20.9 million people are victims of forced labor globally, trapped in jobs into which they were coerced or deceived and which they cannot leave. This figure, like the previous one in 2005, represents a conservative estimate, given the strict methodology employed to measure this largely hidden crime. Human trafficking can also be regarded as forced labor, and so this estimate captures the full realm of human trafficking for labor and sexual exploitation or what some call "modern day slavery." The figure means that around three out of every thousand persons worldwide is in forced labor at any given point in time.

Sadly, the percentage is much higher in the Thai aquaculture industry—on land and on the water. Ninety percent of the workers in the industry are migrants.[39] It has been estimated **33 percent** of seafood workers in Thailand's principal processing region have been trafficked.[40] The fishing fleet suffers from chronic labor shortages because of low wages and lousy working conditions, and thus relies on extralegal and illegal methods to fill the need.[41] Slave labor subsidizes the indiscriminate take of marine life, which in turn keeps the feed costs lower even though the food is not as efficient as higher quality more uniform fisheries (such as fish meal derived from anchovy and herring fisheries).

[37] *U.N. Universal Declaration of Human Rights,* 1948. http://www.un.org/en/documents/udhr/
[38] ILO. 2012. *ILO 2012 Global Estimate of Forced Labour Executive Summary.* http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---declaration/documents/publication/wcms_181953.pdf
[39] Seafish Report, Introduction,
[40] EJF. (2015). *Pirates And Slaves,* P. 22.
[41] Service, S. and Backstrom, B. (19 June 2012) "Confined to a Fishing Boar for Three Years (Part 1 of 2)," NPR. http://www.npr.org/2012/06/19/155045295/confined-to-a-thai-fishing-boat-for-three-years

THAILAND'S PROBLEM IS A GLOBAL PROBLEM

Thailand has been under scrutiny for its lax oversight of migrant labor, of migrant labor recruitment and transport practices, and its under-regulated fishing industry for some time. Episodically, the Thai government moves to address some facet of the illegal fishing and trafficking issue, but the economic forces against reform can seem overwhelming.

Part of the problem derives from the Thai fishing fleet's failure to abide by international agreements governing the take of tuna on the high seas. Officially, Thailand has 50,000 fishing boats on its fleet registry. Unofficially, it is estimated that the Thai fishing fleet could be as much as twice that size due to the practice of dual registry, so-called ghost ships, and registering under flags of convenience (FOCs).

Part of the problem derives from the need for low-skilled workers in many sectors of Thailand's economy. Thailand's shift in the 1980's from an agricultural economy to an aggressively export-oriented economy resulted in a migration from the rural areas to urban areas and an increasingly skilled workforce.[42] In Thailand, these trafficked men and boys often come from rural areas of Cambodia or Burma where economic opportunities are few and the per capita income only a fraction that of Thailand's.[43] The brokers who supply labor promise workers good jobs, and proceed to confiscate their passports and withhold wages once onboard.[44]

Thai law does not recognize refugees, nor is Thailand party to the relevant conventions[45] that define and frame refugees. The Center for Migration studies reports that this puts such groups as the Rohingya people from Burma at risk of slavery—their own government does not recognize them has being from Burma, and thus they are stateless (with no identity papers or passports), and fall through the gaps in international refugee and other potential protection frameworks.

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[42] McGann, N. *The Opening of Burmese Borders: Impacts on Migration, The Migration Policy Institute* (2013), http://www.migrationpolicy.org/article/opening-burmese-borders-impacts-migration
[43] Ibid.
[44] EJF (2010). *All at Sea – The Abuse of Human Rights Aboard Illegal Fishing Vessels.* Environmental Justice Foundation: London. P. 12.
[45] Ostrand, Nikki, The Stateless Rohingya in Thailand, Center for Migration Studies, (2014) http://cmsny.org/the-stateless-rohingya-in-thailand/

Part of the problem also lay with the Thai government, which was only sporadically responsive to international pressure, a problem that has only grown worse since the coup in 2014. As Human Rights Watch reported, "The military staged a coup on May 22, 2014, establishing the National Council for Peace and Order (NCPO) junta and sending Thailand's human rights situation into free fall." [46]

> Thailand's giant fishing fleet is chronically short of up to 60,000 fishermen per year, leaving captains scrambling to find crew. Human traffickers have stepped in, selling captives from Cambodia and Myanmar to the captains for a few hundred dollars each. Once at sea, the men often go months, or even years, without setting foot on land.
>
> -Shannon Service & Becky Sandstrom, NPR, June 2012

Apart from other human rights abuses, Thailand's labor laws provide little protection for migrant workers. Migrant workers remain extremely vulnerable to exploitation, with female migrants enduring sexual violence and trafficking, and male migrants facing extreme labor exploitation, including being trafficked onto Thai fishing boats.[47]

The workers are often denied all basic human rights and become a part of the illegal, unreported and unregulated (IUU) fishing problem, which in turn continues to deplete fish stocks at lower than what actual costs would be – an economic distortion. This vicious cycle of declining fish stock and rising slavery has been able to exist due to market pressures, corruption within the local governments, and the lack of adequate oversight from retailers.[48] Despite claims from major retailers that they are working within the Thai supply chain to improve conditions for workers and ensure legal sourcing of their food, as the AP and other investigations have found, there are many ways in which to make excuses for flaws in the system.

[46] Human Rights Watch. *World Report 2015 Country Chapters: Thailand*, 2015. https://www.hrw.org/world-report/2015/country-chapters/thailand
[47] Ibid.
[48] EJF (2014). *Slavery at Sea: The Continued Plight of Trafficked Migrants in Thailand's Fishing Industry.* An EJF Report. Pg. 5.

WHAT CAN BE DONE

A migrant worker from Myanmar arranges shrimps at her shop in the Thai border town of Mae Sot/ Reuters

The explanations for failure to address all kinds of trafficking are fairly universal: Resources are limited. The issues are complicated. The high seas are vast. The demand for labor under horrible conditions is filled by the most desperate, and most vulnerable. As is the scope for illegal activity, whether it's drug smuggling, human trafficking, illegal fishing, pollution, or other crimes. Often the activities overlap. There is no "High Seas Police Department" with eyes and ears, or boats on the water.

Illegal fishing undertaken by slave labor represents one of the most challenging enforcement problems. Commercial fishing in the ocean is regulated. Slavery is against the law everywhere. Yet, slavery is estimated to generate $150 billion for traffickers each year. And in the case of illegal fishing and slavery at sea, there are diverse ways to take advantage of limited enforcement.

So, what can be done?

Shed Light on the Problem: Recognize and frame the problem through research, technology, and public awareness.

Take Action: Consumers can act. Communities of origin can be empowered. Ensure the mechanisms are in place to address the problem. Generate the political will to implement the mechanisms. Enact those mechanisms to stop and prevent the abuse of human rights and ocean health.

SHEDDING LIGHT ON THE PROBLEM


Gregory Bourolias/Unsplash

The goal of shedding light on fishing industry practices is to generate public pressure, and in turn, the political will for reform and enforcement. The role of trafficked labor and slavery in the global fishing and aquaculture industry has been highlighted in government reports, in UN reports, in media outlets of all kinds, and by dedicated non-profit organizations around the world. Diverse individuals and organizations have worked hard to ensure the urgency survives past the immediate public outcry that inevitably follows the latest media release.

In the News (See Resources list at the end of this paper for more details)
New Zealand reporter Michael Field has been reporting on aspects of the slavery-seafood relationship for a decade, resulting in dozens of articles and, in 2014, his book *The Catch*. Renowned slavery investigative reporter E. Benjamin Skinner undertook his own coverage for *Bloomberg* in February 23, 2012. In 2012, the U.S. National Public Radio ran a two-part series on migrant labor and human trafficking in Thai fisheries. In 2014, *The Guardian* ran a piece connecting slave labor and the seafood on the plate in the UK and the U.S., including that of the family cat. The *AP* and *The New York Times* each undertook prolonged investigations into the relationship between human trafficking and seafood that were published in 2015. Likewise, the *Washington Post* kept up a steady stream of articles beginning with "Don't Eat that Shrimp" in the fall of 2015. *Mother Jones* highlighted multiple problems with the shrimp seafood trade in its January 2016 articles. Each of these reports were republished and replayed way beyond their home markets – and can be linked to progress, if incremental, in the shape of reforms that support better fisheries and human rights protections.

It can be argued, for example, that *The Guardian's* coverage inspired the UK seafood industry's December 2014 report on conditions in Thailand, and activities to clarify its role in improving and supporting improvements the production of warm water prawns. In that report,[49] Seafish reported that incremental change was occurring but more needed to be done. "Both environmental and economic pressures support the need for management standards and the certification of aquaculture production, however local and international industry has a very significant role to play, both collaboratively and individually, in driving improvement within the

[49] SeaFish, (2014, December) "Industry briefing - Labour issues in the fishing and aquaculture sector: Focus on Thailand/warm water prawns."
http://www.seafish.org/media/publications/SeafishBriefing_LabourIssues_ThailandWWP_1214.pdf

supply chain to ensure that each link in the supply chain makes a binding, documentable pledge to avoid all forms of labour abuse."

The work of the Ethical Trading Initiative (ETI), an alliance of companies, trade unions and NGOs that promotes respect for workers' rights around the globe. According to Seafish, "Since last year, ETI has been working with the International Labour Organisation (ILO) in Thailand to catalyze the international community's coordinated action to engage with the Thai government and other Thai institutions." ETI further reports, "Commitments have been made by the government in various areas including a longer-term coherent policy on migrant workers, access to services and the ability of migrant workers to change employers and strengthening oversight of recruitment agencies, brokers and payment of recruitment fees. However government's response to international pressure on this issue has slow and many lament there is no real political will for change."[50]

Likewise, the AP story inspired a student movement to ask a major U.S. university food supplier, Aramark, to improve the sourcing of seafood for its clients.[51]

NGO Reports One cannot over-estimate the important role of non-profit organizations in tracking slavery, illegal fishing, and the intertwining human rights abuses present across the seafood industry. Like those reporters who have pursued these investigations at great personal risk, so too have those who are on the front lines of defending the defenseless (whether human or fish), providing the media with credible statistics and reports, and pursuing solutions and the enforcement of the law. (There is a list of non-government organizations working on these issues in Appendix II.)

For example, in 2015, the Environmental Justice Foundation published *Pirates and Slaves: How overfishing in Thailand fuels human trafficking and the plundering of our oceans*, the latest of their reports on slavery and fishing. EJF's report received widespread press and affirmed in part, "Effective fisheries management in Thailand could help combat pirate fishing, halt biodiversity loss, enable ecosystems and fish stocks to recover, and bring an end to human trafficking and devastating human rights abuses." EJF's report makes important recommendations as to what can be done to make real change.

The Center for Migration Studies has tracked some of the migrant labor challenges for decades, including the ways in which the Thai government has (and has not) worked to address the human rights abuses associated with undocumented and underregulated migrant workers in their labor force.

Greenpeace is one organization that has been relentless in its efforts to publicize illegal fishing, its effect on global ocean stocks, and the related human rights abuses. In addition to its regularly updated "Blacklist" of scofflaw fishing boats, Greenpeace promotes citizen engagement in ending the practice of pirate fishing, and advocates for better technological monitoring at sea. Sea Shepherd has been dogged in its pursuit of illegal fishing vessels

[50] SeaFish, (2014, December) "Industry briefing - Labour issues in the fishing and aquaculture sector: Thailand."
[51] Xiong, L., "Students Demand Aramark Serve sustainably Caught Tuna," 19 May 2015. *EcoWatch.* http://ecowatch.com/2015/05/19/demand-aramark-sustainable-tuna/

striving to evade enforcement agencies. Oceana is partnering with Google and SkyTruth to increase vessel monitoring.

As with the media coverage summarized above, it can be argued that such agreements as the Port State Measures Agreement (ratified by the U.S. in 2014), the proposed and passed bans on transshipment by other governments and multi-lateral institutions, and other responses can be tied to these efforts.

It is also possible that increased pressure for improvement can occur as more countries are assessed under alternative indicators, such as the Environmental Democracy Index.[52] The Environmental Democracy Index ranks countries on a complex suite of indicators forming three pillars: Laws, Transparency, Justice. The laws are the legal frameworks for environmental activity in the nation. The transparency means how much access does the public have to important data about the country's resources and violations of environmental laws. And the justice pillar measures the ability of the public to bring complaints about violations to the attention of authorities, and the degree to which the role of civil society is respected in these processes.

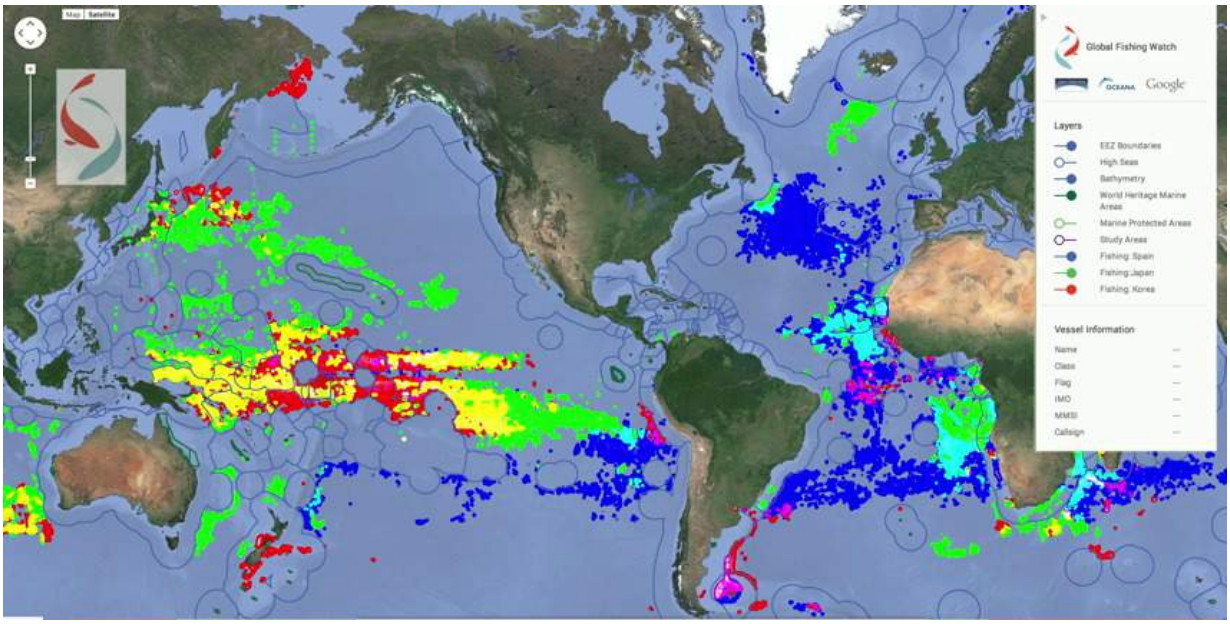
Technology has been the big promise of international fishery management regimes. The theory runs along these lines: If we know where the boats are, it has been argued, that we can keep better tabs on what they are catching, and we can better track illegal fishing and its accompanying human rights abuses. Such technological solutions embrace both tracking vessels and remote monitoring of specific regions such as marine protected areas.

1. **Tracking Vessels** Basic technology to achieve the vessel-tracking portion has been around for decades, but it has been slow to be universally adopted. Unfortunately, part of the deal when national shipping fleets sign on, is that the data concerning the locations to which fishing vessels travel is not public information. They invested is finding the fish, why should they be required to reveal identification to competitors – or so goes the argument. Based on the idea that a wild public resource becomes the property of the fishermen when its location is identified, catch locations and volume by site are essentially privately held data, protected by governments and industry alike. However, efforts to globalize enforcement efforts are gaining traction. All legal fishing boats are supposed to be on a registry and to carry position-indicating devices, which are also known as VMS (vessel monitoring systems) or AIS (automatic identification systems) not unlike the transponders required on aircraft.

   Like the challenge of secrecy, a corollary problem is what to do with the data. Thousands of fishing vessels traveling thousands of miles adds up to a significant amount of data that requires monitoring, management, and, to be effective, some kind of organized response to misconduct. Given limited resources, governments need more tools, like automated systems and big data analysis looking and watching for anomalies indicating illegal activities, or greater willingness to share the data with other partners—NGOs, the public—who can support any enforcement efforts.

[52] Environmental Democracy Index 2015, World Resources Institute - http://www.wri.org/our-work/project/access-initiative-tai/commissions.

One new effort to help provide and manage that data is Global Fishing Watch, a big data technology platform that leverages satellite data to create the first global view of commercial fishing. On November 14, 2014, SkyTruth, Oceana and Google unveiled a prototype at the 2014 IUCN World Parks Congress in Sydney, Australia, with a public release version in development. The hope is that Global Fishing Watch will ultimately give citizens a simple, online platform to visualize, track and share information about fishing activity worldwide.[53]



Global Fishing Watch: SkyTurth/Google/Oceana

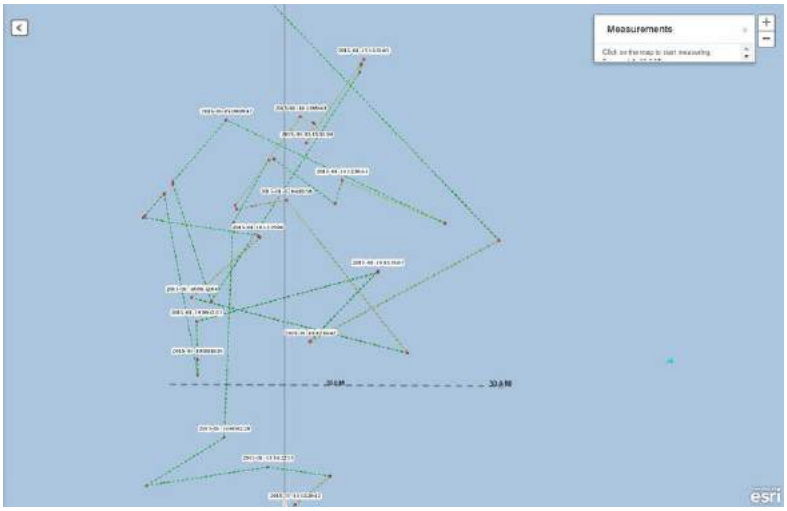
In January 2015, the Pew Charitable Trusts launched Project Eyes on the Seas that is designed to help authorities monitor, detect, and respond to illicit fishing activity across the world's oceans. The system is being developed in partnership with Satellite Applications Catapult, a British company established through a U.K. 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.

To be most effective, however, most efforts to police the global fleet—fishing and otherwise—depend on compliance with registry. In some countries, a single registration can carry multiple boats with the same name, effectively hiding the effort of two. Other fishing boats ply the waters without an electronic tracker. It is estimated that the ghost vessels (unregistered or a registered vessel and its ghost mate operating under a single registry) may make up more than half of the total fishing effort—and a comparable share of illegal fish take and exponentially more illicit labor practices, including slavery.

2. **Aerial and in-water Monitoring** Across conservation enforcement, people are working hard to develop inexpensive, easy to use methods to enable monitoring and

[53] Skytruth, "Global Fishing Watch," http://skytruth.org/mapping-global-fishing/#sthash.rlCtJyLj.dpuf.

enforcement. These technologies span the gamut from low-level satellites to drones to in-water monitors.[54] Coupled with increased government patrols and citizen reporting, there are opportunities to better equip the enforcers with the tools they need to reduce the obstacle that vast distances on the high seas represent.



An image of satellite ship tracking by SkyTruth. The ship's irregular track and variations in speed, as seen on a map, are indicative of fishing. Courtesy of SkyTruth via Exact Earth ShipView

3. **Dealing with Transshipping** The practice of transshipping makes such monitoring somewhat less valuable since the catch is aggregated and the "mother" ships can plausibly deny awareness of human rights violations or illegal catch when arriving back in port. Thus, Greenpeace and other organizations have advocated for even stronger measures, most recently at the Western and Central Pacific Fisheries Commission (WFPFC) meeting in September 2015: "We also want the high seas closed to all fishing, as there are vessels that are 'high seas only vessels.' These don't have a license to fish in any of the Pacific country waters, have different sets of rules that apply to them, and are more prone to fish illegally away from the watchful eyes of Pacific authorities."[55] The obvious corollary is that those same "high seas only vessels" have seafood workers at the mercy of captain and senior crew, whose conditions might be improved in the absence of transshipment.

   In preparation for the fall 2015 UN General Assembly vote on the Sustainable Development Goals for the next 15 years, U.S. Department of State Undersecretary Catherine Novelli wrote an op-ed for the *Huffington Post* emphasizing the need for traceability, stating:[56]

   > Working closely with other governments and NGOs, we are exploring new technologies to improve surveillance and

[54] UNEP GEAS, May 2013, "A New Eye in The Sky: Drones." http://www.unep.org/pdf/UNEP-GEAS_MAY_2013.pdf

[55] Nauwakarawa, K. Micronesia Forum, "Greenpeace Urges Pacific Nations to Ban Fish Transshipment," 23 Sept 2015. http://www.micronesiaforum.org/index.php?p=/discussion/14379/greenpeace-urges-pacific-nations-to-ban-fish-transshipment/p1

[56] Novelli, C., "Our Fate Tied to the Ocean's Fate," *Huffington Post.* Op-Ed, 22 Sept 2015. http://www.state.gov/e/rls/rmk/247157.htm

enforcement of fishing activities in the ocean and fishing bans in MPAs. We are developing a system to keep illegally caught seafood out of the United States by tracking it throughout the supply chain -- from harvest to entry into the country. And we are urging all countries to join the Port State Measures Agreement, a new international treaty that will block illegally caught seafood from entering the stream of commerce around the world."

It is to be hoped that there will be an accompanying effort to protect human rights throughout the supply chain as well.

4. **Traceability** Traceability is the ability to systematically identify a unit of production and track its passage from origin to point of sale—including any alterations, additions, or processing that may occur. It is particularly important in consumer product safety—the identifiable tainted batch of canned soup or the production dates for framing an auto recall, for example. In addition to monitoring fishing vessels at sea and inspecting catches when they are landed, the issue of seafood traceability begins with the source and ends at the plate. Thus, full seafood traceability also implies that seafood sold by a restaurant or retailer can be traced throughout the supply chain back to its point of harvest by a vessel or on a farm, and from the farm to the feed source.

European Union: 'Traceability' means the ability to trace and follow a food, feed, food-producing animal or substance intended to be, or expected to be incorporated into a food or feed, through all stages of production, processing and distribution.

Codex Alimentarius: Traceability / product tracing is the ability to follow the movement of a food through specified stage(s) of production, processing and distribution.

International Organization of Standardization (ISO):
The ability to trace the history, applications, or location of that which is under consideration. When considering a product, traceability can relate to the:

- origin of material and parts;
- processing history; and
- distribution and location of the product after delivery.

Source: Traceability: A Practical Guide for the Seafood Industry, Petersen & Green

In its 2012 report on traceability, FishWise emphasizes the need for stakeholders to work together to "eliminate illegal fishing and unacceptable social conditions from supply chains, reduce the rate of seafood mislabeling, and allow companies to track and

communicate progress towards sustainable seafood commitments."[57] Stakeholders include governments, NGOs, production and processing facilities, international bodies, buyers, sellers, and the fishing fleets captains, crew, and owners.

Traceability is enormously challenging in the seafood business, given its global scope and high seas components. Diverse organizations, national governments, and international agencies are working on ways to improve the traceability of seafood from catch to plate. For example, the Obama administration released its own plan for reducing IUU fishing and stopping the importation of illegal fish products to the United States in early 2015.[58] In announcing the renewed efforts on both monitoring and traceability, NOAA pledged to work with international governments, Regional Fisheries Management Organizations (RFMOs), and others to "advance best practices for: the monitoring, control, and surveillance of international fisheries; the implementation of port State controls; and, compliance monitoring." In addition, the measures to address traceability begin with defining the types of information to be collected along the "seafood supply chain from harvest or farm to entry into the U.S. market and the ways in which this information will be collected by October 2015." Likewise NOAA announced that "with input from our partners through a public engagement process, [we will] identify the species to which this system will first apply based on how at risk they are of being the product of IUU fishing or seafood fraud."[59] Aggressively limiting the ability of illegal (and illegally mislabeled) seafood access the American market may also and hopefully have a chilling effect on the abuse of human rights and take of low-value seafood.

International Reporting and Ranking: Tracking national activities under international protocols inspires nations to improve their track records on labor laws, democracy and access to justice, and other fundamental human rights protections. The release of such rankings, the related media coverage, and public response can provide levers for both international and domestic pressure for change.

For example, in 2014, the United States placed Thailand at 188th on the ranking of human rights protections by the world's nations. Thailand's rating in the U.S. government's annual report has dropped steadily in recent years from the bottom half of Tier 1 to the bottom half of Tier 3—the lowest rating. In anticipation of the report, *Undercurrents* reported, "The Thai Frozen Foods Association (TFFA) concedes a downgrade to Tier 3 -- widely suspected to be inevitable -- on the U.S. State Department's Trafficking in Persons (TIP) report would have negative consequences for the industry."[60]

The Thai government protested the U.S. State Department's ranking, claiming that much of the activity was beyond its scope and capacity for enforcement, if it even occurred at all. However,

[57] Boyle, M. (2012) "Without a Trace II: An Updated Summary of Traceability Efforts in the Seafood Industry." FishWise. http://fishwise.org/images/fishwise_traceability_white_paper_august_2012.pdf
[58] NOAA, 15 March 2015, "Presidential Task Force Releases Action Plan to Combat IUU Fishing and Seafood Fraud." http://www.noaanews.noaa.gov/stories2015/20150315-presidential-task-force-releases-action-plan-to-combat-illegal-unreported-and-unregulated-fishingaand-seafood-fraud.html
[59] Ibid.
[60] *Undercurrent News: Seafood Business News from Beneath the Surface*, June 7 2014, "Thai industry: U.S. downgrade would 'definitely' affect business," http://www.undercurrentnews.com/2014/06/19/thai-industry-us-downgrade-would-definitely-affect-business/.

the Thai government remains hesitant, if not unwilling, to fully participate in international efforts to address human rights abuses and slavery in its migrant workforce. For example, Thailand initially voted against the ILO Protocol against forced labor in June of 2014, and then changed its vote.[61] International pressure is increasing however, and the international rankings do play a role in national politics as the global community strives for greater equity across the board.

A second example of international reporting and ranking is the potential to establish a global ethics code for seafood sourcing. The United Kingdom's Seafish issued a new report by ethical expert Roger Plant at the World Seafood Congress in September 2015. In that release, Seafish announced a multi-pronged strategy. First, to look at how it could add a human rights screen to its Risk Assessment for Sourcing Seafood (RASS) tool, which "currently provides risk scores on the environmental impact of fisheries. This will give seafood buyers a fuller picture of the environmental and social risks linked to the seafood they buy." Plant spoke at the Congress, stating, "I believe the biggest change required is a code of conduct on social responsibility, similar to the FAO codes on responsible fisheries which has led to vast improvements in the sustainability of the marine environment." [62]

TAKING ACTION

International Labor Agreements Both the International Labour Organization (ILO) and the International Maritime Organization (IMO) have developed international regulations that attempt to stop IUU fishing. In 2007, the ILO Convention 188, 'Work in Fishing Convention,' attempted to set standards, but states have decided not to ratify it because of "financial incapacity."[63] The most recent IMO convention on IUU fishing, the Torremolinos Protocol, has been ratified by enough states to come into force. However, the agreement required that it be ratified by states with a financially significant percentage of the international fishing fleet to actually put it into practice.[64] What both of these show is that it is the biggest states (including the U.S., New Zealand, the EU nations) need to not only ratify these agreements, but also to hold ships accountable for relevant fishing and labor laws when they enter one of their ports, especially if they are going to offload product. Likewise, where government observers are put on the fishing vessels, it might be equally important to add a requirement for reporting on living conditions (as a start) aboard the vessel. Too often, their reporting is limited only to the fish handling they observe (when they are awake and on deck).[65]

The **ILO Good Labor Practices** program is designed to train managers in understanding how these standards affect their workers and their businesses. How that training will be deployed in the Thai fishing industry remains unclear. However, the ILO has also undertaken a more specific child labor and workplace abuse effort in the Thai seafood processing industry,[66] the **ILO Project Addressing Child Labour and Promoting Better Working Conditions in the**

[61] *Seafish*, "Industry Briefing, Labour Issues in Thailand," 16 Dec. 2014.
[62] Plant, R., "Ethical issues impacting on the UK seafood supply chain," *Seafish*, Sept. 2015. http://www.seafish.org/about-seafish/news-and-events/news/-seafood-industry-needs-a-code-of-conduct-on-social-responsibility-says-ethics-expert
[63] EJF (2010). *All at Sea.* Environmental Justice Foundation: London. Pg. 15.
[64] EJF (2010). *All at Sea.* Environmental Justice Foundation: London. Pg. 16.
[65] Field, M., *The Catch* p. 114-115
[66] ILO, Child Labour: Combating the Worst Forms of Child Labour in Shrimp and Seafood Processing Areas in Thailand. http://www.ilo.org/newyork/issues-at-work/migration/WCMS_161095/lang--en/index.htm

Thai Shrimp and Seafood Processing Industry. The ILO has partnered with the Ministry of Labour (Department of Labour Protection and Welfare), Ministry of Agriculture and Cooperatives (Department of Fisheries), Thai Frozen Foods Association, Employers' Confederation of Thailand, trade unions, farmers' associations and civil society in Thailand to "create a shrimp and seafood processing industry that is free of child labour and offers decent working conditions and opportunities to all workers, including migrant workers who contribute to the economic development of the industry and the country." [67]

Sometimes public pressure on trafficking can backfire, causing unintentional consequences. For example, in January 2015, the government of Thailand came under global criticism for its "radical plan" to use prisoners to fill the labor shortage in the fishing fleet. [68] In December, the country's Labor Ministry said that it would send [consenting] prisoners who had less than a year left of their sentence to work on fishing boats to ease a labor shortage in the fishing sector and to combat human trafficking fueled by the shortage. The government defended its proposal as a way to ease prisoners back into society and reduce the demand for trafficked labor. Opponents successfully argued that the move neither addressed the fundamental causes of the chronic labor shortage, nor the human trafficking issue, and the Thai government backed down. Significant action on the trafficking side of the fishing labor equation has not occurred.[69]

Thai Fishing Industry: Chris Kelly for the Guardian

However, these actions build on the Thai government's actions to regularize migrant labor practices in response to external pressures in multiple industries—documenting and permitting laborers from Cambodia (for example) and non-Rohingya Burmese, to create a more regulated migrant work force that can be better monitored in respect to adequate pay, proper treatment, and better working conditions. The Center for Migration Studies reports, "some unauthorized migrants have had the opportunity to regularize their status through a national verification process which allows them to obtain work permits, an initiative of the Thai government to address the legal status problems of large numbers of irregular migrants from Cambodia, Lao People's Democratic Republic, and Myanmar. Rohingya, however, are also barred from this process because they are not recognized as nationals by any government."[70] Thus, progress is slow, but continued pressure on the Thai government may

[67] ILO, Good Labour Practices Programme. http://www.ilo.org/asia/WCMS_221455/lang--en/index.htm
[68] Sawitta Lefevre, A. " Bold Thai plan to send prisoners to sea sinks amid rights protests," *Reuters* via *International Labor Rights Forum*, 20 Jan 2015. http://www.laborrights.org/in-the-news/bold-thai-plan-send-prisoners-sea-sinks-amid-rights-protests
[69] ILO, Child Labour: Combating the Worst Forms of Child Labour in Shrimp and Seafood.
[70] Ostrand, N. http://cmsny.org/the-stateless-rohingya-in-thailand/#ixzz41wiziWiM

help ensure better labor practices in the seafood industry.

Because the jobs are in Thailand and the industry depends on migrant labor, stepped up efforts to enforce human rights in the recruitment and permitting of migrant labor would at least improve monitoring of the problem. In addition, it would help to identify economic stimulus for the home villages of the most vulnerable workers that would enable them to support their families closer to home. While full employment of the migrant workers in their home villages might not be possible, building capacity and improving the ability of workers to understand labor agreements and other documents would at least ensure that they had some of the tools to work in fairer conditions.

Empowering the Home Communities Home communities that are poor and undereducated offer prime hunting grounds for recruiters who woo workers with promises of safe factory jobs and steady wages to send home. Without an understanding of the law or access to help, victims of slavery are often unaware of or unable to defend their rights, succumbing to debilitating and humiliating pressure from slave holders. However, Free the Slaves, a US-based NGO, has found that when given adequate support and resources, communities have the power to actively combat and prevent slavery. Community-based models meet communities where they are in order to disrupt networks of slavery in lasting ways that can be scaled to have global impact. From understanding individual rights to maintaining a slavery survivor register to help track re-integration, there are tools that can and should be delivered to the communities at the source.

The Courts Prosecution of brokers, sea captains, and other actors in the slavery and illegal seafood trades is notoriously lax. Migrant laborers are necessary but undervalued and have few, if any, government champions. The U.S. State Department 2014 Trafficking Report noted in its long and compelling analysis of Thailand's role, and efforts to address, human trafficking:[71]

> Despite frequent media and NGO reports documenting instances of forced labor and debt bondage among foreign migrants in Thailand's commercial sectors—including the fishing industry—the government demonstrated few efforts to address these trafficking crimes. It systematically failed to investigate, prosecute, and convict ship owners and captains for extracting forced labor from migrant workers, or officials who may be complicit in these crimes; the government convicted two brokers for facilitating forced labor on fishing vessels.

Both of those brokers were Burmese. The Thai brokers identified with help from NGOs were not prosecuted.

Sometimes enforcement is a challenge because of the ways in which investigations are undertaken, as the Environmental Justice Foundation points out. For a long time, local police in Thailand did not intervene when asylum was sought—believing the captain that money was owed and the asylum seeker was trying to escape debt, not slavery. Often the interrogations

[71] U.S. State Department *Trafficking in Persons Report 2014*, p. 373, http://www.state.gov/documents/organization/226849.pdf

involve the police asking the captain to translate their questions to the crew, limiting the ability of the crew to respond freely. Better training in recognizing human trafficking and improving independent translation services would aid in providing the right kind of intervention by law enforcement and other authorities.

Some consumers chose a different legal tactic in the summer of 2015. A group of pet owners filed a law suit against Nestle arguing that the "its *Fancy Feast* cat food contains fish from a Thai supplier that uses slave labor."[72] Arguing equally that they would never have knowingly purchased slave-based products, a different group had already filed a suit accusing Costco Wholesale Corp. of "selling farmed shrimp from Thailand, where slave labor and human trafficking in the fishing industry are allegedly widespread."[73] Both cases rely on statements required under California's supply chain reporting act (passed in 2010) and supporting California statutes as the basis for their complaints.[74] As of this writing, the courts have made no decisions in either case.

"It is a choice of profits at the cost of people and the environment."[75]

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Some organizations believe that this kind of pressure, coming from diverse areas and constituencies is helping to ensure that efforts under way will be more effective. For example, they cite the Shrimp Sustainable Supply Chain Task Force, which was established in July 2014.[76] The Task Force is a group of major retailers, suppliers, NGOs, and government actors, gathered to address the linked problems of product

[72] Pettersson, E. and Burnson, R., "Nestle Accused of Putting Fish From Slave Labor in Cat Food." *Bloomberg BusinessWeek*, 27 August 2015. http://www.bloomberg.com/news/articles/2015-08-27/nestle-accused-of-putting-fish-from-slave-labor-in-cat-food

[73] Idib.

[74] Bournazian, J.D., "Proceed With Caution: Navigating the California Transparency in Supply Chains Act – What Might Seem Like a Straightforward Reporting Requirement, Actually Contains Possible Traps," *Troutman & Sanders.* 16 September 2016. http://www.troutmansanders.com/proceed-with-caution-navigating-the-california-transparency-in-supply-chains-act--what-might-seem-like-a-straightforward-reporting-requirement-actually-contains-possible-traps-09-16-2015/

[75] EJF, Pirates and Slaves (2015).

[76] Shrimp Sustainable Supply Chain Task Force Overview and Progress Update (May 2015). *Undercurrent News.* https://js.undercurrentnews.com/wp-content/uploads/2015/05/SSSC-Task-Force_Overview-and-Progress_May-2015_Short_Master_180515-11.pdf

traceability and labor trafficking. Among its components is a Vessel Watch Subgroup, which is focusing on developing how to credibly monitor a robust Code of Conduct and enforce standards for the vessels, ports and broker systems where lies the greatest risk and opportunity for trafficking. The Task Force includes the big retailers Costco, Walmart, Tesco; the pet food brands; the dominant suppliers Thai Union Global and Charoen Pokphand Foods (CP Foods); Oxfam, Verite, World Wildlife Fund and Environmental Justice Foundation. The task force has three objectives: 1) Implement track and trace systems with international verification from feed mill [back] to vessel; 2) Drive Thai port codes of conduct with international recognition; and 3) Drive fishery improvement projects in the Gulf of Thailand and the Andaman Sea.

A progress report was issued in May 2015 that indicated that the basic criteria under Objective 1 were being framed and that an independent auditing group was charged with developing a traceability program.[77] It further reported under Objective 2 that the "Thai National Legislative Assembly has approved the new fisheries act and subsidiary laws are now being written to cover the scope of fishery management. This will specify details regarding minimum net sizes, conservation zones and new punishment measures for breaking the law." Finally, the report states that the group has concluded that only through FIPs (Fishery Improvement Projects) can the Gulf of Thailand and Andaman Sea fisheries be sustainable, and that is where the research effort is under way.

Other Governmental Actions

In response to the yellow card issued by the European Union in April 2015, the Thai government protested, and said it would begin steps to address the EU's concerns about labor and human writes abuses. The yellow card is a formal warning that it needed to clean up its poorly regulated seafood industry, and that the consequences could be a ban on imports of seafood from Thailand. The EU revisited the issue in January 2016[78] and as of March 4, 2016 had not completed its review. The response, according to the Guardian, was "Bangkok says it has mostly completed a set of measures set out by the EU last year to clean up the industry, including registering fishing vessels and cracking down on human trafficking networks."[79]

Representatives of the Thai government presented at several meetings in the EU, including the Sustainable Seafood Summit in Malta in early February, to clarify their actions and defend progress made to date. Also speaking at a special human rights workshop the day before the Summit began, was the United Kingdom's first Independent Anti-Slavery Commissioner, a position created in the wake of the UK's passage of the Modern Slavery Act of 2015.[80] The Act addresses slavery in all its forms, including the role of slavery and trafficking in seafood.

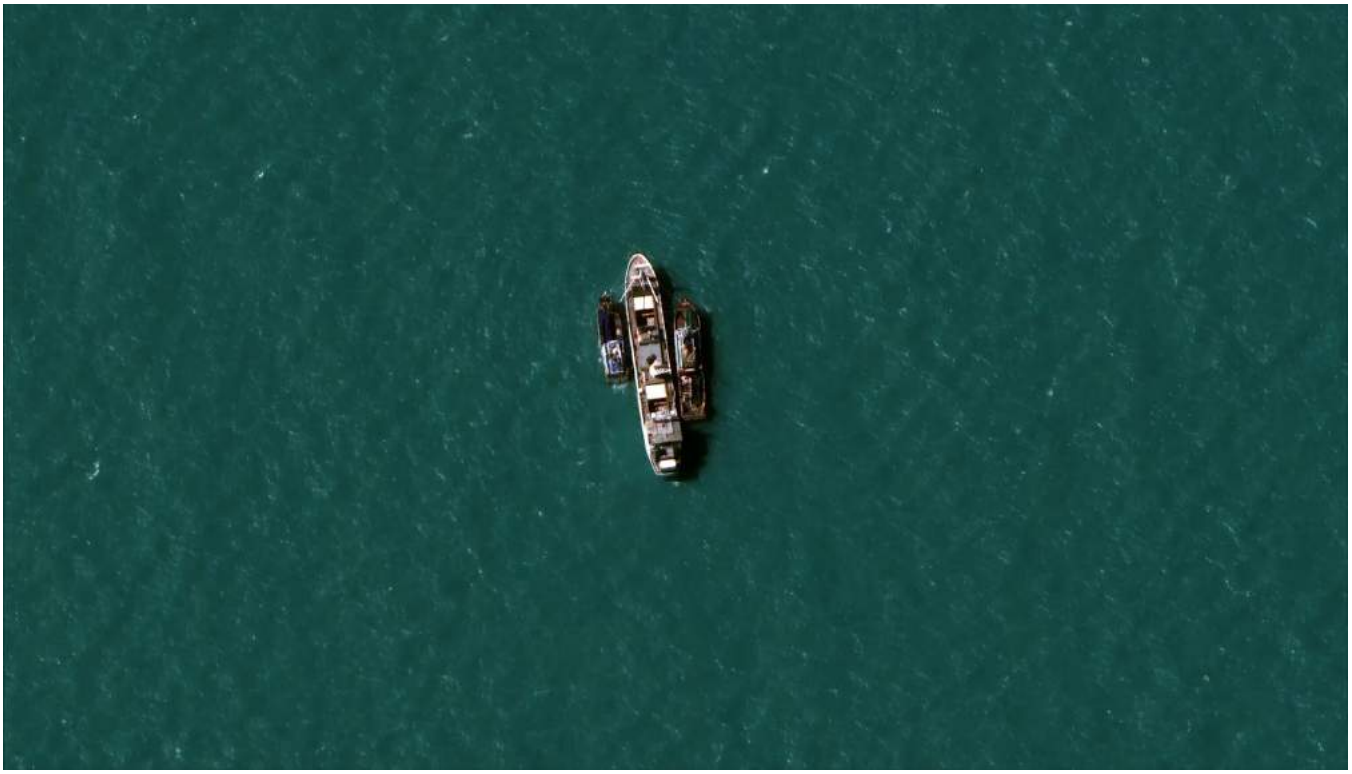
President Obama signed legislation in late February 2016 that bans American imports of fish caught by forced labor in Southeast Asia in an effort to better address lawlessness on the high

[77] Shrimp Sustainable Supply Chain Task Force Overview and Progress Update (May 2015). *Undercurrent News.*
[78] Holmes, Oliver, "EU Investigators to Decide on Thai Fishing Industry Ban over Slave Labour" The Guardian, 20 January 2016. http://www.theguardian.com/world/2016/jan/21/eu-investigators-to-decide-on-thai-fishing-industry-ban-over-slave-labour
[79] Holmes, O. Ibid.
[80] Modern Slavery Act of 2015, UK government website, http://www.legislation.gov.uk/ukpga/2015/30/contents/enacted

seas, improve fisherman workforce conditions, and protect marine resources and habitat. According to the White House press release: “The amendment closes a loophole in the Tariff Act of 1930, which bars products made by convict, forced or indentured labor. Until now, goods derived from slavery were allowed when American domestic production could not meet demand. Immigration and Customs Enforcement officials have said that keeping imports of Thai seafood from entering the U.S. has been a struggle because the demand for Thai seafood products is so high.”

It remains to be seen whether the pressure can be maintained to put teeth in the regulations, political will in the enforcement, and financial resources behind the needed research and implementation—especially if the spotlight of public outcry shifts again.

CONCLUSION: LOOKING FORWARD



Detail from WorldView-3 satellite image showing two fishing trawlers tied up to the refrigerated cargo vessel in the waters of Papua New Guinea on July 14, 2015. The cargo holds are open, suggesting that the ship is receiving catch from these trawlers implicated in slave labor. Credit: Digital Globe/AP

Under the best of circumstances, fishing the high seas is challenging, dangerous, and requires periods of extremely hard labor to bring aboard and process the catch. As fixed costs rise (insurance, fuel, vessel maintenance, etc.) variable costs (labor) take the hit in order to keep seafood products falsely inexpensive. "The race to the bottom in labor costs in an industry with such depleted resources is a graphic example of the decline in wildlife which often necessitates the increased use of cheap labour to maintain yields. Harvesters of numerous species of wildlife resort to acquiring trafficked adults and children to capture ever scarcer resources, as a way of minimizing production costs."[81] The Ocean Foundation archive on the role of slavery and other human rights abuses in the global plundering of the ocean goes back more than two decades.[82] Thus, we know what the problem is, we have to find the will to address it.

Each new iteration of the global market place in seafood, farmed or wild-caught, has increased the pressure to bring down costs to meet the twin global demands of low prices and high profits. Again and again the words **plunder** and **slavery** are intertwined in the reports—excess in what is taken of the ocean, excess in how it is taken, and excess in who is taking it

[81] Couper, Smith, and Ciceri, 2015. *Fishers and Plunderers: Theft Slavery and Fisheries at Sea*. p.3
[82] The Ocean Foundation, "Human Rights and the Ocean," https://www.oceanfdn.org/resources/human-rights-and-ocean. Published September 2015, updated December 2015.

out. However, it's not just about the Thais and their outlaw practices. As the Environmental Justice Foundation introduces its 2015 report on the Thai fishing industry: "[It] explores the interrelationship between overfishing, slavery and pirate fishing in Thailand to highlight how international demand for cheap seafood is perpetuating a brutal trade in vulnerable humans and the collapse of entire marine ecosystems." [83]

Mention slavery, and most people shudder and declare that they want their products to be slavery free. Or, at least they prefer to believe those companies, who assert their efforts to meet the best possible sourcing practices, are legitimate. Likewise, consumers prefer to believe that when feeding their pets, they are not perpetuating human misery. While everyone deserves to eat secure in the knowledge that what they (or their pets) are eating is healthy, sustainable, and produced by people who are paid a decent amount and work under decent conditions.

Sadly, in the case of the Southeast Asian fisheries and the Thai fishing industry in particular, the indiscriminate predation on both the ocean animals and humans is driven by Western demand. Shrimp consumers in wealthy nations need to take a hard look at how their appetite for this luxury item affects the people of other nations, and the health of the ocean upon which we all depend. The demand for low prices affects every level of the ocean—what we produce, what we catch, and how we use it. It affects every level of the communities from which it is derived—from the catch to your plate.

It is true that not all farmed shrimp exported to the U.S. or to Europe are tainted with slavery. However, shrimp aquaculture in almost every country is rife with human rights violations, the implication of human trafficking, child labor, and appalling working conditions. When one considers the local effects of habitat destruction, community displacement, feed sources, and so on, it is important to pursue improvements at every level of the industry in every country where it occurs. It is also important to consider the role of the consumer in perpetuating slavery.

> Thanks to Adam Smith's 'invisible hand' in a global market place; consumers mostly live happily with anopsia. We do not know, and do not want to know, for example that the fish in countless processed fast foods will have been caught by men and boys working in slave-like conditions, or that women working in sweatshops around Asia will have processed it.
>
> --Michael Field, The Catch, (p. 21)

It is a problem of transparency, accountability and traceability. If there is effective policing, the profitability of these illegal practices will decrease and create an incentive for "further targeting of criminals engaged in marine living resource crimes."[84] Supporting stronger roles for consumer nations, in demanding greater transparency and enforcement requires engaging with elected and appointed officials alike, and supporting the work of the organizations who monitor these issues day in and day out, advocating for the recognition that slaves should not be producing the food on our plates.

[83] EJF, Pirates and Slaves, p. 2
[84] U.N. Office of Drugs and Crimes, *Transnational Organized Crime in the Fishing Industry.* (Vienna, 2011). p. 137. https://www.unodc.org/documents/human-trafficking/Issue_Paper_-_TOC_in_the_Fishing_Industry.pdf

The vast majority of seafood consumed in the U.S. and Europe is imported. And, more than half of the global demand for seafood is met by aquaculture. The aquaculture industry must strive to be more sustainable in its food sources, labor practices, and transport mechanisms as it necessarily grows to meet the protein needs of a growing global population. And as such, we must recognize the primary factors of food (fishmeal sources), fuel, and labor, which determine the price of seafood, must also be considered and made more sustainable.

For the shrimp industry in Thailand and other parts of Asia, some of the savings from declining fuel prices has been offset by events such as the early mortality syndrome epidemic that ravaged shrimp crops in Asia in 2013.[85] In other words, the downward pressure on costs remains, and thus continues the temptation offered by the savings found in the disregard of human life and the future of our ocean. As mentioned earlier, there are human rights abuses at nearly every level of the global shrimp aquaculture industry (see Appendix III, A Short History of Shrimp Aquaculture). The companion air and water pollution, destruction of mangrove forests and coastal habitats, excessive fishing for feed, and disruption of the food base for the marine food web affects not only the displaced communities and subsistence and artisanal fishers along those coasts, but all of us, everywhere. Although the vast majority of harm does indeed occur in the producer countries, the consumer countries have a powerful role to play yet.

In the United States, shrimp is the most popular form of seafood—and of that, more than a quarter comes from Thailand, where the source of feed and the industry itself are unsustainable. Consumer nations have a choice to make regarding their role in promoting overfishing, habitat destruction and slavery. Clearly, consumers can demand action. Consumers can accept that the price they currently pay for shrimp is artificially low because of the excess extraction of human and natural capital.

In addition, effective policing will require local governments and international regulatory bodies to take responsibility for monitoring and enforcing the new laws and regulations. Fishing vessels and ports must be monitored to the extent that IUU fish cannot be mixed in with legally caught fish along the way, as almost all IUU fishing involves human trafficking. The global vessel registry is another tool that should be deployed as broadly as possible as it is a chance to hold fisherman accountable for the proper treatment of their workers, and for the effectiveness of the technology we have. The increasing appeal of formerly low-value fisheries in a time of declining fishery resources means that we have to consider how to increase aquaculture production in sustainable ways that meet the protein needs of a growing global population, and preserve the subsistence and artisanal fisheries upon which so many coastal communities depend.

The ocean is vast—but in some ways it is getting smaller. We are increasingly aware of how human activities have and continue to degrade ocean systems—upon which all life depends for oxygen, climate regulation, and food. Our tools to improve the human relationship with the ocean are also making it more accessible for plunder. We have proven that technology helps, but it needs more investment. Government and international agencies awareness helps and we need to work to implement our governance frameworks as they evolve. Public awareness

[85] "World's 100 Largest Seafood Companies 2015," *Undercurrent News*, 8 Oct 2015. https://www.undercurrentnews.com/report/undercurrent-news-worlds-100-largest-seafood-companies-2015/

has potential, and has celebrated huge success in the past, but we need to sustain strong campaigns to remind the public of their role in supporting ocean health, as well as, avoiding further degradation. Media reports have generated responses from industry and government groups—framing new recommendations such as a global seafood ethics standard, greater transparency, and closer scrutiny of labor practices.

The pressure to "vacuum the seas" using slave labor needs to be addressed through governance, transparency, and public engagement. One strategy is identifying drivers beyond profit that may be buried in our current system. Another is identifying the financial resources to enforce existing law and implement the new ones that arise as we learn more. A third is to identify ways to ensure that migrant workers are adequately protected, and even better, more opportunities for economic success are generated in villages of origin.

The ways in which we have proven the ocean is neither infinite nor unknowable are also paths to recognizing the human role in ocean health—our relationship to the ocean. They require political will to recognize the value of the ocean as a protein bank account, saving now what we may need later—and improving our ability to meet our true protein needs through diverse methods, from low tech systems in use for millennia to high tech recirculating agricultural systems. These paths require political will to acknowledge that the twin drivers of low cost and high profit harm the most vulnerable—on land and at sea.

> It ought to concern every person, because it is a debasement of our common humanity. It ought to concern every community, because it tears at our social fabric. It ought to concern every business, because it distorts markets. It ought to concern every nation, because it endangers public health and fuels violence and organized crime. I'm talking about the injustice, the outrage, of human trafficking, which must be called by its true name -- modern slavery."
>
> President Barack Obama
> U.S. Department of State Website 2015

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GLOSSARY OF TERMS

Anadromous fish[86] is born in fresh water, spends most of life in the sea and returns to fresh water to spawn. Salmon, smelt, shad, striped bass, and sturgeon are common examples.

Bonded Labor is one of a number of terms used by slave holders to avoid the words slavery or trafficking. Others include “debt bondage” and “indentured labor.”

Catadromous fish[87] lives in fresh water, enters salt water to spawn, and the offspring return to the stream of origin. Most eels are catadromous.

Convention (UN) The term is generally used for formal multilateral treaties with a broad number of parties. Conventions are normally open for participation by the international community as a whole, or by a large number of states. Usually the instruments negotiated under the auspices of an international organization are entitled conventions (e.g. Convention on Biological Diversity of 1992, United Nations Convention on the Law of the Sea of 1982, Vienna Convention on the Law of Treaties of 1969).[88]

Declaration (UN) A declaration can be a treaty in the proper sense. A significant example is the Joint Declaration between the United Kingdom and China on the Question of Hong Kong of 1984. Declarations are not always legally binding. The term is often deliberately chosen to indicate that the parties do not intend to create binding obligations but merely want to declare certain aspirations. An example is the 1992 Rio Declaration.[89]

Fishmeal is a commercial product made from fish and the bones and offal (organs) from processed fish. It is a brown powder or cake obtained by drying the fish or fish trimmings, often after cooking, and then grinding it. If it is a fatty fish, it is also pressed to extract most of the fish oil.[90]

Fish oil is derived from the tissues of oily fish. Fish oils contain the Omega-3 fatty acids that are known to reduce inflammation in the body, and have other health benefits. Fish oil is used as a component in aquaculture feed. More than 50 percent of the world's fish oil used in aquaculture feed is fed to farmed salmon.[91]

Forage Fish, also called prey fish or bait fish, are small pelagic fish which are preyed on by larger predators for food. Typical ocean forage fish feed near the base of the food chain on plankton, often by filter feeding.[92]

Flags of Convenience (FOCs): Choosing to register a ship in (and thus fly the flag of) a country with limited or lax oversight of fishing, shipping, and other practices.

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[86] NOAA Fish FAQ’s http://www.nefsc.noaa.gov/faq/fishfaq1a.html
[87] NOAA Fish FAQ’s http://www.nefsc.noaa.gov/faq/fishfaq1a.html
[88] U.N. Treaty Collection, Definition of terms.
https://treaties.un.org/Pages/overview.aspx?path=overview/definition/page1_en.xml
[89] Ibid.
[90] Wikipedia, “Fishmeal,” https://en.wikipedia.org/wiki/Fish_meal
[91] Wikipedia, “Fish oil,” https://en.wikipedia.org/wiki/Fish_oil
[92] Wikipedia, “Forage fish,” https://en.wikipedia.org/wiki/Forage_fish

Human Trafficking – Often referrred to as the "Modern Slavery Trade." According to Article 3 of the UN Trafficking in Persons Protocol as published by the UN Office on Drugs and Crime: Trafficking in Persons is the recruitment, transportation, transfer, harboring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. Exploitation shall include, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labor or services, slavery or practices similar to slavery, servitude or the removal of organs.[93]

IUU Fishing – Illegal, Unreported, and Unregulated Fishing is formally defined in the UN FAO International Plan of Action to Prevent, Deter, and Eliminate IUU. Fundamentally, it refers to all forms of illegal fishing, which includes: Excess or unpermitted take within a regulatory framework; Piracy of local fisheries by international or extra-national entities; and, Take by an unregistered vessel, among others.

Mother Ship is a term of art for a larger supply ship that receives fish catch from, and offloads supplies (and sometimes laborers) to fishing ships at sea—an activity called transhipment. Mother ships can commingle fish from both legal and illegal fishers, which can make traceability more challenging.

Pelagic fish[94] get their name from the area that they inhabit called the pelagic zone. The pelagic zone is the largest habitat on earth with a volume of 330 million cubic miles. Different species of pelagic fish are found throughout this zone. Numbers and distributions vary regionally and vertically, depending on availability of light, nutrients, dissolved oxygen, temperature, salinity, and pressure. Coastal pelagic fish inhabit sunlit waters up to about 655 feet deep, typically above the continental shelf. Examples of species include forage fish such as anchovies, sardines, shad, and menhaden and the predatory fish that feed on them. Oceanic pelagic fish typically inhabit waters below the continental shelf. Examples include larger fish such as swordfish, tuna, mackerel, and even sharks. Some species, especially oceanic fish, are highly migratory, covering hundreds if not thousands of miles each year.

Protocol (UN) The term "protocol" is used for agreements less formal than those entitled "treaty" or "convention."[95]

RFMO – Regional Fisheries Management Organization is a type of international cooperative body for fishing on the high seas. See Appendix I for examples. [96]

Shipbreaking: Shipbreaking or ship demolition is a type of ship disposal involving the breaking up of ships for a source of parts, which can be sold for re-use, or for the extraction of raw materials, chiefly scrap.[97]

[93] UN Office on Drugs and Crime, "Human Trafficking," https://www.unodc.org/unodc/en/human-trafficking/what-is-human-trafficking.html
[94] NOAA, " What are pelagic fish?" http://oceanservice.noaa.gov/facts/pelagic.html
[95] For more information: www.treaties.un.org.
[96] NOAA, "Fisheries beyond national boundaries," http://www.fpir.noaa.gov/IFD/ifd_index.html.

Slavery is defined as being forced to work without pay, under threat of violence, and without the ability to walk away.

State is a sovereign political entity in public international law.

Traceability in the case of fish and other seafood, is establishing a clear chain of custody from catch to plate—including any processing along the way. Traceability is not unique to the seafood trade—it is a longstanding hope of all consumer watchdog organizations hoping to ensure that products derive from law-abiding, human rights-respecting sources at every step of their journey to the consumer.

Transshipment in fisheries, is the practice of transferring catch at sea to larger ships—an activity that reduces accountability and challenges monitoring, and is generally perceived as an activity that must end if illegal fishing and human trafficking are to end.

UNCLOS – United Nations Convention on the Law of the Sea. See Appendix I.

[97] Wikipedia, “Shipbreaking,” https://en.wikipedia.org/wiki/Ship_breaking

APPENDIX I: RELEVANT INTERNATIONAL AGENCIES, AGREEMENTS & GOVERNANCE

Those pertaining to fishery management, labor practices, high seas governance, and related issues.

Agenda 21 and The United Nations Conference on Environment and Development (**UNCED**) Even before the Earth Summit was held in Rio de Janeiro in 1992, efforts were made to address the shrinking supply of wild seafood, the harm to the ocean from land-based sources, and ensure the protection of human rights.

IATTC A 1949 Convention created the **Inter-American Tropical Tuna Commission** to govern the catch of tuna and tuna-like species in international waters off of both the Atlantic and Pacific Coast. In 2003, a new convention designed to both recognize the intent of the 1949 framework and the need for even greater international cooperation to support sustainable management of these species.[98] The so-called Antigua convention reaffirms the need for stronger commitment to the well being of these pelagic species. There are 21 members, including the European Union. China, Japan, Korea, Taiwan, and Vanuatu are all the members from Asia; Indonesia is not a member but is considered a cooperating non-member.[99]

International Labour Organisation The ILO was founded in 1919 as part of the Treaty of Versailles' recognition that peace was only possible if it is based on social justice. The nearly 200 International Labour Organisation (ILO) Conventions include eight that form the core principles: on prohibition of forced labor, child labor, the right to organize in a trade union, and suffer no discrimination. All members of the ILO are bound by the core values, but additional conventions must be individually ratified.

The International Maritime Organization (IMO) Convention entered into force in 1958. The IMO is the United Nations specialized agency with responsibility for the safety and security of shipping and the prevention of marine pollution by ships. The IMO measures cover all aspects of international shipping – including ship design, construction, equipment, manning, operation and disposal – "to ensure that this vital sector for remains safe, environmentally sound, energy efficient and secure."[100]

The South Pacific Regional Fishery Management Organization (SPRFMO) was created in 2009. Australia, Chile and New Zealand intended to encourage cooperation in addressing a geographic gap in the international conservation and management framework.

Torremolinos Protocol In 1977, the first convention addressing the safety of fishing vessels was adopted following a conference in Torremolinos, Spain. **1993 Torremolinos Protocol** was adopted in April 1993, and will enter into force one year after 15 States with at least an aggregate fleet of 14,000 vessels of 24 meters in length and over, have ratified the Protocol. The Protocol updates, amends and absorbs the parent Convention, taking into account

[98] *The Antigua Convention,* http://www.iattc.org/PDFFiles2/Antigua_Convention_Jun_2003.pdf
[99] NOAA, International Fisheries Division U.S., "Inter-American Tropical Tuna Commission (IATTC)" http://www.fpir.noaa.gov/IFD/ifd_iattc.html
[100] IMO, "About the IMO," http://www.imo.org/en/About/Pages/Default.aspx

technological evolution in the intervening years and the need to take a pragmatic approach to encourage ratification of the instrument. The Protocol applies to fishing vessels of 24 meters in length and over including those vessels also processing their catch.

UN Convention on the Law of the Sea (UNCLOS) [101] is also called the Law of the Sea Convention or the Law of the Sea treaty. UNCLOS was the attempt to address the recognition that " the problems of ocean space are closely interrelated and need to be considered as a whole" and to define "the principles embodied in a 1970 resolution in which the General Assembly of the United Nations "solemnly declared *inter alia* that the area of the seabed and ocean floor and the subsoil thereof, beyond the limits of national jurisdiction, as well as its resources, are the common heritage of mankind, the exploration and exploitation of which shall be carried out for the benefit of mankind as a whole, irrespective of the geographical location of States." [102]

UN Fish Stocks Agreement The United Nations fish stocks agreement began to be implemented in 1996. It provides a framework for global fisheries management that "sets out principles for the conservation and management of [highly migratory] fish stocks and establishes that such management must be based on the precautionary approach and the best available scientific information."[103] RFMOs in theory must also incorporate this agreement's principles and the UNCLOS principles in making management decisions for fish stocks. Failure to apply precautionary principles to fisheries management is one reason that global stocks are so severely depleted.

UN High Seas Fisheries Stock Agreement (1995) also known as straddling fish stock agreement, are those developed under UNCLOS to ensure the long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks through effective implementation of the relevant provisions of the Convention. The Agreement generally applies to the conservation and management of straddling fish stocks and highly migratory fish stocks beyond areas under national jurisdiction. This Agreement established the RFMOs, among other provisions.[104]

Western and Central Pacific Fisheries Commission (WCPFC): The Commission is an RFMO, which was established under the Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPF Convention) which entered into force on 19 June 2004. The members include Australia, China, Canada, Cook Islands, European Union, Federated States of Micronesia, Fiji, France, Indonesia, Japan, Kiribati, Republic of Korea, Republic of Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Chinese Taipei, Tonga, Tuvalu,

[101] UN General Assembly Resolution profferred by Canada, Monaco et al November 2014, http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N14/659/53/PDF/N1465953.pdf?OpenElement

[102] For more information see: The UN Division for Ocean Affairs and the Law of the Sea, http://www.un.org/Depts/los/ and the text of the November 2014 reaffirmation of the intent and need for UNCLOS.

[103] "The United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (in force as from 11 December 2001)" Overview. http://www.un.org/Depts/los/convention_agreements/convention_overview_fish_stocks.htm

[104] "United Nations Conference On Straddling Fish Stocks And Highly Migratory Fish Stocks." Sixth session, New York, 24 July – 4 August 1995. http://www.un.org/Depts/los/convention_agreements/texts/fish_stocks_agreement/CONF164_37.htm

United States of America, and Vanuatu. The Convention applies to waters of the Pacific Ocean including areas around Hawaii, American Samoa, Guam, Commonwealth of the Northern Marianas Islands and U.S. Pacific remote island areas: Wake, Palmyra, Kingman, Jarvis, Howland, and Baker and therefore encompasses the operational area of significant U.S. purse seine, long line, and distant-water troll fisheries, as well as local HMS fisheries.[105]

South Pacific The South Pacific Regional Fishery Management Organization (SPRFMO) was created in 2009. Australia, Chile and New Zealand intended to encourage cooperation in addressing a geographic gap in the international conservation and management framework.

[105] Western and Central Pacific Commission, "Frequently Asked Questions," http://www.wcpfc.int/frequently-asked-questions-and-brochures

APPENDIX II: ORGANIZATIONS

A short list of some of the organizations working on Slavery, Illegal Fishing, and issues relevant to human rights and the seafood industry. In particular, we list those whose work helped inform and direct the research for this paper.

Anti-Slavery Australia grew out of a research focus on human trafficking at the UTS Community Law Centre from 2003 and continues to be part of the Faculty of Law at the University of Technology, Sydney. (http://www.antislavery.org.au)

Center for Migration Studies (CMS) is an educational institute/think tank devoted to the study of international migration, to the promotion of understanding between immigrants and receiving communities, and to public policies that safeguard the dignity and rights of migrants, refugees and newcomers. (Cmsny.org)

Environmental Justice Foundation is a UK-based non-profit organization working internationally to protect the environment and defend human rights. "EJF believes that environmental security is not just about quality of life, it is a basic human right." The organization has published multiple reports on the role of slavery and other human rights abuses in global fisheries (see Resources above). EJF is sitting on the Sustainable Shrimp Supply Chain Task Force. (www.ejfoundation.org)

Free the Slaves is a Washington, DC based organization, founded in 2000, to liberate slaves and change the conditions that allow slavery to persist, based on the premise that slavery thrives where the vulnerable are powerless. Free the Slaves is dedicated to educating the global public about the continuing existence of slavery and where it is worst. They have worked to promote opportunities to intervene with governments, international institutions, faith communities, businesses, and the public. Free the Slaves is now implementing a community-based strategy in selected countries, to demonstrate that their model works and is both scalable and replicable. They continue to advocate for stronger anti-slavery laws and ridding slavery from manufacturing supply chains and business practices. (www.freetheslaves.net)

Greenpeace is "an independent campaigning organization that uses peaceful protest and creative communication to expose global environmental problems and to promote solutions that are essential to a green and peaceful future." The organization's work on illegal, unregulated, and underreported fisheries has spanned the globe—from the high seas to the IMO. For example, Greenpeace has focused on ending illegal tuna fishing and the illegal activities that accompany it, including a consumer-petition campaign against *Chicken of the Sea* tuna, a brand owned by Thai Union. As of November 2015, more than 250,000 people had signed on to the campaign. (www.greenpeace.org)

The Migration Policy Institute is an independent, nonpartisan, nonprofit think tank dedicated to analysis of the movement of people worldwide. Founded in 2001 by Demetrios G. Papademetriou and Kathleen Newland, MPI grew out of the International Migration Policy Program at the Carnegie Endowment for International Peace. Headquartered in Washington, DC, MPI has offices in Manila and New York, with a presence in the United Kingdom. In 2011,

MPI established the Brussels-based Migration Policy Institute Europe, which builds upon the work that MPI has done for years in Europe. MPI provides analysis, development, and evaluation of migration and refugee policies at local, national, and international levels. (www.migrationpolicy.org)

Oceana is a Washington, DC-based ocean conservation organization. Oceana has been working with its partners, SkyTruth and Google, to improve monitoring and enforcement of MPA's and fishing zones through satellite imagery. (www.oceana.org)

The Ocean Foundation is a unique community foundation with a mission to support, strengthen, and promote those organizations dedicated to reversing the trend of destruction of ocean environments around the world. The Ocean Foundation has grantees, partners and projects on all the world's continents working to develop effective strategies to combat the multifaceted threats facing the ocean.

Sea Shepherd Conservation Society is an international non-profit, marine wildlife conservation organization. Their mission is to end the destruction of habitat and slaughter of wildlife in the world's oceans in order to conserve and protect ecosystems and species. Sea Shepherd uses innovative direct-action tactics to investigate, document, and take action when necessary to expose and confront illegal activities on the high seas. (www.seashepherd.org)

SkyTruth uses remote sensing and digital mapping to create stunning images that expose the landscape disruption and habitat degradation caused by mining, oil and gas drilling, deforestation, fishing and other human activities. (www.SkyTruth.org)

Verite is focused on ensuring that institutions and the private sector take responsibility for solving human rights problems where goods are made and crops are grown. "We take aim at serious problems: child labor, slavery, systemic discrimination against women, dangerous working conditions, and unpaid work." In 2015, Verite released a report called *The Cost of a Job: Human Trafficking and Modern-Day Slavery in the Global Economy.* Verite is sitting on the Vessel Watch Subgroup of the Shrimp Sustainable Supply Chain Task Force. (www.verite.org)

APPENDIX III: A SHORT HISTORY OF SHRIMP AQUACULTURE:

The culture of shrimp began in Japan in 1933 with the work of Japanese biologists lead by Dr. Motosaku Fujinaga, to study the artificial propagation and culture of the kuruma shrimp, *Penaeus japonicas.*[106] The first pilot commercial kuruma shrimp operation started in 1959. By the end of the 1960's, Japan was producing a few thousand metric tons of Kuruma shrimp for national consumption.

Meanwhile, in other parts of the world, research and development of viable shrimp farming methods was underway on a parallel track. Shrimp aquaculture in the Philippines evolved in conjunction with the centuries-old practice of farming milkfish (Chanos chanos Förskal) in brackish water fishponds using naturally occurring fry that came in with tidal waters and occasionally supplementing the natural food supply with rice bran. [107] The discovery of the effectiveness of milled feeds in boosting productivity helped fuel the expansion of intensive shrimp farming, in far more complex operations than the traditional co-farming with natural feeds, wash, and fry. Negros Occidental emerged as the center of the country's intensive aquaculture—with its supportive feed and processing operations.

Evolution in milkfish operations mirrored evolution in shrimp production—from dependence on natural foods to dependence on milled foods. According to the UN FAO overview of Philippine Aquaculture, "Sometime in the mid-1950s, intensive milkfish farming started in Negros Occidental, erstwhile center of the country's intensive prawn culture operations. The impetus was the continued setbacks suffered by the prawn growers due to diseases brought about by over-intensification. Many went back to milkfish farming. However having enjoyed the high value of prawns and having experienced the large volume of harvest in intensive prawn ponds, many were not content to go back to the fertilizer and natural food based milkfish culture system with their relatively low yield which also was very weather-dependent. With their existing infrastructure, which included huge pumps and pond aerators, it was not difficult for them to apply intensive culture techniques to milkfish. This proved to be a boon to the feed millers who were suffering a slump in sales in prawn feed. In order to utilize their existing capacities, most if not all of them diversified their product line to include fish feed. In fact the sudden popularity of milkfish feed may have been a 'technology-push' situation where the feed millers in their attempt to stay in business sold the idea of intensive milkfish culture to the losing prawn growers. Where previously milkfish farmers were content to merely use rice bran as a supplemental feed when the natural food collapses or is depleted, many now use commercial pellets."[108]

With banks pouring in money for shrimp production, capital was not a problem. Even as the Philippines went through a political upheaval that started in 1983 and climaxed in 1987 with disastrous effect on the economy, there was no stopping shrimp culture development. Even a series of coup d'états in the late 1980s failed to dampen the industry. It took an external factor - the long illness and subsequent demise of the Japanese emperor in 1989, to finally put a

[106]Stickney, R. and Granvil, T., "The History of Shrimp Farming," *Shrimp News International.* http://www.shrimpnews.com/FreeReportsFolder/HistoryFolder/HistoryWorldShrimpFarming/HistoryBookTreeceAndSticknew.html

[107] Fisheries Group, UN FAO, "Overview of Rural Aquaculture in the Philippines," http://www.fao.org/3/a-x6943e/x6943e06.htm

[108] UN FAO, "Overview of Philippine Aquaculture," http://www.fao.org/docrep/003/x6943e/x6943e06.htm.

damper on the burgeoning industry. The price collapsed and suddenly financial projections could not be met even if production targets could be attained. It was at this time, when due to political instability, bank-lending rates where at their highest, often reaching more than 25 percent per year. Many growers found themselves insolvent. The shrimp fever was over.

Soon after, during the early 1990s, the ill effects of pushing production to the limits using high stocking densities led to diseases, mainly luminous vibriosis (intestinal disease). Initially the diseases could be managed with the use of antibiotics. However with unmitigated use of wide spectrum antibiotics the disease bacteria developed resistance and no amount of antibiotics would work anymore. One intensive farm after another collapsed. Elsewhere many of the shrimp farms remained largely extensive. It was these farms that prevented the shrimp culture industry in the Philippines from total collapse as it did in Taiwan.

Before the 1980s, less than 1 percent of the world's shrimp was farm-raised. Aquaculture experts hadn't yet figured out how to breed shrimp in captivity; the only reliable way to obtain eggs was to harvest them from shrimp caught in the wild. Shrimp farmers also weren't sure how best to combat shrimp viruses, or how to adjust water salinity to maximize growth. Catching shrimp the old-fashioned way, meanwhile, was an expensive endeavor; the boats burn through huge amounts of diesel, and many of the most prized species can be caught only during particular seasons. As a result, unless one lived near a shrimping hotbed such as Louisiana's Gulf Coast, shrimp was a gastronomical luxury—the sort of thing served at places with tuxedoed waiters and valet parking.

That began to change during the Reagan years, as seafood technologists figured out how to hatch shrimp eggs under controlled conditions, then nurse them through the post-larvae stage. Viruses, the bane of shrimp aquaculture, were brought under control thanks to more sophisticated filtration and purification systems. Given the high market prices for shrimp, millions of acres of land—particularly mangrove forests—in Asia and Latin America were cleared to create shrimp ponds, where juvenile shrimp are released and grown to a salable size. [109]

The early Japanese fish farms fed the diatom *Skeletomema costatum,* whose mass culture was developed by Dr. Yoshiyuki Matsue at Tokyo University.[110] The next leap in growth and survival in mass culture of shrimp came later when Dr. Fujinaga fed *Artemia* nauplii to post larval shrimp, a protocol that greatly increased growth and survival.[111]

Much has been written about the devastating effects of shrimp farming on the world's mangrove forests, near shore waters, and the coastal communities who depend on them. From the Philippines to the shorelines of Southeast Asia, mangrove forests have been reduced to a third of their pre-World War 2 abundance. As Kennedy Warne wrote in his book, *Let them Eat Shrimp,* "By ceding control of mangroves to shrimp farmers, the people's own governments have stripped their livelihoods from them, sending them this message: Your work has no value and your interests don't count." In other words, their fundamental human

[109] Koerner, Brendan, "The Shrimp Factor," *Slate,* 13 January 2006. http://www.slate.com/articles/arts/number_1/2006/01/the_shrimp_factor.html
[110] Stickney, R. and Granvil, T., "The History of Shrimp Farming," *Shrimp News International.*
[111] Ibid.

rights have been overwhelmed by commerce—commerce that benefits individuals and communities far from these shores. The irony that mangroves themselves play a critical role in the life cycle of wild shrimp and dozens of other animals is lost. The legacy of abandoned ponds filled with antibiotic laden sludge and other toxins is for the community that remains as the shrimp operations.