

**The Intersection of Labor Abuses and Environmental Degradation in the Global Fishing Industry:**

**Extent and Potential Solutions**

Kyralai Duppel

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Mentor Professor Kate O'Neill

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## **Abstract**

The global fishing industry has grown to a scale that is reliant on damaging the environment and violating human rights using forced labor and slavery in order to meet seafood demand. Both of these issues have been separately addressed in policy at the international, national, and corporate levels. NGOs and the media have also contributed to bringing more attention to these subjects recently. However, the combination of these efforts has not made a great enough change to prevent human rights abuses or environmental degradation within the global fishing industry to a sufficient scale. Upon analysis of current efforts and solution routes at the international, national, and corporate levels the best mitigation strategies for both labor abuses and environmental degradation in the global fishing industry were identified. A treaty limiting subsidies allowing fishing on the high seas, the acceptance of the ILO 2007 Work in Fishing Convention, and the expansion of the Maritime Labour Convention to cover the fishing industry were found to be the most promising first step solutions as well as support for socially and environmentally ethical national fisheries management through ecosystem based management and improved enforcement of stricter environmental and labor laws. Acceptance of such legislation would allow existing human rights, labor, and environmental laws to be better enforced. Such international action would trickle down into national and regional legislation. Corporations are also recommended to improve due diligence practices and supply chain transparency. Ecosystem based fisheries management within national EEZ fisheries will allow ecosystem rebound, increasing food security while providing other local economic opportunities as well as preventing labor abuses due to the closer proximity to national laws and authorities.

## **Introduction**

### **1. What is the Problem?**

The global fishing industry relies on forced labor and environmental degradation. 80% of life on Earth resides in the ocean and is threatened by overexploitation and destructive fishing methods (Tabrizi, 2021). Forced labor has received significantly less attention than illegal, unregulated, and unreported (IUU) fishing despite their interconnectivity within the fishing industry. The majority of sustainability

standards in the fishing industry cover environmental sustainability and lack a social sustainability aspect. Thus, the welfare of workers, who are often migrant laborers in the fishing industry are unaccounted for (Teh, et al., 2019). It is estimated by the ILO that 16 million people were victims of forced labor in 2016 and 11% of those people were involved with agriculture, forestry, or fisheries (“Following Forced Labor...”). The Global Slavery Index reported that in 2018 that the 7 countries with the highest slavery risk generated 39% of global fisheries catch (McDonald, et al., 2021). Fishing is one of the most dangerous occupations based on fatality rates, ranging from 3.5 times above the national average in Canada, to 15 times above the national average in South Korea (Teh, et al., 2019). However, the fatality rates are expected to be much higher in developing countries where data is less available. Child labor is also prevalent in the global fishing industry. It has been suggested that children aged 5 to 17 are engaged in fishing in Vietnam, of whom all were involved in work that could be considered hazardous according to national legislation. Although slave labor is often associated with developing countries that have low governance capacity, abuses are not limited to such areas as reports of trafficking within the Irish trawling industry and implications of human trafficking as well as bonded labor within UK scallop fisheries have arisen. Furthermore, migrant workers have been trafficked into New Zealand to work as forced laborers on foreign vessels leased by New Zealand fishing companies even though they should have been subjected to New Zealand’s labor laws (Teh, et al., 2019). Although human rights language has become more common in policy texts and academic discords, they lack a precise understanding and application to fisheries. Therefore, they are confusing to enforce and integrate into the fishing industry, contributing to the perpetuation of human rights abuses at sea (Song and Soliman, 2019). Environmental regulations are more prominent and enforceable, however, in remote areas such as the high seas, they are often ignored. Environmental regulations have also been inadequate in curbing environmental damage due to the fishing industry and important fish stocks have greatly declined. Oftentimes, ships operating with forced labor are also fishing with environmentally damaging practices, therefore the mitigation of both issues lies in simultaneously preventing the other.

## 2. Previous Compelling Literature

The connection between environmental degradation and human rights abuses in the fishing industry have previously been explored by nonprofits, journalists, and academics. However, little effective action has been taken to counter it.

According to the Global Slavery Index, there are six factors associated with slavery in fishing:

- Fishing outside of an EEZ where there are fewer regulations;
- Dependence on distant water fishing;
- High vessel and fuel subsidies by the government;
- Low per capita GDP of the fishing country;
- Low average catch per fisher;
- Large scale unreported fishing.

Government subsidies and low average catch per fisher increase pressure to cut labor costs while distant water fishing. Low per capita GDP and unreported fishing decreases the capacity of the government to take action against injustices (Global Slavery Index, 2018). Of these 6 factors there are 2 main drivers: National fisheries policy and wealth, and institutional capacity. Policy either inadvertently supports the continuation of sea slavery or the government has no means to take action against it. The Global Slavery Index recommends an international platform that protects labor standards, recognition and response to sea slavery as a serious organized crime, improving traceability of fisheries product and labor, and addressing the link between subsidies, overcapacity, and labor abuses.

Sea slavery aboard vessels taking part in IUU fishing has been frequently documented. An example is of a group of Thai ships flagged to Djibouti operating with a Cambodian crew (Urbina, 2019). The vessels took advantage of Somalia's inability to enforce labor and environmental laws by fishing in their national waters. Workers were subject to 20 hour work days and lacked proper clothing for the cold weather. Corrupt Somali officials gained profits from the destructive IUU fishing that these ships carried out with abusive labor conditions, therefore there was no government intervention to stop the practices onboard which harmed both people and the environment. Although the Thai government charged the

owners of the vessels with illegal fishing and confiscated their catch, the ships continued illicit behavior by reflagging themselves to another country.

Another example of a case of IUU fishing aboard a vessel operating with forced labor is the HUA LI 8, a Chinese squid jigger. In 2016, the HUA LI 8 was found to be fishing illegally in Argentinian waters (“Following Forced Labor...”). The vessel fled local authorities but was eventually captured by the Indonesian navy. The vessel contained 102 tons of IUU caught squid and 29 crew members were trafficked Indonesians. Onboard, the crew often received death threats, were sleep deprived, subject to physical and mental abuse, lacked adequate food and medical treatment, and some had been murdered. The vessel was blacklisted from Argentina based on fishing and trade violations and well as slavery accusations. The owners were fined \$178,000 and the company was sanctioned by China.

Journalism has proved to be a compelling way to reach the public on the topic of labor abuses and environmental degradation at sea. An article by the Associated Press documenting enslaved laborers on fishing vessels, who were then abandoned in Indonesia resulted in the repatriation of abused men to their homes in Myanmar, Indonesia, and elsewhere. The piece won Pulitzer and Polk Prizes, highlighting its impact (Urbina, 2019). Ian Urbina has also been a prominent figure in journalism on the topic of sea slavery and the global fishing industry, documenting abuses, poor labor conditions, and environmental harm in his *Outlaw Ocean* series in the New York Times as well as in his best selling novel by the same name.

### **3. The Scope of this Thesis**

This thesis aims to provide a substantial background on the effects of the fishing industry on human rights and the environment in order to explain the magnitude of these issues together. Existing efforts towards the mitigation of these issues will then be explored and analyzed. Potential solutions will then be discussed and evaluated in order to determine the best course of action for a successful mitigation strategy for both human rights abuses and environmental degradation within the global fishing industry.

## **The Connection**

Human rights abuses at sea and environmental damage are starkly interconnected. One telling example that consumers can easily identify are the unreasonably low seafood prices in grocery stores. The seafood economy and demand for cheap seafood fuel slavery in the fishing industry. Although seafood stocks are depleting, global demand continues to rise, calling for more laborers and the need for lower costs as the effort per catch per fisherman increases (Urbina, 2019). Thailand is notorious for labor abuses and destructive fishing practices and the US is the largest consumer of Thai seafood (Urbina, 2015). Prices are kept down with forced labor and unsafe boats made necessary by fish population collapses caused by overfishing (Pauly and Duppe, 2021). Decreasing yields and profit in commercial fisheries pressures vessels to cut costs, ranging from illegal fishing, vessel upkeep, crew pay and wellbeing, and conditions onboard (Tickler, et al., 2018). As labor costs comprise about 30-50% of total fishing costs, wages are often withheld and labor laws are ignored. Therefore, captains rely on slave labor. Some long haulers fish over 100 miles from shore for up to a year, reducing the risks of punishment for forced labor due to isolation from authorities (Urbina, 2019). Although deckhands are taking part in illegal fishing themselves, they are not to blame for illicit practices. They often are unaware of where they are or that they are illegally fishing and are simply under the strict command of their captain. Not only has the demand for deckhands increased, but also the demand for captains. Inexperienced and inadequate Captains are thrust out to sea, resulting in decision making that endangers crew and the environment to meet demands of shipowners and the economy.

The fishing supply chain connects sea slavery to countries where modern slavery is relatively low. Seafood imported into the US has an average potential slavery risk of 3.1kg per ton which is 17 times the risk of seafood from domestic fisheries (Tickler, et al., 2018). The risk of potential slavery in the US' seafood supply chain increases 8.5 times due to imports. In the EU, the potential risk is slavery for imported seafood is 3.8kg per ton, which is 13 times higher than domestically sourced seafood. Imports increase the risk of slavery in seafood in the EU by 8.6 times. Enslaved workers are not only catching food for human consumption, but also for pet food, due to high demand from US companies (Urbina,

2015). The same boats participating in human rights abuses at sea are also often conducting destructive and unsustainable fishing methods. These boats are often untraceable as many fishing vessels are exempt from international regulations requiring tracking systems. Further impeding traceability are motherships, which take fish from distant water fishing vessels and mix all catch together, thereby rendering it impossible to know if fish was sustainable or legally caught. Motherships also keep the abused isolated from seeking help by allowing ships to stay at sea for longer. Clean and illicit fish are further mixed together in processing plants, making traceability even more difficult (McDowell, et al., 2015).

An example of a vessel carrying out human rights abuses and IUU fishing is the *Oyang 70*. The deckhands were migrant workers who were physically, mentally and sexually abused by supervisors (Urbina, 2019). The conditions on board were unsafe, unhygienic, cold, and punishments for small mistakes and slow work were beatings or the withholding of meals. There was no clean drinking water, running toilet water, and the ship was infested with roaches. The crew made an average of \$180 per month for working in these hard conditions and if they ate too slowly, their pay was cut. Furthermore, the *Oyang 70* consistently used destructive fishing methods and maritime practices including discharging used engine fuel into the sea, illegal fishing, and dumping older fish overboard to replace it with fresher, more valuable catch.

The COVID-19 pandemic has exacerbated the conditions that make IUU fishing and forced labor at sea so common and easy to get away with. During the pandemic, laborers have been forced to be at sea for even longer than usual, at times for up to 18 months, due to the inability to receive crew changes at ports. Crews are in danger of being at sea for over 2 years and the UN named the crew change issue a humanitarian crisis (Superyachts, 2021; DLA Piper, 2020)). An estimated 400,000 seafarers have been stuck at sea during the pandemic, oftentimes due to border and entry restrictions. This is creating more favorable conditions for forced labor. An example of this is an Indian crew with withheld wages who were stuck in UAE waters during the pandemic. Their ship was hijacked and taken to Iran. Although they were eventually saved, the crew members suffer from psychological trauma and still have not received

their wages. Their documents were lost in the UAE so the crew has fallen into debt, cannot get another job, and are likely suffering from indentured servitude (Leonida and Haines, 2021).

## **Background of the Fishing Industry**

### **1. The Rise of the Fishing Industry**

Fishing has been integral to human society for thousands of years and has expanded to keep pace with seafood demand in modern times. After the industrial revolution, fishing methods and gear rapidly improved and maximized catch (“History of Commercial...”). A study by Sea Around Us quantified the spatial expansion of global fisheries since 1950 (“Spatial Expansion of...”). By the late 1960s, innovations for distant water fishing emerged, such as ships with increased capacity and motherships used for transshipment (“History of Commercial...”). Industrial marine fisheries greatly expanded, especially from coastal waters in the North Atlantic and West Pacific to waters in the Southern Hemisphere and the high seas. By the 1970s, populations of some large pelagic fish harvested with purse seines had already collapsed due to overfishing (“History of Commercial...”). The exploitation of new fishing grounds made it possible for the continued growth of marine catches, however, catches have been diminishing since the 1980s, indicating that the sea is not an unlimited resource (Shao, 2009). Large fish stocks have decreased by 90% since 1950, therefore, fisheries have begun fishing down the food chain (Rees, 2019).

Technological advancements have allowed greater yields while fish stocks struggle. By 2015, about 94 million tons of fish were caught annually, more than the weight of the entire human population (Urbina, 2019). Modern advancements, such as Fishing Aggregate Devices (FADs), specifically used to catch tuna, have not only driven up target catch, but also bycatch such as juvenile tuna which are vital to keep the population alive. A 2014 study shows that the yellowfin tuna population near Palau and other Pacific islands had dropped by 38% after the introduction of FADs (Urbina, 2019). Catches rose by 700% in the last 50 years. As national fish stocks crashed, nations began sending vessels into foreign waters and to the high seas to maintain yields, creating more favorable conditions for sea slavery and labor abuses (Woody, 2021). Since the great expansion of fisheries, the catch per fisher has greatly decreased while the

effort per unit catch per fisher has greatly increased due to decreasing fish stocks, increasing the demand for large amounts of cheap labor, fueling forced labor and sea slavery.

## **2. Today's Massive Fishing Industry**

Industrial fishing has become the main source of wild caught seafood for people today, which has diminished the once abundant livelihoods of artisanal and local fishermen (Rees, 2019). Industrial fishing is one of the largest industries worldwide with many key international stakeholders. The global fishing industry is worth \$240 billion annually (Tickler, et al., 2018). Seafood is the world's most widely traded food commodity as 1 in 5 people worldwide depend on it as their primary source of protein (Tickler, et al., 2018; Rees, 2019). In 2018, the FAO estimated that fish provided 3.3 billion people with 20% of their average per capita intake of animal protein, 17% of total animal protein consumed, and 7% of total global protein consumed (FAO, 2020). About 33 million tonnes of seafood were traded annually between 2005 and 2014. Fish consumption is expected to grow by 18% from 2018 to 2030 and the fishing industry provides livelihoods for millions of people with over 56 million people working on fishing vessels globally (Urbina, 2019).



Fig. 1. Global Fishing Watch. (2022). Fishing Activity . Global Fishing Watch. map, Global Fishing Watch. Retrieved from <https://globalfishingwatch.org/map/fishing-activity?latitude=10.000059999999998&longitude=-90&zoom=1>.

The stability of the global fishing industry is at risk. Today, marine fisheries require double the effort of those in the 1950s to get the same yields. As catches decrease, subsidies increase to help ships keep up with global seafood demand (Tickler, et al., 2018). The global consumption of fish currently outpaces the natural production of fish and the capacity for fishing is 3 times stronger than necessary (Rees, 2019). According to WWF, continuing to fish at the current rate will result in the exhaustion of stock of all fish used as food by 2048. A complex supply chain makes monitoring and improving management within fisheries difficult. Fish laundering causes traceability of fish back to its original vessel very unlikely, making it impossible to know if a fish was caught legally or ethically (Urbina, 2019).

Up to 32% of wild caught fish imported to the US is estimated to be illegally caught. About 90% of fish species are fully exploited and 1/3 of commercial fish stocks are harvested at biologically unsustainable levels (Woody, 2021). China, Taiwan, Japan, Indonesia, Spain, and South Korea account for 77% of the global high seas fishing fleet and fleets from these nations have been known to be associated with labor abuses onboard, linking IUU fishing and labor abuses (Sala, et al., 2018).

As the fishing industry struggles with limited resources and increasing costs, illegal fishing has been shown to be prevalent. A model of the flow of illegally caught seafood into major consumer markets of the US and Japan discovered that illegally landed products probably make up 20-32% of the US' and 24-36% of Japan's wild imports (Tickler, et al., 2018). Illegal seafood produces about \$160 billion in annual sales and pirate fishing vessels account for over 20% of wild caught seafood imported to the US (Urbina, 2019). 1/5 fish are caught illegally and the global seafood black market is valued at over \$20 billion.

Making fishing violations more feasible, ships are able to turn off their transponders in order to hide their location and fish illegally and use forced labor without being caught. Fishing in foreign waters, often illegally and under the radar, is increasingly common as countries deplete their national resources (Urbina, 2019). Some fishermen also use the rationale of fish being a fluid resource to illegally fish in foreign waters, claiming that it's their country's fish that just swam across a border, thus they have a right to it (Urbina, 2019). The argument is, if fish cross borders, fishermen have the right to do so too. IUU fishing violations and labor abuses taint global seafood in efforts to maintain high yields and lower costs. Companies such as Kroger, Safeway, Albertsons, Fancy Feast, Meow Mix, Chicken of the Sea, and Walmart are supplied by seafood suppliers at risk of using slavery (McDowell, et al., 2015).

Huge government subsidies supporting offshore fishing allow the industry to persist despite the harmful effects on the environment and the frequent involvement of forced labor. Nations continue to pledge that they will curtail IUU fishing and overexploitation of the marine environment by cutting subsidies, but do not deliver upon their promises (Woody, 2021). Governments have actually increased subsidies and in 2018, \$22 billion was spent on harmful subsidies, comprising the majority of financial

support toward the global fishing industry. This is a 6% overall rise since 2009 and fuel subsidies to support distant water fishing accounted for 22% of total harmful subsidies. China, the owner of the world's largest overseas fishing fleet, increased harmful subsidies by 105% in the decade leading up to 2019, and provided \$7.2 billion in subsidies in 2018, comprising 21% of global financial support towards fisheries. About ½ of the fish caught in the high seas in 2014, landed in Chinese or Taiwanese vessels (Woody, 2021). Furthermore, beneficial subsidies, such as those promoting sustainable fisheries, fell by 73% in China over the past decade. China was not the only country contributing to harmful fishing. The EU distributed \$2 billion in harmful subsidies in 2018, comprising 11% of global fishing subsidies. Cutting subsidies would likely require nations to provide information on the types and values of subsidies to be assessed and to determine which are harmful and should be prohibited (United Nations, 2017). Although this information is already required to be reported, many nations fail to do so.

### **3. Profitability**

Despite the sheer size and range of industrial fishing, its revenues are not as impressive as would be expected. A study by Sala, et al., found that large scale industrial fishing on the high seas is only made profitable by government subsidies. By studying fishing vessels and operational support vessels, it was found that without subsidies and cheap labor, as much as 54% of high-seas fishing grounds would be unprofitable at the current fishing rate, including the majority of large fleets (Sala, et al., 2018). Deep sea bottom trawling, one of the most ecologically damaging fishing methods, only incurs profits due to subsidies. In 2014, the total cost of fishing in the high seas was \$6.2-8 billion, with uncertainty due to labor costs, and the total fisheries catch in that same year was valued with a profit of \$7.6 billion, showing an unprofitable or just barely profitable industry. Just China, Taiwan, Japan, and South Korea accounted for all global high seas fishing revenue. The study estimates that high seas fishing profit ranges from -\$364 million to \$1.4 billion, which is far less than the estimated \$4.2 billion in subsidies to keep such fisheries financially afloat. With subsidies, profits increased to \$3.8-5.6 billion. Japan is particularly unprofitable, with high seas fishing costs valued at 4 times that of profits. The most profitable high seas fishing industries are drifting longliners and purse seiners, targeting mainly large mobile, high-valued

fish, such as tuna and sharks. Besides these fisheries, all others are unprofitable or barely profitable. Without subsidies, squid jiggers would incur annual losses of up to \$345 million and deep sea bottom trawlers would incur annual losses of up to \$230 million. 64% of all bottom trawlers in FAO regions were unprofitable without subsidies and 32% of those were still unprofitable with subsidies. One anomaly is Indonesia, whose fleet characteristics of small vessels with small engines allowed their high seas fishing to remain profitable. For China and Taiwan, fishing became profitable in certain sites only after lowering labor costs by 30 and 53% respectively. It is suspected that countries continue to fish in seemingly unprofitable areas using unprofitable methods because their catch is actually higher than reported. IUU fishing and the price miscalculations of valuable seafood cause underestimations in revenue and profits. However, Sala et al. corrected for these margins of error. Even under the lowest possible costs of high seas fishing, subsidies are more than double the net economic benefits. In reality, the costs of high seas fishing is likely greater than the findings of Sala, et al. because capital investments were not taken into account. Without subsidies, IUU fishing, and poor labor practices, fishing on the high seas would be a dead industry.

### **Extent of Human Rights Abuses**

#### **1. Who are Abused Laborers?**

Laborers abused are generally referred to as sea slaves, debt bonded workers, and forced laborers. The ILO Convention 29 defines forced labor as “any work or service exacted from any person under threat of any penalty and for which the said person has not offered himself voluntarily” (Teh, et al., 2019). The terms “sea slaves” and “forced laborers” are often used interchangeably and can constitute a range of deckhands from those who have been kidnapped and brought onboard against their will, to those coerced on board, to those who were promised another job and then ended up on a ship, and to those who work extensive hours with withheld wages. Debt bonded workers are tricked into signing terms on contracts that they don’t understand, often due to language barriers, and are trafficked across borders to fishing vessels (Urbina, 2019). These abused laborers have been found to be men and young boys often from the Philippines, Laos, Thailand, Cambodia, Indonesia, Sierra Leone, Namibia, and Myanmar (Tickler, 2018;

Frazer and Lee 2021; Verité, 2022). Most accounts of abused laborers, however, concern south and southeast asian workers. Oftentimes, laborers do not speak the same language as their superiors. Superiors have been documented to be, but not limited to, Thai, Taiwanese, Chinese, and South Korean (Urbina, 2019). Fees are stacked upon deckhands during the recruitment process, many fake. Such fees, including currency variation, transfer fees, and recruitment fees, can comprise over 30% of earnings. Workers cannot breach these contracts without going into economic ruin as many give their most prized possessions such as property and valuable certificates as collateral for these contracts and some of their contracts contain a ‘desertion penalty’ (Urbina, 2019). Fleeing ships to return home also carries shame for workers as they would be returning without wages. Most are stuck working off the fees they paid to get their job and many are paid under the minimum wage (Teh, et al., 2019).



Fig. 2. Dean, A. (2015). *The crew on the Thai fishing boat included two dozen Cambodian boys, some as young as 15. ‘Sea Slaves’: The Human Misery That Feeds Pets and Livestock.* New York Times. Retrieved from <https://www.nytimes.com/2015/07/27/world/outlaw-ocean-thailand-fishing-sea-slaves-pets.html>.

A large portion of workers on fishing boats are Filipino. Filipinos make up about ¼ of merchant ship crews worldwide and, in 2016, over 400,000 Filipinos sought work as officers, deckhands, fishermen, cargo handlers, and cruise ship workers (Urbina, 2019). The Philippines has exported the most workers out of any country in the past decade and about 10% of the Filipino population is sent abroad for work due to the lack of domestic work opportunities. Once they leave the Philippines, these workers are no longer protected by their government and are often subject to abuse at sea. The Philippine embassy in Singapore reported to have received more requests for assistance related to men trafficked on fishing vessels than from women in the sex and nightlife industry, a sector that is high risk for human rights abuses (Urbina, 2019). Although the Philippines says that they are making efforts to prevent human trafficking by stopping men at airports who fit profiles for workers that will likely be trafficked, recruitment agencies have already told these men how to answer questions to be able to board their flights, defeating Filipino efforts (Urbina, 2019).

Migrant workers that end up in the fishing industry often have no other choice. A lack of opportunities in their home countries drives them to find work elsewhere and the cost of proper certification for less abusive work makes it difficult for them to obtain another job (Macdonald, et al., 2021). The South China Sea is home to the most prevalent sea slavery, particularly in Thai fishing fleets and Taiwanese tuna longliners (Urbina, 2015; Macdonald, et al., 2021). Thai fishing fleets face a shortage of about 50,000 seafaring workers annually. Most of these empty spaces are filled by migrant workers, often from Cambodia and Myanmar, driven from their home countries due to the lack of economic opportunity (Urbina, 2015). Getting work on a fishing vessel is an easy option for finding work and many men turn to it despite hearing tales of harsh conditions and treatment onboard.

## **2. What Abuse Do They Face?**

Abuse begins before setting out to sea through human trafficking and abusive recruitment practices. As defined by the ILO and Walk Free Foundation, modern slavery is “any situation of exploitation that a person cannot refuse or leave because of threats, violence, coercion, deception, and/or abuse of power” (Tickler, et al., 2018). By this definition, some men are modern slaves as soon as they

become involved with the fishing industry. Enslaved workers are trafficked across borders to be sold to vessels, often being kept in cages (McDowell, et al., 2015). At sea, men are isolated and unable to call for help. Deckhands often have their phones confiscated, limiting communication with the outside world and increasing isolation (Urbina, 2019). Furthermore, forced laborers and sea slaves are often unaware of the rights which they are entitled to and even if they are aware, they often lack the resources needed to assert their rights (Teh, et al., 2019). According to a study by Global Fishing Watch, hotspots for the operation of vessels at high risk of using forced labor spanned the globe. Suspicious longliners were identified frequently in the Western Indian ocean, off the coasts of West Africa and South Africa, and in the Central Atlantic (“Following Forced Labor...”). Trawlers seemed to be gathered in the North Atlantic, and western and southeastern South America. High risk squid jiggers were often found in the Northwest Pacific and Northern Indian ocean. What is known about abuses at sea are all estimates because labor issues at sea are difficult to quantify and are likely significantly underestimated due to the isolation of offshore fisheries.

According to Charles N. Dragonette from the US Office of Naval Intelligence, the violent crime rate on fishing vessels is estimated to be at least 20 times higher than that on tankers, cargo ships, or passenger vessels and no agency exists that tracks maritime violence (Urbina, 2019). The true extent of sea slavery and labor abuses at sea are unknown as there is no direct data, therefore accurate statistics are nonexistent. Everything is an informed estimate, such as those made by the Global Slavery Index. Sea slavery and trafficking are common in Thailand, Laos, Cambodia, and Myanmar. Thai fishermen work up to 18-20 hour shifts with reports of only 1 hour to rest per day. The worst cases of labor abuses on fishing vessels often take place aboard Taiwanese tuna longliners. Investigations into Thai, Taiwanese, and South Korean fisheries uncovered human trafficking, forced confinement, physical abuse, and murder (Tickler, et al., 2018). Common conditions can include extreme temperatures, inadequate clothing, vermin infestations, filthy and unsanitary living conditions, drugs to continue working, a lack of medical care, and beatings over miniscule mistakes (Urbina, 2015). Captive crew are sometimes left on ‘prison islands’ when a captain takes the ship to port for maintenance, ensuring that crew members don’t escape. On some

ships, sick are disposed of by being tossed overboard, defiant laborers are beheaded, and punishments include being isolated for extended periods of time in dank, dark, unhygienic fish holds (Urbina, 2015). Abuse is not limited to the physical. Some men have gone insane onboard while others fall into deep depression, throwing themselves overboard in some cases (McDowell, et al., 2015).

In a breakthrough piece of journalism by the Associated Press, slave labor in Benjina, Indonesia was documented. Slaves from Myanmar were brought to Benjina, where they were used as forced laborers and sold for around \$1000 each (McDowell, et al., 2015). Pusaka Benjina Resources, the company which occupies the harbor, owns over 90 trawlers, operated by these laborers. Seafood shipments from this area were traced to the US, Asia, and Europe. For many forced laborers, the misery didn't end even if they made it off of their fishing vessels. Some men had been stuck in Benjina, unable to return home and abandoned by their captains, for 20 years.

The complete disregard or access to adequate medical care is common aboard fishing vessels. In 2015, a Filipino worker on the Korean flagged SOJIN 101, was refused medical attention on land as the captain did not want to take the time and money to treat him (“Following Forced Labor...”). The fisherman was then accused of faking illness, which the captain reportedly often beat him for. The fisherman later died due to the heart conditions that he sought medical attention for and the captain reported the cause of death as a heart attack, minimizing his role in the fatality.

Human trafficking, forced labor, modern slavery, and human rights abuses are not just rumors circulated by word of mouth. The US has listed 40 countries as a source, destination, or transit country for human trafficking in fisheries (Tickler, et al., 2018). In a 2009 UN survey of about 50 Cambodian men and boys sold to the Thai fishing fleet, about 29 said that they had seen their captain or another officer kill a worker (Urbina, 2015). Interviews with migrant fishermen in Thailand found that 17% had experienced conditions describing modern slavery, however the true number is estimated to be higher (Tickler, et al., 2018). Despite many accounts on fishing vessels, the true extent of forced labor on fishing boats is unknown due to a lack of data and it remains poorly enforced against (McDonald, et al., 2021).

### **3. Why is Abuse Possible?**

Human rights abuses often occur on vessels under jurisdiction where the judicial system is corrupt, dysfunctional, and/or has political influences (Hammond, et al., 2020). A perpetual lack of enforcement, comprehensive regulation, and insufficient awareness, particularly on the high seas, allows it to continue. Surplus labor due to population growth in developing countries results in an overflow of migrant workers, desperate for any job, consequently ending up as forced labor on fishing vessels with little protections as illegal immigrants (Tickler, et al., 2018).

Ships are able to recruit sea slaves without any repercussions by outsourcing recruitment, logistics and payroll of migrant workers thereby receiving all profit while being removed from any liability (Urbina, 2019). Human trafficking for the fishing industry is a community activity. Police, on the other way, are often corrupt, and accept bribes for transnational trafficking (Urbina, 2019). Local people are informants to traffickers. Men are often offered different jobs, only to end up on a fishing vessel. Another tricky recruitment practice used is luring men into bars and brothels, inviting them to enjoy themselves and then charging them for what seemed to have been complimentary. The men are then forced to work off their debt on fishing vessels (Urbina and Duppel, 2021). Illegal manning agencies play a critical part in recruiting forced labor on fishing vessels. These agencies are poorly regulated, allow ship owners to deflect responsibility for unethical recruitment practices, and often begin the abuse on land. Furthermore, they help to keep the prices for fish in grocery stores low by assisting in cutting labor costs. Manning agencies are difficult to be brought to justice as they are often far from where workers are originally from and from where abuses at sea occur (Urbina, 2019). Manning agencies trap prospective workers into indentured servitude by first making it necessary for migrant workers to get to the location of the agency, charging them extra or made up fees, as well as revealing to workers that their pay will be less than previously said. Confusing language is used to trick workers into such fees and signing contracts, causing most fishermen to go into debt before even boarding. In Thailand, illegal workers are given false documents to work on fishing boats because vessels are unable to hire undocumented crew. If a worker

makes it off of a ship alive, some are forced to fly back to the manning agency at their own expense to collect their wages.

One particularly abusive agency based in Singapore, Step Up Marine, sexually abused men waiting for jobs at sea. Men felt obligated to comply with the abuse because their abusers decided who would be hired (Urbina, 2019). Step Up Marine was eventually charged for its abusive recruitment practices, however, as no extradition treaty between Singapore and the Philippines exists, the culprits were never brought to justice. Even when manning agencies are interrogated, which is not often, they ensure that answers to questions about how workers have agreed to working in such conditions with extremely low wages is possible, remain unanswerable. With a proclaimed purely administrative role, it is difficult to catch manning agencies for wrongdoing. Furthermore, governments prefer to look the other way when it comes to issues regarding both environmental degradation and human rights abuses at sea to allow fishing fleets to stay financially viable. Workers continue to go to these manning agencies because they are often impoverished and do not have the means to get proper certifications that would eliminate the need to work through such agencies (Urbina, 2019). Manning agencies are essential to the continuation of the supply of forced labor in the global fishing industry.

Social atmospheres have also played an important role in making sea slavery possible and necessary for the fishing industry. In Thailand, a country with some of the highest estimated rates of sea slavery, wages on land increased in the 1980s. Fewer Thai nationals continued to take offshore jobs in the fishing industry, and thus the industry became dependent on cheap, foreign, and ultimately forced labor. Nearshore Thai waters were also depleted by the mid 1960s and their Catch per Unit Effort (CPUE) fell by 86% at the time (Urbina, 2019). This pushed their fleets farther offshore to maintain higher catches and created the need for more cheap labor. Today, when a captain is short a deckhand, they simply kidnap someone before departure. Captains deflect individual blame by claiming that forced labor is common and necessary in the fishing industry due to Thai economic growth and high fuel costs for long haul vessels as fuel costs comprise 60% of long haul vessel profits. They also claim that they have to use violence in order to prevent mutiny by the crew.

The continuation of these practices are due to the overall weakness of protections for fishermen. Maritime laborers have historically received fewer protections and rights than terrestrial laborers, including fair and timely wages, freedom of assembly association, and safe and healthy working conditions (Teh, et al., 2019). Fishing crews rarely unionize therefore they have little to no political clout to fight for better treatment and are exempted from protections such as the Maritime Labour Convention (Urbina, 2019). Furthermore the power of companies and the fear instilled in abused fishermen keeps them from speaking out. Victims often do not come out against companies and testify because of bribes, ‘peace agreements’, and fear (Urbina, 2019). It is also extremely difficult for an abused, impoverished worker to be able to beat the fishing industry in a legal battle due to an imbalance of resources. Further complicating accountability is isolation at sea making it much easier to dispose of evidence and carry out human rights abuses. When arrests are made, lack of evidence often renders cases moot.

Driving this abuse is the demand for seafood. Thailand is known for labor abuses in its fishing industry, yet it is one of the top seafood suppliers for the US. (McDowell, et al., 2015). The US buys about 20% of Thailand’s seafood which costs about \$1.4 billion annually. Without an incentive to stop and increasing economic pressure, human rights abuses will remain integral to the fishing industry.

### **Current Efforts**

Although sea slavery and environmental degradation are prominent in the fishing industry worldwide, actions to prevent it have taken place at international, national, and corporate levels. Furthermore, NGOs and the media have played a pivotal role in raising awareness about these issues, moving policy forward to reduce these incidents, and taking actions to stop such atrocities. The following section will discuss such efforts beginning with a review of international laws, national laws and actions, corporate efforts, and finally the role of NGOs and the media. Then, potential solutions, derived from existing efforts will be explored, followed by an analysis of each solution and finally a set of recommendations for moving forward with less human rights abuses and environmental damage within the global fishing industry. Current efforts further discussed are shown in the table below.

<b>Scale</b>	<b>Body</b>	<b>Effort Title</b>
International	United Nations	United Nations Convention of the Law of the Sea (UNCLOS)
International	United Nations	Universal Declaration of Human Rights
International	United Nations	International Covenant on Civil and Political Rights (ICCPR)
International	United Nations	International Covenant on Economic, Social and Cultural Rights (ICESCR)
International	United Nations	Convention on Human Rights
International	International Labor Organization (ILO)	ILO Convention 29
International	United Nations	Migrant Smuggling Protocol
International	United Nations	“Protect, Respect, and Remedy” Framework
International	United Nations	Palermo Protocol
International	United Nations	Guiding Principles on Business and Human Rights
International	United Nations	International Bill of Human Rights
International	United Nations	International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU)
International	Food and Agriculture Organization (FAO)	Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication
International	United Nations	Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)
International	Food and Agriculture Organization (FAO)	Port State Measures Agreement
International	World Trade Organization (WTO)	Subsidy Reporting
International	International Labor Organization (ILO)	Work in Fishing Convention
National	European Union	Convention to Suppress the Slave Trade and Slavery

National	European Union	Requirement for Authorization by Vessel's Flag state and the non-EU country Concerned be Granted Before a Vessel can Fish Outside of European Waters
National	Thailand	Shelters for Trafficking Victims
National	Thailand	Registration Drive for Immigrants
National	Thailand	Strengthening of Environmental Laws
National	Thailand (Thai Ministry of Labor)	Investigations of Fishing Vessels
National	Indonesia (National Fisheries Agency)	Increase in Action Against IUU Fishing in National Waters
National	Palau	Protection of 80% of National Waters from Industrial Fishing
National	Germany	Act on Corporate Due Diligence in Supply Chains
National	United States	Illegal, Unreported, and Unregulated Fishing Enforcement Act
National	United States	Federal Ban on Importation of Goods Produced with Forced Labor
National	United States (Department of Justice)	Interagency Task Force on Forced Labor in International Waters
National	United States (Customs and Border Patrol)	Withhold Release Orders
National	United States (Department of Homeland Security)	Petitions Regarding Forced Labour or Child Labour in Seafood
National	United States (Department of Labor)	Sweat and Toil App
National	United States (State Department)	Annual Trafficking in Persons Report
National	New Zealand	Fisheries Amendment Act
National	Philippines	Decentralized Natural Resource Management System
National	United Kingdom	Modern Slavery Act
National	European Union	Commission on Sustainable Corporate Governance

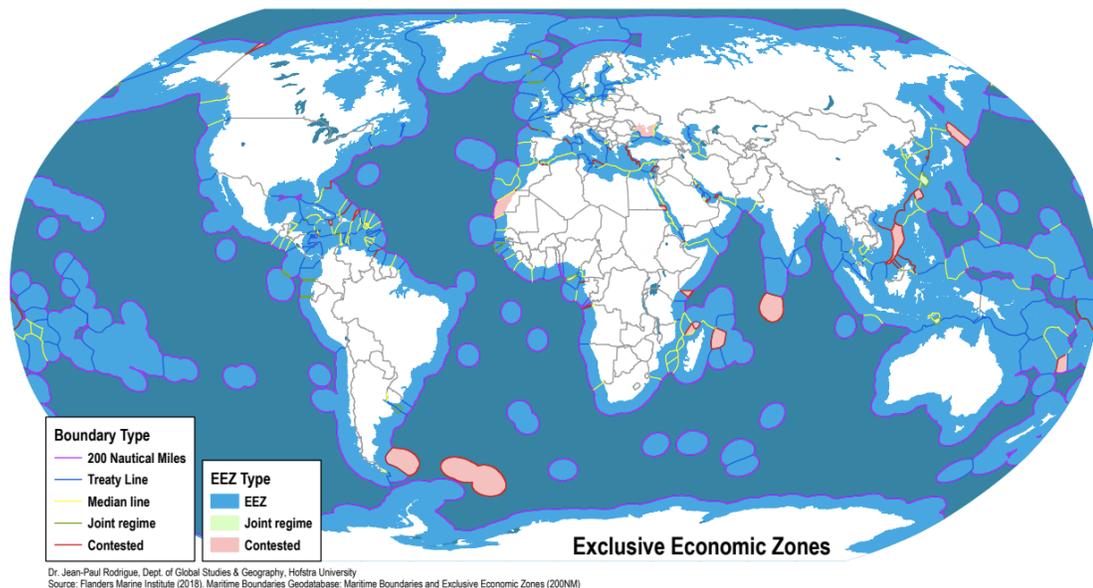
National	United States	Zhong Zheng v. Pingtan Marine Enterprise Ltd
Corporate	Santa Monica Seafood	Internal Supply Chain and Seafood Supplier Inspections
Corporate	Nestlé	New Policies and Requirements for Seafood Suppliers; Supply Chain Investigations and Audits
Corporate	NOAA	Dolphin Safe Tuna
Corporate	Marine Stewardship Council	Blue MSC Label Fish
NGO	Business and Human Rights Arbitration Working Group	The Hague Rules on Business and Human Rights Arbitration
NGO	Greenpeace	Impeding Trawlers with 3 ton Boulders on the Seafloor
NGO	Greenpeace	“Carting Away the Oceans” Report Cards
NGO	Sea Shepherd	Pursuit of the <i>Thunder</i>
NGO	Stella Maris Seafarers Center	Rescues Kidnapped Mariners and Sea Slaves
NGO	The Monterey Bay Aquarium, Liberty Asia, and Sustainable Fisheries Partnership	Seafood Slavery Risk Tool
NGO	Seafarers International Research Centre and ITF	Publically Available Ranking of Flag States Based on Labor Standards
NGO	Global Fishing Watch	Tracks Fishing Ships and Makes Information Public; Identifies Ships Suspected of Criminal Behavior
NGO	Human Rights at Sea	Produces reports of Abuse of Seafarers, Advocates for Justice for Seafarers, and Assists in Creating Change in the International Legal System; Geneva Convention on Human Rights at Sea; Advocating for an International Arbitration System
NGO	Coalition of NGOs	Paper Proposing Important Considerations for Import Controls in the EU
NGO	Environmental Justice Foundation	Assisting in Building Court Cases in Favor of Abused Seafarers
NGO	Environmental Practitioners,	Monterey Framework

	Human and Labor Rights Advocates, Academics, and Industry Representatives	
Media	Ali Tabrizi	Seaspiracy
Media	Associated Press	<i>AP Investigation: Slaves May Have Caught the Fish You Bought.</i>
Media	Ian Urbina	<i>The Outlaw Ocean</i>

**Existing International Efforts**

**1. UNCLOS**

Many international regulations that govern the maritime environment and people at sea currently exist. Traditionally, the international law of the sea is governed by 3 principles: the principle of freedom, the principle of sovereignty, and the principle of the common heritage of mankind (Tanaka, 2019). Although the principle of freedom historically references navigation to promote commerce and international trade, it has been applied to fishing which may contribute to the tragedy of the commons seen in fish stocks. The United Nations Convention of the Law of the Sea (UNCLOS) is the most prominent international maritime legislation and was established in 1983. It provides states with 200 nautical mile exclusive economic zones (EEZs) to exploit resources in, some of which are contested and therefore poorly managed (“History of Commercial...”).



**Fig. 3. Rodrigue, D. J.-P. (2018). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM). Flanders Marine Institute.**

UNCLOS, however, does not explicitly mention human rights or international human rights law (IHRL) nor is it influenced by it (Haines, 2021). Some Articles indicate the obligation to help others in certain circumstances. For example, Article 98 requires states to assist any person found at sea in danger of being lost and to rescue any ship in distress, including passengers and crew (Ndiaye, 2019). UNCLOS also obligates states to “promote the establishment, operation and maintenance of an adequate and effective search and rescue service regarding safety on and over the sea and, where circumstances so require, by way of mutual regional arrangements cooperate with neighboring States for this purpose”. Also touching upon labor rights and conditions, Article 94 (3) states that all flag states are responsible for the construction, equipment, and seaworthiness of ships, the manning of ships, labor conditions, training of crews, taking into account the applicable international jurisdictions, and maintenance of communication (Tanaka, 2019). This indicates that flag states must adhere to applicable international regulations, such as those of the ILO and IMO. Furthermore, according to Article 94(7), each state is required to investigate every marine casualty or incident of navigation on the high seas on one of their

ships which causes a loss of life or serious injury to the nationals of another state (Tanaka, 2019). Relating directly to slavery is Article 110(1), which posits that a warship may board a foreign vessel if the ship is engaged in slave trade. The closest direct mention to human rights is 'humanity at sea' which is referred to when addressing ships in distress, search and rescue, and the duty of coastal states to offer assistance. However, an indication of the protection of human rights is apparent in Article 99, which prohibits the transport of slaves. This implicates vessels operating with slave labor, causing the flag state to take accountability for violations as well as giving jurisdictional powers to the coastal state if in national waters (Ndiaye, 2019). Using this principle in implicating vessels, however, can be tricky if laborers have agreed to working in substandard conditions and signed a contract. The right of hot pursuit mentioned in Article 111 can be used as a means of enforcement against slavery tainted and environmentally damaging vessels. Coastal states have the right to chase a foreign vessel into the high seas for committing a crime in national waters against the laws of the coastal state, however, foreign vessels can seek refuge in the waters of 3rd party states, its own waters, or international waters (Tanaka, 2019)

Unlike human rights, environmental protections are explicitly discussed in UNCLOS. Under Article 62, the coastal state is obligated to create measures for the effective management of their fishery, including the licensing of the fishing industry, giving them the power to only grant licenses to sustainable vessels and punish those who do not comply with national regulations (Haines, 2021). However, UNCLOS limits the forms of punishment that can be imposed on vessels violating fisheries regulations. Article 73 identifies the interest of the coastal State to take necessary measures to ensure compliance with its laws and regulations and the interest of the flag State in securing prompt release of its vessels and their crews from detention. Flag states must be promptly informed of actions taken and penalties imposed and the seizing state is required to release the captured vessel and crew if a reasonable bond is posted (Petrig, 2021). Therefore, IUU fishing vessels can be controlled in an EEZ, however, the flag state is able to retrieve captured vessels, making continued illegal fishing and labor abuses possible, especially for countries, such as China, with great financial capacity. Imprisonment and any other types of corporal punishment are prohibited for fisheries law violations in EEZs unless there is an agreement between the

states involved (Ndiaye, 2019). Monetary punishments are only applicable when a violation of national or international standards of the prevention, reduction and control of pollution of the marine environment, committed by foreign vessels beyond the territorial sea are incurred. UNCLOS also addresses the conservation of marine living resources on the high seas. In Article 119(1), states are obligated to restore populations of harvested species to levels which can produce a maximum sustainable yield to determine catch limits and conservation measures on the high seas (Tanaka, 2019). Furthermore, scientific information relevant to the conservation of fish stocks on the high seas must be shared between nations. Article 118 further states that states must cooperate with each other to maintain and conserve living resources on the high seas and in doing so, they must also establish regional fisheries management organizations (Tanaka, 2019).

UNCLOS is an agreement between nations of the UN and does not account for individual grievances. The International Tribunal for the Law of the Sea is strictly state focused, prohibits individual petitions, and has continuously rejected “friend of the court” or neutral third party interventions concerning human rights (Teh, et al., 2019). The structure of UNCLOS as being state focused and leaving out concerns for individuals makes it difficult to be used to protect fishing boat laborers. Under UNCLOS, individuals are deprived of *Locus Standi*, or the right to be heard or appear before a court or authoritative body (Ndiaye, 2019). Without a human rights doctrine in UNCLOS, human rights standards at sea fall under the jurisdiction of states, allowing for loopholes such as flags of convenience. Although the UN Human Rights Council is meant to monitor human rights abuses at sea, it only covers national waters, leaving the high seas open for violations (Haines, 2021). As the jurisdiction of a country only extends throughout their EEZ and on ships flagged to them, jurisdictional confusion at the high seas makes it unclear as to which country an abused laborer should ask for help as well as creating friction between countries who both claim a certain area (Tickler, et al., 2018). Overlapping claims and national efforts to defend them have caused the failure of enforcement of competing human rights and environmental law.

Flags of convenience are a loophole in UNCLOS that have made human rights abuses and environmental degradation on the high seas prominent. Flags of convenience allow vessels to take advantage of lax regulations of certain flag states by registering to that country. Open registry states allow any ship to be flagged to them and are popular among ships who take part in environmentally destructive practices and labor abuse, as open registry states use loose regulations to generate greater national revenue through more ship flagging. By flagging themselves under open registry states, vessels may face fewer fees and taxes, more lenient environmental and human rights laws, and less accountability by evading stricter laws in their own country (Frazer and Lee, 2021). Vessels can flag under any state even if there is no genuine link between the two, meaning that there are no national, social or economic ties. However, registering a vessel under a flag that it has no relationship to is a violation of UNCLOS as Article 91 asserts that although every state may decide the terms of its flagging, “there must exist a genuine link between the [flag] State and the ship”. Some open registries make themselves even more attractive to vessels interested in IUU fishing and violating human rights by advertising anonymity and the ease of keeping identities of the vessel and owners hidden. Open registries often make crime at sea easy as illegal cargo can be mislabelled and abusive labor conditions are often ignored. States with closed registries, on the other hand, confirm the genuine link between vessel and state before granting a flag. There is public pressure to end open registries due to negative publicity surrounding IUU fishing. However, having a closed registry does not render a state innocent at sea as the conditions and practices on board remain subject to the flagging country’s laws which can still be too lenient to prevent human rights and environmental abuses. Albania, a closed registry state, was ranked the worst performing country regarding environmental and human rights at sea according to the 2020 blacklist of the Paris Memorandum of Understanding (Frazer and Lee, 2021).

## **2. International Human Rights Law**

IHRL is as applicable at sea as it is on land as it applies not only in the territories of signees but also wherever agents of signees act. Despite this, IHRL is difficult to enforce globally. When outside forces, such as international organizations, try to influence national human rights, states can see these

actions as a violation of their sovereignty (Ndiaye, 2019). International criminal courts are used only for internationally qualified crimes, such as genocide and war crimes, rather than abuses like violations of human rights on a fishing vessel. IHRL sets a base for inherent human rights that ensure an individual's dignity as a human being, from the State and from others, which all nations should adhere to, however, human rights policy, legal powers, and scope differ between nations and regions. The protections of different kinds of human rights range as well.

The Universal Declaration of Human Rights came into force on December 10, 1948 and covered personal rights, rights governing relations between individuals, spiritual rights, and material rights. These rights can be summarized by two categories: civil and political (CP) rights and economic, social, and cultural (ESC) rights (Ndiaye, 2019). A third category of rights are solidarity rights, which are less universally accepted than both CP and ESC rights. Solidarity rights include the right to a healthy environment and the right to the common heritage of mankind, but have been criticized for being too aspirational and lacking the purpose that traditional human rights contain. There are two legally binding international instruments that cover human rights: the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR) (Teh, et al., 2019). CP rights are more recognized internationally than ESC rights and are expected to be implemented without explicit direction from the state. Comparably, ESC rights need to be guided by the state as they include rights such as the right to work, the right to education, and the right to health (Ndiaye, 2019). Developing nations are not obliged to extend the economic rights granted under the ICESCR to non-nationals, thus migrant workers, who are most often the subject of trafficking and human rights abuses at sea, are not protected (Teh, et al., 2019).

Interpretation and enforcement of IHRL and human rights are applicable not only to industrial fisheries, but to small and artisanal fisheries as well. Industrial fisheries have had great negative impacts on small fisheries as they have depleted local stocks. However, IHRL has extended itself to help small fishermen. The Monterey Framework draws upon the UN FAO Guidelines for Small-Scale Fisheries (Teh, et al., 2019). Its three core pillars are to protect human rights and dignity, and respect access to

resources, particularly for indigenous and vulnerable populations, ensure equality and equitable opportunities to benefit from such access, and, improve food and livelihood security. The first pillar (to protect human rights and dignity, and respect access to resources) covers forced labor at sea. The second pillar (to ensure equality and equitable opportunities to benefit from such access) encompasses social justice and fairness. The third pillar (to improve food and livelihood security in fisheries) supports the aim of sustainable development goals to end poverty and world hunger by creating socio-economic stability and security in vulnerable communities. The Monterey Framework therefore, applies to industrial fishing due to the fact that industrial fishing has impinged upon the rights of small scale fishermen.

Slavery is internationally prohibited and laws against slavery are explicit in all major international and regional human rights instruments made by the UN. Article 4 of the 1950 European Convention on Human Rights highlights the extremity of this ban by stating that, unlike other entitlements granted to individuals, a state may not attempt to develop exceptions to this position. The Convention further pledges to include anti-trafficking in anti-slavery obligations (Teh, et al., 2019). Slavery is defined in the 1926 Convention to Suppress the Slave Trade and Slavery as “the status or condition of a person over whom any or all of the powers attaching to the right of ownership are exercised”. However, slavery globally does not include forced labor, trafficking, or other exploitative practices.

The 2000 Migrant Smuggling Protocol can directly relate to forced labor and sea slavery, as many of the abused are migrant workers on foreign ships. As defined by the protocol, migrant smuggling is constituted by “the procurement, in order to obtain, directly or indirectly, a financial or other benefit, of the illegal entry of a person into a state party of which the person is not a national or a permanent resident” (Tanaka, 2019). The obligations of this protocol are to criminalize the facilitation of smuggling and related activities, to protect the rights of migrants, and to prevent the smuggling of migrants. Any ship may report to the flag state of a foreign vessel if they suspect migrant smuggling on a ship. Under this protocol, sea slavery and forced labor at sea can often be condemned as migrant smuggling as many workers are undocumented immigrants who create a financial benefit for the fishing country through cutting labor costs.

IHRL also extends into business standards which apply to the seafood industry. The first pillar of the UN's "Protect, Respect, and Remedy" framework requires governments to prevent human rights abuses by third parties, such as businesses (Teh, et al., 2019). Directly governing business is the Palermo Protocol, which is the basis for the UN Guiding Principles on Business and Human Rights, instructing companies to use the International Bill of Human Rights to respect economic rights and to guide their human rights due diligence. The 2019 Hague Rules were implemented to create a remedy for people affected by human rights abuses in business in cases where traditional remedies would not apply (Villaggi and Guthrie, 2021). The rules recognize the individuality of cases when deciding how to handle them, potential influences that may affect one's capacity to defend themselves, and the need for witness protection. Although these IHRL agreements pertaining to business exist, it is difficult to enforce business and human rights obligations in domestic courts, especially regarding transnational issues because there is no precedent or guiding principles for resolution (Villaggi and Guthrie, 2021).

Despite human rights being globally applicable, they are not applied in the same way at sea. The UN Human Rights Council and treaty body system focuses much more on human rights compliance on land and norms in IHRL are not given site specific or categorical protocols (Petrig, 2021). The sea is also jurisdictionally confusing, as can be represented with the example of a 2019 sexual assault case. A rape accusation was filed against an Italian boy by a British girl on a Panamanian registered vessel on the high seas (Superyachts, 2021). The case was taken to court in Spain, and was dismissed because the court had no jurisdiction over the case as the event took place on the high seas on a Panamanian ship. The rapist ultimately walked free as the court had no right to prosecute, despite an obvious crime being committed. IHRL that is applicable to human rights at sea is extensive, however the complexity added by the maritime environment and the isolated nature of fishing, especially on the high seas makes it easy for IHRL to be violated.

### **3. Other International Efforts**

Other international agreements that are not directly UNCLOS or classified as IHRL have relevance to the global industrial fishing industry, the environment, and human rights. Pertaining to the

environment are the UN's International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU), the FAO's Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication, the Port State Measures Agreement, and subsidy reporting by the World Trade Organization (WTO). The UN's International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU) offers guidelines for sanctions against illicit fishing (Rees, 2019). The UN FAO introduced the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication in 2016 (Song and Soliman, 2019). These guidelines reflect human rights standards as a core component and pushes fisheries stakeholders to gain an understanding of human rights based approaches. However, guidelines are not binding and therefore states are not obligated to follow them. The Agreement on Port State Measures is the first binding international agreement that targets IUU fishing specifically by preventing vessels complicit in IUU fishing from landing catches and using ports (FAO, 2016). The Agreement applies to vessels entering a port that are different from their flag state. This deters vessels from initial engagement in IUU fishing as well as preventing illegal catches from entering markets. However, the Port State Measures are not always enforced or effective. Vessels identified by Global Fishing Watch at high risk of using forced labor and IUU fishing visited 79 ports in 2018, including those in 39 countries part of the Port State Measures agreement (“Following Forced Labor...”). The agreement must be better enforced and expanded upon, as ports are transfer points of IUU caught seafood and forced laborers. The WTO requires that countries submit fisheries subsidies data, however, in 2018, 70 countries failed to do so (Woody, 2021). Lack of data makes it difficult to quantify the extent of harm done to the marine environment by the fishing industry and hold nations accountable. Overall, the environmental efforts made by international bodies are weak or not enforced to an effective extent.

On the human rights and labor front, the main international body responsible for the wellbeing of fishermen is the International Labor Organization (ILO). In 2014, the ILO made it mandatory for shipowners to show proof of the ability to cover 4 months of crew wages as well as costs to repatriate them (Urbina, 2019). Shipowners were also required to prove ability to cover the cost of death and long

term disability caused by an occupational injury. However, fishing vessels are exempt from these protections. The most recent ILO Convention aimed to protect fishermen is the 2007 Work in Fishing Convention (Haines, 2021). The ILO Convention Work in Fishing Convention (C188), which entered into force in November, 2017, aims to improve the conditions on fishing vessels. It strives “to ensure that fishers have decent conditions of work on board fishing vessels with regard to minimum requirements for work on board; conditions of service; accommodation and food; occupational safety and health protection; and medical care and social security”. The convention provides a means of reporting vessels by allowing “any person with an interest in the safety of the vessel” to file a complaint against working conditions. If flag states ratified the Convention, provisions could be applied to vessels landing catch in their ports even if the vessel’s flag state has not ratified the Convention (“Following Forced Labor...”). The Convention took nine years to create and needed ten ratifications that allowed it to enter into force (Teh, et al., 2019). However, few states have accepted this Convention. Even if the Convention became widely accepted, it includes exceptions that “effectively exclude a significant number of fishing vessels from the scope”. Thus, impeding its potential effectiveness.

#### **4. Limitations**

The greatest limitation to international regulations and agreements is that they are opt-in, therefore, nations can choose to agree to them based on their cultural, political, and economic situations. Although many nations belong to relevant treaties, nations can choose which parts of them to adhere to and comply with. Different sectors of international laws also operate independently of each other, preventing collaboration between them. UNCLOS and IHRL ignore each other. According to Anna Petrig, Chair of International Law and Public Law at the University of Basel, IHRL is “seablind” and UNCLOS is “human rights blind”. The two bodies of international law do not influence each other and operate completely separately, despite the preamble of UNCLOS stating that ‘matters not regulated by this Convention continue to be governed by the rules and principles of general international law’ (Petrig, 2021). Thus supporting the use and adherence to IHRL at sea. Aside from lacking hard human rights provisions, UNCLOS also lacks a use of force provision, limiting enforcement powers of coastal states.

International suppression conventions have also limited enforcement actions on the basis of IHRL, however, many such conventions do not contain procedural safeguards, thus providing no obligation to arresting states to move fishing crews through legal proceedings or immigration systems (Petrig, 2021). The 2005 amendment to the IMO 1988 Convention on the Suppression of Unlawful Acts Against the Safety of Navigation requires that a ship boarding states take “due account of the need not to endanger the safety of life at sea, and to act in a manner that preserves the basic human dignity of all persons on board the ship and that complies with IHRL.” (Haines, 2021). Therefore, without a provision of force in UNCLOS or an IHRL defining the course of action in a specifically maritime confrontation, enforcement measures to protect against human rights abuses and environmental degradation on board a ship are at risk of violating IHRL.

IHRL is simply difficult to enforce. IHRL can be intercepted by factors such as totalitarian political regimes that benefit from a lack of human rights, economic underdevelopment and corrupt political systems that limit ESC rights, differences of interpretations of IHRL, and the inaction of outside bodies, such as international organizations and other nations (Ndiaye, 2019). Furthermore, certain states do not believe that IHRL applies to individuals beyond the State’s territory, such as on the high seas or in another nation’s EEZ. This belief results in human rights violations in such areas not being subject to appropriate preventative laws and enforcement. Due to these factors, obligations of IHRL are difficult to enforce across all states.

On the high seas, protecting against human rights abuses and environmentally harmful practices are made extremely difficult. Investigations can be carried out on the high seas, but investigators can only board a ship if they first find evidence of environmental violations, then receive the permission of the captain to board (Urbina, 2019). Investigators cannot prosecute outside of international waters, making investigations at the high seas useless, as captains can get rid of evidence before returning to national waters.

International agreements are poorly enforced, fail to be strict, and do not operate in a comprehensive manner. Therefore they have not fully protected fisheries laborers from human rights

abuses at sea nor have they protected the marine environment from harmful fishing practices or practices associated with fishing.

## **Existing National Efforts**

### **1. National Fisheries Law**

As stated in the “Existing International Efforts” section above, states are mostly responsible for their own specific human rights and environmental laws, as well as their enforcement. Most nations today manage fisheries by focusing on the replenishment of a species of interest using population dynamics, food web modeling, and maximum sustainable yields (Thresh, et al., 2015). Although there are established MPAs, only about 5% of the ocean falls into this category compared to the recommended 30% by researchers (Thresh, et al., 2015). Most of those MPAs still allow fishing, therefore even fewer areas in the ocean are truly protected against fishing (Tabrizi, 2021). Traditional economic goals are at the forefront of fisheries management, therefore policies that maximizes yields are favored (Rees, 2019). Poorly managed fisheries and inadequate fishing policy have resulted in excess fishing capacity, leading to overfishing (“FISHERIES IMPACT ON...”).

Certain nations have made exceptional efforts to combat IUU fishing in their national waters and aboard ships flagged to them. Entering into force in 2017, the European Union created an agreement applying to all European vessels fishing outside of European waters as well as foreign vessels fishing in European waters (Bagnardi and Scavuzzo, 2017). The agreement, meant to combat IUU fishing, requires that authorization by the vessel’s flag state and the non-EU country concerned be granted before a vessel can fish outside of European waters.

Asian countries, in which IUU fishing and human rights abuses have been very prevalent, have also taken significant actions towards safer fisheries. Thailand has attempted efforts to assist sea slaves by creating shelters for trafficking victims and creating a registration drive for immigrants in order to give undocumented workers identity cards (Urbina, 2019). Thailand has also made stricter environmental laws. However, these actions have not been effective enough. When Thailand imposed stricter regulations on overseas fleets, vessels simply reflagged themselves to another nation with laxer laws. The Thai

Ministry of Labor conducts investigations of fishing vessels however, throughout 50,000 inspections of fishing crews in 2016, the inspecting body found no violations of laws regarding conditions, hours, or treatment. Comparing the ILO interviews conducted with the same types of workers and during the same period, it was found that about half of the workers experienced illegal wage deductions, the majority could not remember signing a contract, and about 16% had identification documents taken by employers to force them to stay on boats. Environmentally speaking, Indonesia has good fisheries management, however human and labor rights are largely overlooked with a lack of protections and inspections. Minister Pudjiastuti of the National Fisheries Agency led radical changes to crackdown on illegal fishing. Under her leadership, Indonesia will burn or blow up unauthorized foreign vessels fishing in Indonesian waters. This extreme policy is due to the abundance of illegal fishing vessels in Indonesian waters previously (Urbina, 2019). Hundreds of boats are captured each year and thousands of men are arrested, however, after being arrested and taken from boats, it is difficult for the Indonesian government to handle fishermen. Although this policy is strong and effective, it is hard to carry out in disputed waters. An extreme limitation of its policies is that the wellbeing of deckhands are disregarded as these regulations have a purely environmental motive. Many deckhands are left in legal limbo after being apprehended and wait in detention facilities for years, often forgotten. Many are Vietnamese or Cambodian, whose native governments do not aid in the processes of bringing their nationals home. These men suffer from separation from their families while their fishing licenses expire and their boats rot, becoming useless. Palau also attempted to protect its marine stocks by protecting 80% of its national waters from industrial fishing, however, for protections to truly be effective, more surrounding countries need to put regulations in place (Urbina, 2019). Fish are a fluid resource and protection from one nation cannot properly sustain their populations.

## **2. Due Diligence**

As protecting human rights and the environment have become a center of attention in national and international policy, more due diligence laws have been established in recent years. A model law in Germany has recently been crafted. As part of Germany's National Action Plan for the Implementation of

the United Nations Guiding Principles of Business and Human Rights, the country has enacted the Act on Corporate Due Diligence in Supply Chains (Ozgun and Anacli, 2021). Entering into force on January 1, 2023, the act aims to prevent human rights abuses by direct and indirect suppliers to German companies and applies to companies with over 3,000 employees. Beginning in 2024, companies with over 1,000 employees will be subjected to this law. Companies are obligated to respect human rights throughout their entire supply chain, set up complaint mechanisms, regularly report on due diligence activities, assess human rights risks and take preventative and corrective measures accordingly, and comply with environmental due diligence.

The German law will apply to all companies that have their main office in Germany, as well as companies with domestic branch offices in Germany, and will cover employees abroad (RP Legal & Tax, 2021). Companies will be held accountable for human rights violations in their supply chain with monetary sanctions, unless the enterprise is able to prove that it has acted accordingly with due diligence obligations and had made efforts to prevent such violations. Furthermore, the act introduces the ability of any violated person to sue as well as giving companies the power to inspect, summon people, request and examine documentation. Companies that have been fined will be excluded from the award of public contracts until they can prove that they have cleared themselves of violations (RP Legal & Tax, 2021). However, the tendency of outsourcing auditing services creates risk in transparency of reporting. For example, manning agencies used to lure fisherman who end up as forced laborers are often used to cover up human rights abuses.

As this law comes into effect, companies can comply by including human rights statutes in contracts, policy, and planning, conduct human rights impact assessments, include human rights as well as environmental due diligence in company policy and supplier risk management, include training and communication for human rights & environmental compliance awareness within the company and suppliers, maintain reporting programs, and continually assess risks as well as manage them (Ozgun and Anacli, 2021). If companies fail to comply with the law, they will be punished with sanctions. For yearly global turnover of over EUR 400 million, up to 2% can be sanctioned. Furthermore, violating obligations

can result in exclusion from public tender procedures. Other nations, such as France and Norway, already have similar due diligence laws (Crockett and Matthew, 2021). Such laws can continue to influence more nations in supporting human rights and environmental protection within their businesses.

### **3. Sanctions and Investigations**

Sanctions and investigations into the practices of other countries can have major effects on the practices used to generate exports and imports. There are many examples of the US attempting to reduce human rights and environmental violations through this route. The US has passed the Illegal, Unreported, and Unregulated Fishing Enforcement Act in 2017 which is supported by a risk-based traceability system called the Seafood Monitoring Program thus combating IUU caught fish from being imported due to better recordkeeping (Teh, et al., 2019). US federal law also prohibits goods produced with forced labor to be imported to the country. In October 2018, an Interagency Task Force on Forced Labor in International Waters was established by the Department of Justice due to federal “concerns of labor that may have been subject to human trafficking to harvest fish in international waters”, which may support the creation of regulations for seafood companies. The US Customs and Border Patrol Agency have increasingly issued Withhold Release Orders to detain shipments of products suspected to be produced with forced labor (Eastwood, et. al., 2021). Furthermore, the US Department of Homeland Security accepts any petition regarding forced labour or child labour in seafood and has the power to conduct an investigation into the case (Teh, et al., 2019). The US Department of Labor also created a mobile app called *Sweat and Toil* listing goods made with forced labor and where those goods were produced.

Countries notorious for human rights abuses and IUU fishing do not go unnoticed. Due to suspicions of IUU fishing by South Korean fleets, the US sought environmental consultation with South Korea under the Environment Chapter of the US-Korea free trade agreement (Baker McKenzie, 2019). The US asserted that Korea had failed to sufficiently deter vessels from IUU fishing and fishing that impedes conservation measures of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) but not issuing adequate sanctions. Thailand has also come under US suspicion and has been blacklisted by the US state department or failing to adequately mitigate human trafficking.

However, there are no additional sanctions against the nation and Americans still eat a significant amount of Thai seafood (McDowell, et al., 2015). As a large consumer of international seafood, the US should put greater pressure on foreign suppliers to foster better fishing practices with stricter sanction. However it is still difficult for the US to take real action against foreign labor or environmental abuses due to the threat of disrupting international trade and seeming hypocritical due to its own shortcomings in these areas (Urbina, 2019).

New Zealand has been a model in cracking down on human rights abuses discovered on fishing vessels in its national waters. After New Zealand was cited by the US State Department in the 2012 annual Trafficking in Persons Report, the nation passed the Fisheries Amendment Act, expelling all foreign vessels from its waters (Urbina, 2019). The Fisheries Amendment Act, which entered into force on May 1, 2016, required vessels to leave New Zealand's waters within 2 years or become flagged by New Zealand, thus being subject to strict labor and environmental laws (Teh, et al., 2019). The law made personal bank accounts for crew necessary, required observers on foreign vessels, and required wage audits.

Other regions such as the Philippines, the UK and the EU have taken notable actions regarding sanctions and investigations to prevent human rights abuses and environmental degradation. In the Philippines, social injustices in the fishing industry were responded to by creating a decentralized natural resource management system, in which local fishing communities are given powers in co-management agreements (Teh, et al., 2019). The UK enacted the Modern Slavery Act in 2015 and thereby strengthened law enforcement surrounding modern slavery, including in global fisheries. The EU Commission on Sustainable Corporate Governance highlights the obligations of businesses to respect human rights and environmental due diligence (Eastwood, et. al., 2021).

Investigations implicating a company in national fisheries and human rights law violations can result in domestic court cases. Although cases against fishing companies often fail, one success story is *Zhong Zheng v. Pingtan Marine Enterprise Ltd*, which was a class action lawsuit in the US against a Chinese fishing company incorporated in the Cayman Islands (Joh, 2017). Pingtan Marine Enterprise had

falsely stated that it was fully licensed to fish in Indonesian, Indian, Western and Central Pacific waters of the high seas. Zhong Zheng argued that this false statement was used to hide illegal fishing, as Pingtan is specifically banned from Indonesia. The Indonesian Armed Forces had raided Pingtan's fishing headquarters and implicated the company in crimes including human trafficking, forced labor, illegal fishing, forgery, and bribing corrupt officials. This led the Indonesian supreme court to describe Pingtan as operating gruesome 'torture ships', connecting the company with modern slavery. Due to the publicity of these accusations, Pingtan's stock price supposedly dropped by 28%. Despite the international intersection of US securities law, a Chinese corporate defendant, the Indonesian government, and a Brooklyn venue, this case proceeded in a rare phenomenon.

#### **4. Limitations**

Despite great efforts made by nations to combat human rights abuses and poor environmental practices, not all countries have the resources to enforce against them. For example, when a ship taking part in IUU fishing is seized, the seizing country is responsible for the cost of feeding, housing, and flying a crew home. Countries, such as Palau, do not have means for aggressive policy against illegal fishing, like that of Indonesia (Urbina, 2019). Other countries, such as China, are too strong, and take advantage of their capacity to fish illegally in foreign waters without sufficient consequences.

International laws that promote adherence to IHRL can also impede enforcement of national laws to prevent human rights abuses and environmental degradation. IHRL can be limiting when nations attempt to enforce their laws at sea as Article 2 of the UN Code of Conduct for Law Enforcement Officials states that, while performing their duties, law enforcement officials must "respect and protect human dignity and maintain and uphold the human rights of all persons" (Petrig, 2021). Therefore national law enforcement in EEZs acting in accordance with IHRL can be difficult due to the necessary use of force and further actions when seizing a ship. Monitoring risks can go against the right to privacy, vessel destruction can violate the right to property at stake, accessing a ship risks violating the rights to life and physical integrity, and during interrogation and arrest, the right to liberty and prohibition of refoulement may be violated.

Investigations by governments do not come without perilous obstacles. For example, when a US ambassador was investigating claims of human rights abuses within the Sajo Oyang corporation, the owner of the Oyang 70, Sajo Oyang hired a private investigator to trail the ambassador (Urbina, 2019). Further deterring nations from properly mitigating forced labor at sea is the cost. Nations would prefer to spend this money on issues on land (Haines and Duppel, 2021). Issues on land are easier to access and more visible, therefore putting them, rather than offshore issues, at the forefront of policy agendas.

### **Existing Corporate Efforts**

#### **1. Due Diligence, Internal Investigations, and Transparent Supply Chains**

There is increasing international pressure on corporations to pursue human rights due diligence as companies are being held accountable by the public for discovered violations in their supply chains (RP Legal & Tax, 2021). Corporations, therefore, often develop and publish human rights policies. They are also often subject to soft law obligations to respect human rights, which can be policies, codes of conduct, or voluntary guidelines (Villaggi and Guthrie, 2021). Respecting such soft law statutes are favorable for companies by creating a better public image. However, hard law also influences corporate human rights policy such as provisions in the supply chain and domestic laws.

Many companies deflect blame for sea slavery by claiming that they have no idea that sea slavery is in their supply chain (McDowell, et al., 2015). However, proper investigation and company policy can make corporations less ignorant about internal abuse. Common efforts by food establishments attempting to eliminate sea slavery and poor environmental practices from their supply chain are using consulting and nonprofit organizations to conduct supply chain audits and sustainability consulting (Urbina, 2019). Some companies, like Santa Monica Seafood, take greater steps in increasing transparency in their supply chain. The seafood importer, which supplies restaurants and markets with product as well as operating its own storefront, has made efforts to improve international fisheries. The company sends representatives to vendors worldwide to inspect them (McDowell, et al., 2015).

Companies are also prompted with greater action to improve supply chain practices upon the discovery of violations. For example, Nestlé admitted to the discovery of forced labor in their seafood

supply chain from Thailand and consequently created new policies and requirements for their suppliers (Associated Press, 2015). The company had found that impoverished workers from Myanmar and Cambodia had been lured into sea slavery within their supply chain. Therefore, Nestlé conducted a study interviewing over 100 people, including 80 migrant workers, as well as visiting ports and docked boats in Thailand to investigate and prevent further human rights abuses.

Companies are influenced by the work of national governments and international organizations. Thailand, for example, has been scrutinized by the US State Department's anti-trafficking office, prompting seafood buyers and sellers to conduct investigations of sea slavery in their supply chains (Urbina, 2019). More corporations are adopting the UN's "Protect, Respect, and Remedy" framework due to pressure from investors and consumers towards corporate social responsibility (Teh, et al., 2019). It can be beneficial for companies to go beyond preventing human rights abuses to advocating against them with real action to build a positive public image.

## **2. Sustainable Certifications**

A popular method by seafood retailers to show consumers that they are contributing to environmentally friendly practices are sustainable seafood certifications. However, sustainable certifications, such as Dolphin Safe Tuna labels, are unreliable as there is no real way to ensure that requirements are truly being met (Tabrizi, 2021). Furthermore, more trustworthy certifications, such as Marine Stewardship Council certifications, focus solely on sustainable fishing on the ecological side and do not contain enough safeguards to ensure that vessels are free from human rights abuses. According to the Marine Stewardship Council's website, fisheries who have been convicted of forced labor within the past two years are prohibited from seeking certification (Marine Stewardship Council, 2022). However, forced labor is rarely reported, making it possible for fisheries to operate using sustainable fishing methods and forced laborers. Observers are not often onboard vessels, so most certifications are granted based on the captain's word, which can often be unreliable. The large scale of the fishing industry as well as inaccuracy or lack of reporting by supplying countries can result in slavery or forced labor tainted and

illegally caught seafood landing in markets of countries that better adhere to regulations, despite sustainable certifications (Tickler, et al., 2018).

## **The Role of NGOs and the Media**

### **1. Non-Governmental Organizations (NGOs)**

NGOs fill the gaps in enforcement and awareness that governments and corporations leave behind. For example, in 2008, Greenpeace effectively impeded and stopped trawling around Germany by dropping 3 ton boulders on the seafloor (Urbina, 2019). Greenpeace also releases a “Carting Away the Oceans” report cards that ranks supermarkets based on ethical purchasing, supply chain transparency, and fishery to shelf traceability. Sea Shepherd led the longest chase of an illegal fishing vessel in history when following the *Thunder*. This ship was notorious for IUU fishing and took advantage of confusing maritime laws, difficult to enforce treaties, and lax national laws to evade laws and change its identity. Environmental NGOs are perhaps the most renowned internationally, however many nonprofits exist that protect seafarers. Unfortunately, fishermen make up most seafarers and they are not proportionally represented. Some organizations protecting seafarers are Mission to Seafarers, Stella Maris, and Human Rights at Sea (Haines, 2021). The Stella Maris Seafarers Center helps to rescue kidnapped mariners and sea slaves (Urbina, 2019).

NGOs also produce tools to help consumers make more informed decisions and to expose vessels suspected of IUU fishing or human rights abuses. The Monterey Bay Aquarium, Liberty Asia, and Sustainable Fisheries Partnership’s Seafood Slavery Risk tool allows viewers to identify the slavery risk in seafood by search for species and regions (Urbina, 2019). Seafarers International Research Centre and ITF have a publically available ranking of flag states based on labor standards (Haines, 2021). The Global Fishing Watch tracks fishing ships and makes their information public, as well as identifying ships suspected of criminal behavior. (“Following Forced Labor...”). The organization is currently working on a new tool to identify ships at high risk of using forced labor from 2012-2018. There are correlating indicators of human rights abuses and fishing such as capacity building subsidies for vessels, low catch value per fisher which drives down wages, high levels of unreported fishing, and a reliance on distant

water fishing which isolates a vessel from the law (Tickler, et al., 2018). This tool is limited to longliners, trawlers, and squid jiggers because those are the only vessels with documented cases of forced labor that have adequate AIS tracking data (McDonald, et al., 2021).

Global Fishing Watch pinpointed 27 potential indicators associated with forced labor, identifiable with satellite imagery. Ultimately, 11 indicators representative of debt-bonded labor and slave labor were used (Duppel and Joo, 2021; McDonald, et al., 2021). These variables do not seek to explain slave labor, but rather identify patterns of vessels using slave labor. The tool is trained with satellite data from 22 fishing vessels known to use forced labor to be able to find distinct behaviors of such ships. Some of the most important and telling indicators are distance from port, vessel engine power, maximum distance from port, daily fishing hours, voyages per year, and fishing hours at high seas. Satellite AIS data was used to determine risky behavior (McDonald, et al., 2021). Machine learning was used to predict the risk of forced labor for 16,000 longliners, squid jiggers, and trawlers during the study period. It was found that between 2,300 to 4,200 different vessels were at high risk of using forced labor for at least one year during the study period, representing about 14-26% of vessels studied and 57,000-100,000 individuals potentially affected. The model was able to correctly identify 92-100% of forced labor positive vessel years as being at high risk of using forced labor (McDonald, et al., 2021). Across all years of the study period, Taiwanese longliners, Chinese squid jiggers, and Chinese, Japanese, and Korean longliners consistently ranked as the top 5 fisheries with the most high risk vessels. Reports detailing abuse from migrant workers corroborate these findings. This study is a proof of concept for the new tool; however, it is an important step towards the creation of a tool that can identify ships potentially engaging in criminal conduct in order to target them for inspections. The research also supports the application of remote sensing in detecting forced labor issues. Although AIS systems are often turned off by vessels carrying out IUU fishing and operating with forced labor which leaves gaps in data, knowing which ships shut off their AIS systems can also indicate a warrant for inspection due to potential violations (McDonald, et al., 2021). A representative from Global Fishing Watch and specialist in human rights, Rocio Joo, stated that the main issue with using satellite imagery to monitor ships are data ethics and privacy (Duppel and Joo,

2021). Companies and ship owners could therefore speak out against the use of such tools. Furthermore, the tool is limited by anomalous ships, such as those who have good fishing practices but are still complicit in using forced labor.

NGOs are also integral in creating and pushing for new policy. Human Rights at Sea has been a key player in helping fishermen at the policy and legal stage by producing reports of abuse of seafarers, advocating for justice for seafarers, and assisting in creating change in the international legal system. Since 2017, Human Rights at Sea has worked with DLA Piper offices in the middle east. The law firm does pro bono work with the non profit to help sea slaves (DLA Piper, 2020). The organization is currently advocating for their Geneva Convention on Human Rights at Sea. The Geneva Convention would be a soft law approach encouraging the protection of fishermen to prevent sea slavery. States would need to be persuaded to endorse the Convention, thus giving them no legal obligations, only guidance to improving human rights compliance (Superyachts, 2021). The guidance however, is already supported by existing human rights law, thus it is legally enforceable, but it needs to be practical to enforce to be effective. The Geneva Declaration must be accepted by the Geneva Human Rights Council, UNCLOS, UN General Assembly and Security Council, the FAO, and the IMO.

Another example of policy proposals by NGOs is an NGO position paper covering important considerations for import controls in the EU released by a coalition of NGOs. These considerations include: (1) the EU must establish separate law that requires corporations to undertake human rights and environmental due diligence (HREDD) and provide remedies to victims of corporate abuse; (2) The Sustainable Corporate Governance (SCG) directive must contain both administrative enforcement by authorities and judicial enforcement by virtue of injunctive, compensatory and/or restorative claims by (potential) victims and representative stakeholders; (3) EU should create import controls on products made or transported with forced labor resulting in a powerful supplementary instrument to enforce forthcoming HREDD laws; (4) for EU import controls to remain effective, the SCG directive must require corporations to disclose their subsidiaries, business partners and suppliers to ensure that stakeholders and public officials can externally monitor their operations, and ultimately, hold them accountable; (5)

European Commission should actively explore extending import controls on products made in violation of other types of human rights or environmental harm; and (6) the abused should have the right, through a formalized and secure procedure, anonymous or confidential, to make complaints to relevant authorities without fear or reprisal (Eastwood, et. al., 2021). The formalized and secure procedure must be timely and carried out by a proper body. Sanctioned entities, regions, and products should be made public and a database maintained. Company practices suggested to improve human rights and environmental risk management include integrating human rights into policies and planning processes, disclosing how this is carried out, conducting human rights impact assessments as well as taking countermeasures, reviewing and reinforcing complaints mechanisms and speak-up programs, ensuring the capacity of the business to handle HREDD crises and supply chain risks, and reviewing the role, resources, and expertise of the legal and compliance functions.

NGOs also are vital to bringing companies and individuals to legal justice. The Environmental Justice Foundation created the basis for a breakthrough successful case in Thailand when the Thai government charged a fishing company, Boonlarp, with human trafficking, bringing international attention to sea slavery (Urbina, 2019). This was the first incident where individuals with more authority than low level brokers were charged. Curiously, murder was not one of the charges brought against any officials despite murder being frequent, according to locals and workers. This was due to the corrupt police system that looked the other way when bodies turned up. The Environmental Justice Foundation had collected testimonies and evidence corroborating human trafficking, murder, corruption of local officials, and labor abuses. Although it is evident that officials and police play a critical role in maintaining human trafficking rings that deliver labor to the fishing industry by tipping off fishing industry criminals, they continue to evade punishment. Human Rights at Sea is also advocating for an international arbitration system specific for human rights abuses at sea. The Human Rights at Sea arbitration initiative would create a system that is financially accessible for victims and a process that is highly specific for human rights issues at sea as well as creating binding arbitral awards that are internationally enforced (Villaggi and Guthrie, 2021).

## 2. Media

The media plays a large role in raising awareness of environmental and humanitarian issues. Environmental issues at sea have been perpetually targeted by the media with examples like the Save the Whales movement and the release of the film *Seaspiracy*. Human rights at sea, however, receive less attention. Human rights abuses at sea began to gather public international attention due to the popularity of the Somali pirate attacks and due to migrant flows to Europe from the Middle East and North Africa via the Mediterranean. After these events became more publicized, more literature was published linking human rights and maritime issues (Haines, 2021). Counter piracy missions against these attacks were the first international maritime law enforcement missions and prompted more legal analyses of law enforcement through the lens of human rights (Petrig, 2021). Somali piracy spurred an increase in human rights cases before both public and international courts, created an academic and legal interest in international court rulings on human rights and maritime law enforcement and shifted the scope of legal proceedings to encompass maritime law enforcement. Following the anti-piracy missions, global piracy decreased due to better enforcement, security, and an increased stabilization of Somalia's government (ICC, 2014). The attention brought upon Somali piracy was a rare phenomenon, as maritime incidents are rarely investigated by proper, responsible, or competent authorities.

Previous Somali piracy attacks targeted westerners and disrupted the western economy by intercepting shipping routes and securing millions of dollars from private companies in the form of ransoms, thus becoming a high profile case (Hopkins, 2012). Most victims of sea slavery in the global fishing industry are poor and brown, which may cause their struggles to receive less attention than Somali piracy. A major difference between Somali piracy in the 2000s and current sea slavery in the fishing industry is that Somali pirates threatened the western economy while sea slaves are an integral part of it. Although piracy in Somalia plateaued in 2011, IUU fishing is still prevalent in the nation due to the nation's status as a failed state, thus creating an inability to enforce any laws (Hopkins, 2012). A less sensationalized piece of the Somali piracy story is that piracy in the region is the result of industrial fishing driving local fishermen to turn to crime to support themselves as the viability of their previous

livelihoods dwindled (Rees, 2019). The absence of the root cause of Somali piracy is potentially due to the fact that it diverts the victim from being western and focuses it on poor people of color. Somali piracy attacks were heavily sensationalized by the media and thus received international retaliation, arguably because victims were western and fit better into the agenda of western media than laborers abused in the fishing industry.

Sea slavery and forced labor at sea was exposed when the Associated Press published a piece of breakthrough journalism, telling the stories of sea slaves, who even after their return from sea, were stranded with no way to get home (Urbina, 2019). The piece won the Pulitzer and Polk prizes and garnered international attention towards sea slavery. The attention created by this piece resulted in some men being brought home to Myanmar, Indonesia, and elsewhere. Further awareness was raised with Ian Urbina's *Outlaw Ocean* series in the New York Times and his 2019 book under the same title, chronicling his real experiences with forced labor and environmentally destructive practices in the fishing industry. However, such media focusing specifically on sea slaves and forced laborers have not received the same international intervention as Somali piracy attacks and environmental focused initiatives.

### **3. Limitations**

Although significant impact and efforts come from NGOs and the media, they are not responsible for the creation of laws and are limited by regulations in place. Furthermore, they put themselves in danger when confronting the global fishing industry which has extensive resources to defend itself and threaten opposers. Advocacy groups and individuals often face harassment and intimidation, which do not always come in the form of empty threats. Lawsuits are brought against them regarding defamation, civil disobedience, and national insult. One example is in 2018 when criminal defamation cases were filed against a foreign human rights campaigner, Andy Hall, in Thailand who had exposed abusive conditions in the country's supply chain (Teh, et al., 2019). Ian Urbina faced precarious situations, intimidation, and surveillance while researching for his book, *The Outlaw Ocean*. Government agents and local communities cooperated to hide the malicious secrets of the fishing industry and made the journalists' sense of safety uncertain. Despite the positive impacts made by NGOs and journalists, their presence

threatens the economic endeavors of large corporations, communities, and governments, which puts them in precarious legal and safety situations.

## **Solutions**

### **1. International Laws and Treaty**

#### **a. Expanding on Existing Agreements**

As the main governing body of the seas, UNCLOS would be the first international agreement to be altered. UNCLOS would require direct mentions of human rights in the maritime environment, a provision of force to reduce confusion when states attempt to enforce their own laws and respect IHRL, and environmental standards for the high seas. CP rights would be the most promising route to incorporating human rights in UNCLOS as CP rights are the most widely accepted form of human rights. Speaking of human rights in terms of CP rights will likely result in greater success of IHRL being incorporated into existing treaties, such as UNCLOS. UNCLOS can create specific conventions to target victims of human rights abuses at sea in the fishing industry, especially those that have garnered significant attention from the public and clearly violate CP rights (Teh, et al., 2019).

The UN should be obligated to protect individual rights on the high seas through an additional convention of UNCLOS. Article 293 of UNCLOS states that the law applicable to the courts and tribunals of UNCLOS are the Conventions “and other rules of international law not incompatible”, meaning that IHRL can be incorporated into UNCLOS (Teh, et al., 2019). An international court for individuals, similar to the International Tribunal for the Law of the Sea, can be established to address grievances of individuals.

To begin to tackle the issue of flags of convenience, there must be a stronger international consensus to require a genuine link between a vessel and its flag state (Frazer and Lee, 2021). The flagging process between a vessel and a foreign state should always be investigated to prove the genuine link and approved by an international body. Therefore, fewer countries would be able to take advantage of another's lenient regulations regarding environmental and human rights.

Another piece of international legislation that could be amended to help those in the fishing industry is the 2006 Maritime Labour Convention, which currently only applies to shipping vessels. The Convention focuses on seafarers rights and employment practices in the shipping industry. The Convention covers illegal and fraudulent recruitment practices; the exploitation of ignorant and vulnerable persons by the imposition of unlawful fees and burdensome employment conditions; the blacklisting of seafarers who attempt to assert their rights or seek assistance to obtain redress for unfair treatment; the exertion of pressure on seafarers and their dependants to sign away their rights to full compensation under the law; physical and mental abuse of seafarers at sea, including subjection to substandard living conditions and denial of appropriate medical care; non-payment of wages; delays in paying entitlements to families; and abandonment of seafarers at locations far from their homes or the places of recruitment (Haines, 2021). In 2016, the Convention was amended to better protect seafarers from harassment and bullying as well as prohibiting the operation of ships with substandard working conditions for the crew. If the convention was expanded to cover fishermen, many practices that result in forced labor and other human rights abuses on board would be directly addressed by an international body of law. The Convention could further be amended by applying not only to ships flagged to signees, but all ships entering the harbors of signees. Other bodies of legislation, such as the Port State Measures Agreement, should add a human rights standard in order to protect both the environment and human rights.

IHRL and laws governing the seas should be regarded together to prevent human rights abuses. A set of standard rules of international human rights law and relevant international laws of the sea should be regarded together as a special regime of international law to maintain the principle of the duty of the state to protect people at sea (Haines, 2021). Rules from other international law sectors should also be included, such as from maritime, labor, and refugee law. International law regarding human rights at sea must be open to borrow from other areas of international law, such as those relating to human trafficking and international humanitarian law. Without remaining open to input from other areas of international law, human rights at sea law could become treated as a separate topic, as many other areas of international law

are. Despite the myriad of international agreements meant to protect human rights, which can have relevance at sea, many of these agreements are not enforced on land, making them even more difficult to enforce at sea.

**b. A New Agreement**

**i. A Treaty**

A Working Group was established in 2014 by the UN Human Rights Council with the mandate to develop a treaty on business and human rights. However, this treaty, titled as *Legally Binding Instrument to Regulate in International Human Rights Law, the Activities of Transnational Corporations and Other Business Enterprises*, is still being developed and it is unclear whether it would apply to all businesses or only transnational corporations (Crockett and Matthew, 2021). Under the “Protect, Respect, and Remedy” framework, states are obligated to protect against human rights abuses by third parties, which includes businesses. Although it is already the duty of the states to protect against human rights abuses in business, the new treaty is meant to "clarify and facilitate effective implementation of the obligation of States to respect, protect, fulfill and promote human rights in the context of business activities, particularly those of transnational character" by regulating business activity “within their territory, jurisdiction, or otherwise under their control, including transnational corporations and other business enterprises that undertake activities of a transnational character”. The third and latest draft of the treaty includes protection of “human rights, labor rights, environmental and climate change impact assessments” and requires states to provide victims with both judicial and non-judicial remedies. This would require states to create a system of legal liability for human rights abuses arising out of the business activities or business relationships of legal and natural persons. States would also be responsible for protecting those who they have a business relationship to that resulted in human rights abuses. This treaty will likely take a long time to adopt, if ever.

Another recommendation for a new treaty is one that completely bans fishing on the high seas. According to Daniel Pauly, the leader of the Sea Around Us project and a professor at University of British Columbia's Institute for the Oceans and Fisheries & Department of Zoology, the high seas do not

offer any resources that are not already found in EEZs (Duppel and Pauly, 2021). Therefore, with proper fisheries management, there is no need to fish in the high seas. Conversations on this treaty would likely begin as soft law, as soft law can fill the gaps left behind where governments do not want to commit to definite change. Although it would not be binding, soft law instruments would set guidelines and encourage compliance with them as well as beginning or continuing the international conversation about certain topics. Eventually, this treaty can begin to take on stronger language with the support of more states.

To maintain a business and human rights treaty or a treaty that bans fishing on the high seas and ensures safety on them, an international enforcement body would need to be established. Although maritime security exists, its meaning is not internationally agreed upon nor defined in international law. However, all other definitions relate to transnational crimes committed at sea, often also surrounding territorial integrity, freedom of navigation, and access to resources (Petrig, 2021). Therefore, as seafood is an international industry, overexploiting the world's stocks of certain species, often using poor foreign labor, with vessels flagged to countries which they have no relation to, and distributing seafood across the globe, it is reasonable to hope that a maritime security body addressing violations of environmental regulations and human rights at sea is feasible. Specific countries would be given the role of patrolling the high seas and preventing or catching environmental and human rights abuses. As the US has the largest maritime domain, it is reasonable to suggest the US navy lead the patrol (Petrig, 2021). France, another country with significant maritime power, can also be a leader in international enforcement (Duppel and Haines, 2021). The treaty would also need to address the limitations of IHRL on maritime law enforcement, carefully detailing a provision of force and limiting protections on those incurring violations (Petrig, 2021).

A reporting system similar to the Declaration Condemning Acts of Violence Against Seafarers, where major flag states are committed to reporting violence to the IMO, should be utilized (Urbina, 2019). An easily accessible and navigable reporting system would allow ships acting in line with the

treaty to act in their own interest by reporting those in violation of it. Therefore reducing the competitive advantage of ships violating human rights and environmental standards.

A treaty opting for the transition to fishing exclusively in EEZs would need to recognize ESC rights. ESC rights are critical to a just transition towards a sustainable seafood industry reliant on EEZ yields and need to be widely accepted in order to protect small fisheries. ESC rights are currently difficult to use from a legal perspective to enforce human rights and well being of fishing communities due to them being poorly defined (Teh, et al., 2019). A recognized right to natural resources, implicating a right to fish, would assist small fishing communities in accessing adequate fishing resources. Currently, private actors are currently not subject to human rights treaties, thus a future treaty should implicate seafood companies in being accountable for human rights abuses in their supply chain by making ESC rights a focus of the re-establishment of healthy national fisheries. ESC rights are shown to be vital to small-scale fisheries, which often face poor governance and socio-economic conditions, threatening livelihoods and food security as governments may disregard necessary rights to protect small fishers, as well as laborers at sea. However, ESC rights are often overlooked because they can be specific to communities and difficult to apply in the same context on a broad scale, therefore definitions specific to small fishing communities must be defined in a new treaty. The UN's Sustainable Development Goals aim to provide all men and women, especially the poor and vulnerable, with equal rights to economic resources by 2030, thus supporting the incorporation of ESC rights recognition in national fisheries (Teh, et al., 2019).

## **ii. International Arbitration**

Better enforcement of and incentive to comply with existing regulations could have a huge impact on human rights and environmental destruction at sea. Arbitration can be broadly applied to abused individuals and those defending the environment, however its greatest limitation is its semi-contract structure (Villaggi and Guthrie, 2021). Arbitration is a matter of contract, which makes it difficult to establish in this context as the contract must be between both parties (for example, business and individuals). It would be difficult to ensure that flag states with lax human rights regulations and restrictions comply with an international treaty creating a system of arbitration (Human Rights at Sea,

2019). Arbitration can take place against a party that has previously agreed to arbitrate, or between parties that agree to arbitrate an arisen conflict, however this is less common. It is important to have bargaining power with potential claimants, creating an accessibility issue for poor, migrant deckhands. An international agreement would likely have to be a soft law approach as most international treaties use weak language to gather agreement between states (Human Rights at Sea, 2020). Soft law can be a good starting point in international regulation as it can influence compliance and regional regulations which may eventually solidify into hard law in the future (Teh, et al., 2019).

An arbitration system would be flexible, maintain neutrality, uphold familiarity, and be adaptable to specialization. It would need to include enforcement measures, compliance, and risk management as well as deterrence for human rights abuses. Businesses, individuals, and states must all be implicated (Human Rights at Sea, 2019). Arbitration would also be affordable for victims as many law firms would do pro bono work to improve their reputation (Haines and Duppel, 2021). Such a system would also be supported by the 2011 UN guiding principles on Business and Human Rights. Overall, arbitration would create a neutral form for resolutions, be financially accessible, have an efficient procedure, as well as human rights and maritime specific procedures (Hammond, et al., 2020). There would also be internationally binding arbitral awards. Arbitration would also create the benefit of preventing human rights abuses at sea by creating an incentive to not engage in them in the first place.

## **2. National Regulation**

### **A. Expanding on Existing National Regulations**

The German *Act on Corporate Due Diligence in Supply Chains* can be used as an example and be expanded to other countries (RP Legal & Tax, 2021). Countries should enact similar laws that apply to any company operating in its territory as well as employees of national companies operating abroad. The German law also sets an example for liability and access to remedy. More countries should fine companies and hold them responsible for human rights abuses in their supply chain unless they can prove actions carried out to prevent these events. Expanding the special capacity to sue, introduced by the German act, could require a domestic trade union or non-governmental organization to facilitate

proceedings (Martin and Philips, 2020). Sanctioning powers, excluding fined companies from public contracts, establishment of a specific monitoring authority, powers granted to corporations to inspect, summon people, and request and examine documentation should all be incorporated into new national business laws. By creating more laws similar to the *Act on Corporate Due Diligence in Supply Chains*, companies will have more pressure to prevent and address human rights violations in their entire supply chain as they face reputational, litigation, and profit risks. Future laws should improve on the German act by including auditing and certification services in due diligence laws to prevent the cover up of violations by establishments such as manning agencies.

As coastal states set the conditions for granting license to fishing vessels within their EEZ, human rights should be part of licensing conditions (Haines, 2021). Those who violate licensing agreements should be punished with revoked licenses and fines. Nations should also file criminal cases against vessels involved in human rights abuses operating in their EEZ. Furthermore, harmful subsidies should be cut from national spending. Subsidies should be assessed to determine if they contribute to environmental damage and human rights abuses.

Countries known for human rights abuses in their fishing industry, such as Thailand, need to make greater efforts to seek out labor abuses by interviewing workers in greater depth. This can be done by hiring interviewers that speak the native language of the crew which would result in interviews being done directly with the crew rather than through a supervisor who has motives to hide human rights abuses (Urbina, 2019). Interviewers should ask more than surface level questions about a topic when an answer or person seems suspicious and train interviewers on warning signs. Inspections of vessels should also be more detailed, looking specifically for signs of labor abuse and IUU fishing.

## **B. New National Regulations**

Governments should change fisheries management and establish more MPAs where fish can repopulate and spillover into fishing grounds, increasing ecological resilience to human disturbances caused by aggressive, illegal, and destructive fishing. The size of fishing fleets should be scaled back, quotas and government subsidies for offshore fishing eliminated to reduce the need for forced labor and

allow fish stocks to regenerate (Urbina, 2019). Fisheries management should also move away from single species management and focus on an ecosystem approach. Industrialized fisheries need to create ecosystem based management that attempt to achieve different and often conflicting goals which will require tradeoffs as well as cooperation between different fisheries to promote entire ecosystem health (Thresh, et al., 2015). Strict caps and quotas unique to different species should be enforced (Rees, 2019). Healthy fisheries can also promote economic growth in other sectors, such as recreation and tourism. Ecosystems can be managed to promote multiple uses which would be determined based on environmental, economic, and societal values (Thresh, et al., 2015). Moving towards an ecosystem based approach to fisheries management will prevent marine degradation and allow more human values to be supported by the marine environment.

Better reporting and monitoring systems are also necessary in helping states enforce regulations. Shipowners should be legally obligated to report crime at sea, which could potentially be incentivized with a monetary reward. Cruise vessel security and safety act mandates reporting criminal activity on passenger ships to the FBI should be used as an international model on fishing vessels (Urbina, 2019). Violations of such acts should be punishable with fines and prison sentences. For better monitoring, national data on ships should be made public by flag states to show transparency and commitment to their own environmental and human rights goals. Information such as vessel ID, authorizations, and tracking data should be easily accessible in order to be shared between relevant stakeholders (“Following Forced Labor...”).

### **C. State Arbitration**

An *ad hoc* or state based approach would be more minimal than international arbitration, however it would likely be more promising (Human Rights at Sea, 2020). The system would be independently managed by parties and arbitrators and states would need to assist to enforce neutrality, transparency, and would provide specialist arbitrators for specific cases (Human Rights at Sea, 2019). The state would be responsible for enforcing outcomes of arbitration proceedings that happened outside of the domestic court (Villaggi and Guthrie, 2021). The outcome would be enforceable in 168 countries that have ratified the

Convention on the Recognition and Enforcement of Foreign Arbitral Awards. Each state would be responsible for its own arbitration system specific to human rights and environmental degradation at sea, therefore there would be varying effectiveness.

### **3. Monitoring with Technology**

As technology improves and becomes more affordable, monitoring internationally, nationally, by corporations, and by NGOs will also have an increased capacity to improve. The release of government, military, and corporate data at country, region, and company levels would be helpful in creating and improving new technologies for monitoring. Technology will be able to help with efforts by all sectors discussed in this thesis.

Geospatial data will be one of the most important advancements in maritime monitoring. Currently, high resolution to catch ships are too expensive at over \$3500 per picture to use for effective monitoring (Urbina, 2019). However, the rapid improvement and innovation in technology will only make future monitoring easier. It is important that all vessels have VMS and Automatic Identification System (AIS) trackers to help law enforcement track their activity at sea and prevent illegal fishing. Current monitoring in the fishing industry lacks the ability to detect issues in individual vessels (McDonal, et al., 2021). As geospatial technology becomes cheaper and more accessible, there is potential for a tool, similar to that of Global Fishing Watch to be developed, but rather than evaluate past occurrences, it would operate in real time and identify suspicious individual vessels. This could be possible with the assistance of trackers that are unable to be turned off, as well as permanent identification numbers. Furthermore, a more advanced tool coupled with other types of technology and more data such as, catch type, would cover more ships, more ship types, and better identify vessels at risk of forced labor by adding context to each case. A comprehensive and advanced global monitoring system would deter ships from violating regulations and make it easier to identify, stop, and sanction those who continue. Ships identified by such a tool would be stopped, boarded, and searched at sea or at port with potential further investigations (Petrig, 2021). Vessels found with IUU caught fish or evidence of human rights abuses would be seized, destroyed, or disposed of some other way. Investigations would extend to individuals

suspected of engaging or promoting illicit behavior, such as captains. Such individuals would be searched, interrogated, arrested, detained, and in the case of incriminating evidence, prosecuted in the seizing state or deported to another country to be prosecuted. Punishments such as these would need to be authorized by an international treaty to avoid complications (Petrig, 2021).

Conservation efforts can also be aided by the increase in availability and accessibility to new technologies by making monitoring more efficient and cost effective (Thresh, et al., 2015). Geospatial data on fish ecology, taxonomy, and distribution should be made publically available (Shao, 2009). Unmanned surveillance aircraft can also be helpful in the future, when it becomes more economically viable, to monitor IUU fishing (Haines and Duppel, 2021). Geospatial technology can also illustrate past changes in the marine environment, revealing patterns important to fisheries management. A study mapping global marine fishing from 1869-2015, showed patterns in catch type and yields correlated with social contexts, types of gear used, and advances in monitoring (Watson and Tidd, 2015). As data increased and became more available, fisheries were better monitored and tracked, allowing for better identification of fishing hotspots and estimations of IUU fishing. Increases in spatial precision will be significant regarding relations between fishing and sensitive ecosystems. The study found that gear associated with increased global catch are diesel propulsion, freezers, speed and power of vessels, night fishing, bigger trawls, sonar and radar, and efficient fishing gear. Findings can guide fisheries management to better protect vulnerable species. Future studies using satellite technology can incorporate NOAA's Visible Infrared Imaging Radiometer Suite (VIIRS) to add "night vision" to imagery to better identify vessels.

Other tech advancements include DNA field kits that can identify fish species to prevent illegal fishing, barcodes can be used to track packages to increase traceability, and algorithms can flag imports from high risk vessels with past violations or those involved in organized crime (Urbina, 2019). These technologies will be especially useful in protecting marine environments where current enforcement of environmental regulations are ineffective (Watson and Tidd, 2015).

## **1. Corporation Action**

### **a. Due diligence**

Banks and insurers should include an arbitration clause which will be economically favorable to them as consumers are increasingly wanting to buy from socially responsible businesses. Arbitration could lead to better public relations as the business would seem more socially sustainable (Human Rights at Sea, 2020). Large corporations would easily be able to add an arbitration provision to a supply contract with ship owners, thereby holding the fishing company responsible for onboard conditions (Villaggi and Guthrie, 2021).

Companies should also require specific practices by fishing boats supplying them. Manning agencies used by a company's suppliers should be heavily investigated for unethical practices and companies should request copies of signed contracts as well as a record of fees paid to eliminate upfront or fake fees (Urbina, 2019). Consultants could be hired to carry out inspection and exit interviews to ensure ethical recruitment and labor practices. Seafood corporations should require vessels in their supply chains to have a vessel identification number or a permanent IMO number to increase traceability and make previous violations and the ship's established reputation immediately known. Ships included in the supply chain should only be those that have strict accountability and transparency practices. Companies should also only buy from countries that have ratified international agreements promoting good labor and environmental practices. Company observers can be placed on ships to monitor activity and report violations. Corporations should also require fishing boats to make frequent visits to ports and transshipment via motherships should be banned or limited (Urbina, 2019). AIS tracking must be turned on to deter violations. Requiring AIS tracking is an excellent way to take advantage of existing technology to monitor vessels. Of 193 vessels with documented forced labor in Global Fishing Watch's database, only 58 used AIS and transmitted sufficient AIS to be monitored (McDonald, et al., 2021).

### **b. Sustainable Certification**

Sustainable certification should also be improved. The demand and move towards sustainable seafood is rising as in 2015, 14% of global seafood was certified as environmentally sustainable whereas

only 0.5% was in 2005. About 90% of North American grocery markets have made commitments towards sustainable seafood. Ratings, certifications, and the awareness of environmental issues have been effective in pushing businesses to change procurement and supply chain management practices to be consistent with sustainability demands. However, the majority of sustainability standards in the fishing industry cover environmental sustainability and lack a social sustainability aspect (Teh, et al., 2019). Thus, the welfare of workers in the fishing industry are unaccounted for. Fair Trade Capture Fisheries Standard and Seafish Responsible Fishing Scheme certifications are a subset of those certifications concerned with more than environmental sustainability.

Sustainable seafood is mainly viewed to be fisheries that have achieved a certain ecological or environmental goal, thus earning them seafood certifications such as the Marine Stewardship Council ecolabel and ‘Dolphin-Safe Tuna’ (Teh, et al., 2019). Oftentimes, these labels are difficult, if not impossible, to prove as accurate and they do not include measures to ensure socially responsible seafood, therefore observers must be put on ships to guarantee current sustainable certifications and to warrant the creation of new ones.

Certifications of sustainable seafood should incorporate the entire supply chain including both human rights and environmental standards and be properly monitored to guarantee true sustainability.

## **Evaluation**

### **1. International Solutions**

#### **a. Expanding on Existing Agreements**

Amending existing treaties may prove difficult as states have already agreed to them on their current terms. Insistence on new amendments could easily be crushed by member states or prompt them to leave the agreement. International processes are lengthy and adding an amendment, or establishing a new treaty, would take a long time and great effort. Specific to a new treaty, international conventions take a long time to come into action and lose strong language along the way (Superyachts, 2021). The easier and quicker route is for states to endorse guidelines, such as the Geneva Convention proposed by

Human Rights at Sea. A ban on fishing on the high seas would be incredibly difficult to be agreed upon and come into action as the high sea fishing creates jobs and provides substantial protein to the growing population.  $\frac{1}{3}$  people on the planet depend on fish as their primary source of protein and the fishing industry creates 56 million jobs on vessels globally, making a ban on high seas fishing harmful to livelihoods (Rees, 2019; Urbina, 2019).

#### **b. A New Treaty**

A new treaty would create issues with its equality in enforcement and monitoring. Wealthy countries will easily be able to generate the capacity to carry out enforcement and monitoring measures, however, smaller developing countries will find trouble in this due to economic limitations. Furthermore, it may be impossible for any flag state to fully enforce measures on board their ships at the high seas and open registry nations have the least capacity to do so (Haines, 2021). The proposed international enforcement body would also spark controversy. The US as a great maritime power would make the most sense in taking the role of enforcer. However, it may be inappropriate and hypocritical for the US to protect against human rights on the high seas. The US is known to use the lawlessness of the high seas to its advantage to circumvent its national human rights laws by kidnapping terrorism suspects and torturing them at locations on the high seas (Ndiaye, 2019). A cooperative approach may spark less protest however it would be more confusing. Questions of the roles of different states regarding arrest, detention, transfer, and prosecution would need to be agreed upon and strictly stated (Petrig, 2021). Furthermore, national rivalries would likely get in the way of effective law enforcement (Urbina and Duppel, 2021).

#### **c. International Arbitration**

Despite the potential accessibility of an arbitration system, Steven Haines, an international lawyer specializing in fisheries and a trustee of Human Rights at Sea, doubts that victims would be prepared to arbitrate (Haines and Duppel, 2021). He further posits that abusive companies will take advantage of the confidentiality provisions of the international arbitration system to abuse crew.

## **2. National Solutions**

### **a. National Regulations**

Reducing national harmful subsidies for the fishing industry is critical to reduce pressure on wildfish stocks, assist in ecosystem rebound, and make human rights abuses riskier to perpetuate. However, if ships are unable to travel to remote fishing grounds without subsidies, aquaculture will increase and put pressure on coastal habitats. It is important to develop sustainable management of aquaculture if harmful subsidies are cut (Conroy, 2018). The necessary establishment of new MPAs could be met by backlash from local communities who already experience depleted fishing grounds due to industrial fishing. Although new MPAs would let stocks rebound, livelihoods of local fishermen would be further harmed in the short term.

The greatest issue regarding national regulations and solutions are the lack of capacity in developing nations. Due diligence laws similar to the German law would support businesses in becoming more sustainable, however, not all countries have the capacity or political atmosphere to enforce such laws. The socio-economic landscapes and governance systems can prevent national fisheries' progress towards sustainable certification and from moving away from frequent human rights abuses (Teh, et al., 2019).

### **b. National Arbitration**

Both formal and informal processes in handling individuals from an arbitration case pose difficulties in establishing a national arbitration system focused on fisheries. Formal arbitration proceedings risk taking a long time due to long judicial processes. Extradition that has resulted from such processes can also be difficult under the absence of an extradition treaty between nations (Petrig, 2021). A suspect's right to file a non-refoulement claim and requesting judicial review of decision could drag a proceeding on even longer. However, an informal transfer process is limited by the risk of a lack of justice and a violation of IHRL, even though it would be faster than a formal proceeding.

Furthermore, national laws do not always grant the same labor rights to migrant fishermen as nationals and it may not be in the economic interest of nations to extend these protections which would

assist them in arbitration (Teh, et al., 2019). National labor protections must be applied to migrant workers as well, who tend to be the majority of victims of forced labor and human rights abuses in the fishing industry. With protections, the route to arbitration would be more inviting and easier for the majority of those who need it.

### **3. Improved Monitoring With Technology**

New technological tools will change the way the seas are monitored and how enforcement is informed. The greatest limitations are waiting for new technology to be released, the initial costs of such technology, and a lack of data. In order to create a tool that assesses the risk of forced labor for individual vessels based on the traits of that vessel, more data, such as catch type, fishing method, and crew origins, needs to be gathered worldwide (McDonald, et al., 2021). A further limitation is the changing data surrounding forced labor dependent on social, environmental, and economic context. However, a less precise tool can still operate and be helpful before this data is readily available. A comprehensive model would be helpful to governments, businesses, and consumers. Governments could identify specific ships to be sanctioned or inspected. Businesses could use it to only use low risk ships in their supply chain. Consumers could educate themselves on sustainable seafood by learning which regions and catch types are at risk of IUU fishing and forced labor.

Ethical concerns arise regarding technological monitoring. Companies, ships, and individuals may assert that their privacy is being compromised with such monitoring technologies (Duppel and Joo, 2021). Therefore, there must be an ethics board and standards for new monitoring technologies for fishing vessels.

### **4. Corporate Action**

#### **a. Due Diligence**

Corporations can contribute to the reduction of human rights abuses and environmental degradation in their supply chains through audits, better company policy, and better monitoring. Observers onboard vessels supplying a company's seafood would greatly assist in monitoring and preventing IUU fishing. Observers are given protections, paid well, and tracked (Urbina and Duppel,

2021). However, reporting on this industry puts observers at risk as IUU fishing is integral to the modern fishing industry, therefore companies do not want to stop these practices. Observers often disappear. In 2015, a filipina observer was killed after a tuna fisher was arrested for illegal fishing. Another issue with observers is that they are only focusing on fishing practices, not labor conditions, and they can be bribed into hiding IUU fishing practices (Urbina and Duppel, 2021).

Due diligence is promising, however it is costly and time consuming. Repeated consultation and auditing services are not available to all businesses due to the cost and time to assess findings. Despite arbitration clauses in company contracts seeming attractive because of low cost, as both parties must pay their own counsel, the arbitrator, and the institution administering the arbitration, this would further bar poor, migrant deckhands from participation in arbitration as they likely do not have the capacity to do so (Villaggi and Guthrie, 2021).

#### **b. Sustainable Certification**

Better certifications to impress consumers are, in theory, a good idea. However, certified sustainable seafood may have unintended consequences on local communities and the ecosystem. For example, the creation of a new 'sustainable' fishery may still increase pressure on fish stocks and reduce the available fish stock to local communities, thus potentially widening social inequality in resource benefit distribution (Teh, et al., 2019). They would also be costly to enforce. Trustworthy observers would need to be present on all ships holding certification. Certifications should be supported by legal frameworks at national and international levels to avoid unintended consequences that otherwise would not be accounted for.

### **Recommendations**

#### **1. Overview**

Based on the previously discussed issues, efforts, and the evaluation, a set of recommendations is proposed in order to both prevent human rights abuses at sea as well as environmental degradation. The recommendations in the chart below will be further discussed.

<b>Scale</b>	<b>Body</b>	<b>Obligation</b>
International	United Nations	Subsidy Limiting and Re-Diverting Treaty
International	International Labor Organization (ILO)	Work in Fishing Convention
International	International Labor Organization (ILO)	Maritime Labour Convention
National	National Governments	Ecosystem-Based Fisheries Management and Promotion of Small Scale Fishers
National	National Governments	Criminalization of Abusive Recruitment Practices
National	National Governments	Due Diligence Laws
National	National Governments	Accessible Work Visas for Fishing Vessels
National	National Governments	Remote Monitoring of Fishing Grounds
National	National Governments	Stricter Laws to Prevent IUU Fishing
National	National Governments	Confiscation of Ships and Cargo Violating Standards on Ethical Recruitment Practices, Labor Laws, and Environmental Laws
Corporate	Corporations	Human Rights and Environmental Statutes in Contracts
Corporate	Insurance Companies	Human Rights and Environmental Statutes in Contracts

**2. International Recommendations**

The best course of action would be a treaty that diverts fisheries away from the high seas and replenishes national fisheries through the reorganization of fishing subsidies as well as the acceptance of the ILO Work in Fishing Convention and the expansion of the Maritime Labour Convention to fishing vessels. The high seas covers 64% of the ocean’s surface and removing fisheries from it would allow species to seek refuge and for populations to rebound, spilling over into national fishing grounds (Sala, et al., 2021). Reducing subsidies would make it difficult for vessels to remain in distant waters for a long

time, increasing port visits and therefore inspections, as well as limiting isolation of laborers. Once fisheries on the high seas are reduced, enforcement would become more manageable as it would be less remote and a national issue. Food and job security would not be threatened as rebounding ecosystems in the high seas, as well as better ecosystem based fisheries management in EEZs, would allow national stocks to be plentiful and create local fishing and other marine industry jobs. Although a treaty that heavily reduces high seas fishing seems drastic, the success of UNCLOS shows that an agreement of this magnitude is possible. Many nations, including the US, were against UNCLOS at first because they wanted to exploit resources outside of their EEZ. The US still has not ratified the treaty, however, the navy acts in accordance with it, as do most other nations (Pauly and Duppel, 2021). A treaty that reduces fishing on the high seas by requiring the diversion of harmful subsidies towards national fisheries management and creating international human rights and environmental standards in the fishing industry worldwide would require ample time to get enough signees, but would result in the replenishment of seafood stocks globally and eventually be respected by all nations.

Asian countries are some of the most notorious in getting away with IUU fishing and forced labor because of more lax regulations than other regions and the ability to operate in distant waters made possible by harmful subsidies perpetuates these malpractices (Pauly and Duppel, 2021). Good regulation in the EU, for example, prevents participation in illicit practices. Therefore, an international standard for environmental regulations and human rights in fishing should be implemented and enforced by sanctioning nations who fail to comply. Such standards can be set by both the Work in Fishing Convention and a subsidy limiting convention. Expansion of the Maritime Labour Convention would also set labor and worker treatment standards from the recruitment stage to the return to port. Furthermore, the principle of common heritage of mankind, one of the guiding tenets of international law of the sea, is meant to serve the interests of all people at all times, thus supporting a global reduction of high seas fishing in order to prevent labor abuses and environmental degradation, ultimately leading to a more sustainable food system and increased economic opportunities across nations (Tanaka, 2019).

Throughout the processes of creating and complying with the new treaty, developing nations should be considered differently than developed nations, as they do not have equal capacity for implementing sustainable fisheries and enforcement. However, generation of capacity for developing nations and sharing of knowledge would be implemented to assist developing nations in eventually fully complying with the new treaty. The costs of monitoring EEZs and the high seas can be cut through digital monitoring using geospatial technologies such as satellite imagery, drones, and more frequently used AIS transmitter data. Knowledge to put these monitoring systems in place would be shared globally to work towards the goals of reducing environmentally harmful and labor abusive fishing. Furthermore, cutting out a physical patrol body would ease geopolitical tensions by removing the need to give authority to certain nations in law enforcement on the high seas.

Although legally binding language is difficult to be ratified by many states, marine scientists and policy experts push its necessity to banning destructive fishing subsidies (Woody, 2021). Moving subsidies previously aimed at encouraging high seas fishing towards national fisheries management will put nations on a more equal footing when it comes to capacity to fish and reduce pressure on fish stocks by making remote fishing grounds less accessible. If the trend towards a more plant based diet continues, citizens of developed nations will be less inclined to direct their taxes towards supporting distant water fleets and protest against such subsidies. Subsidies can then be redirected into the restoration of national fish stocks, creating local jobs, recreational, and tourism opportunities.

The treaty will recognize ESC rights and obligate nations to focus on such rights when rebuilding local fisheries in order to promote the livelihood of small-scale fisheries that do not use destructive industrial practices and follow the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication. To ensure a just transition to sustainable national fisheries, the World Trade Organization (WTO) should impose sanctions against nations that are failing to meet environmental and human rights standards in the fishing industry. This would likely be effective in mitigating both offenses as the WTO is the only international organization that is effectively policed (Haines and Duppel, 2021).

The treaty can begin as a soft law agreement. Soft law is a good starting point in inserting IHRL and environmental standards into international regulation as it can influence compliance and regional regulations which may eventually solidify into hard law in the future (Teh, et al., 2019).

### **3. Fisheries Management**

The next recommendation based on the previously discussed literature and building on those discussed in the proposed treaty is better national fisheries management. Fisheries management most often focuses on a single species, however, ecosystems rely on processes that all species contribute to. Focus should be taken away from traditional economic goals of maximizing profits in the seafood industry through conventional management frameworks. By balancing goals of ecosystem health, profit from seafood, and other profitable aspects of a healthy marine environment, marine ecosystems and profits can both benefit. Fisheries should therefore be managed with ecosystem based approaches, addressing species heterogeneity to promote biodiversity, and creating healthy fisheries (Thrush, et al., 2015). An ecosystem based approach will allow fisheries to be managed for disturbance impacts and recovery, goals towards stability and resilience, and increasing or improving ecosystem functions. A good ecosystem based approach will rely on fisheries science and understanding the roles of individual species influencing the ecosystem. Advances in geospatial technology can be a cost effective way to assist monitoring, data collection, and ecosystem analysis modeling change. Modeling for future disturbances using this type of technology will help to prevent shifts in ecosystem dynamics by redirecting poor management before negative effects come to fruition. It is also important that government agencies enhance public awareness about marine conservation, encouraging citizens to make sustainable choices (Shao, 2009). Increasing fish stocks through conservation efforts would also decrease the necessity for forced and cheap labor, as the catch per fisher would increase and effort per unit catch would decrease (Woody, 2021).

As the international treaty would promote the acceptance of ESC rights in rebuilding national fisheries, the second and third pillars of the Monterey Framework can be used to support small scale fishers and fishing communities by assisting them in gaining access to local fish resources, rather than

national commercial fisheries being able to extract the majority of the fish (Teh, et al., 2019). This would improve food security in small communities and improve their economic situation as livelihoods of small-scale fisheries would not be jeopardized by commercial fleets. Indigenous practices could also be incorporated into local fisheries management in order to assist the rebound of the ecosystem and allow locals to have a voice in decision making. New and improved fisheries would take into account the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication. However, as ecosystem based management is extremely context specific, more funding needs to be directed towards it in order to allow more projects to be pursued, providing examples for a diverse array of local ecosystems. Such funding would be generated from diverting funds away from harmful offshore fishing subsidies. Therefore, ecosystem based management would become more accessible to a diverse array of communities.

#### **4. National Obligations**

Existing treaties should be used to enforce provisions and increase compliance with international human rights and environmental standards specific to fisheries. With less money being directed as subsidies towards the high seas, nations will be better equipped to manage and patrol their national fisheries. Licenses should only be given to fishing vessels if there are human rights and environmental compliance provisions which are enforced by the licensing coastal state (Haines, 2021). Coastal states must also keep a constant presence, remote or physical, on their fishing grounds to conduct regular inspections and operations. One area in which individual nations can have an extensive positive influence over is the recruitment practices for deckhands. Standards that govern recruitment practices for fishing should be established to limit the actions of abusive manning agencies. Furthermore, investigations into the labor recruitment practices for fishing vessels should be routinely carried out and abusive recruitment practices should be criminalized with jail time as punishment. As many laborers are migrants, nations should create an accessible work visa process specifically for fishery laborers in order to document migrant workers, thereby making monitoring their whereabouts and protecting their wellbeing easier. By documenting more workers, it would be more manageable to enforce the international Migrant Smuggling

Protocol and assist those who have been smuggled onboard for forced labor. Upon return to port, there should be regular inspections which employ Port State Control measures for monitoring and compliance. Increased availability and improvement of technology will allow nations to better monitor vessels remotely and deploy the coast guard when a vessel is identified as suspicious (Duppel and Pauly, 2021). By also implementing stricter laws preventing IUU fishing in international waters, such as those of Indonesia, nations can effectively protect their national fisheries as well as the laborers who operate them.

Individual nations will adhere to the international treaty by sanctioning others who do not follow an environmentally and socially ethical fisheries procedure as well as implementing due diligence laws similar to Germany's Act on Corporate Due Diligence in Supply Chains. Nations should not accept fisheries or fishery related imports from countries found to be violating human rights and environmental standards established in international agreements. Furthermore, if nations find ships within their territory operating with abusive labor practices or using labor that had been recruited unethically, such ships should be seized and their cargo confiscated.

## **5. Corporate Obligations**

Corporate obligations will follow recommendations in the national obligations as corporations will need to make changes to their supply chain monitoring, human rights standards, and environmental standards in order to comply with national laws and goals. In doing so, businesses and insurance companies should include human rights and environmental statutes in contracts. The Monterey Framework should be followed by companies when including human rights in seafood standards. Therefore, only ships that can guarantee good environmental and human rights practices will be employed and insured. Such a statute, along with frequent investigations of contracted companies and vessels should increase transparency and prevent labor abuses and environmental degradation associated with fishing vessels. Furthermore, public pressure on companies should push them to be more transparent and investigate human rights abuses in their supply chains (Petrig, 2021). Fishing specific international agreements such as those previously recommended, would assist in translating abstract IHRL into national law and finally into business practices.

## **Conclusion**

Looking forward, it is critical to publicize the beauty and importance of the sea and the high seas as well as the atrocities that are happening there. The public will not want to protect something that they are so disconnected from, therefore the continuation of exposure to these subjects is key in sparking the sensitivity of consumers and emphasizing to them that how they consume matters in the complex seafood network. Media sources must continue to expose atrocities in the fishing industry following the examples of the Associated Press and Ian Urbina to highlight the struggles of migrant workers that suffer at the hands of the global economy and the environmental degradation that comes with it.

The condition making human rights abuses and environmental degradation at sea so common in the notion of high seas freedom. This sentiment needs to be done away with in order to have lawful seas, where those operating within the law can safely continue to do so (Superyachts, 2021). International agreements specific to reducing environmental and human rights abuses at sea along with the signage of the Work in Fishing Convention and expansion of the Maritime Labour Convention to fishing can achieve this best by placing limits on high seas fishing subsidies, creating international environmental and human rights standards in fishing, protecting laborers from recruitment to return to port, and sanctioning those who fail to achieve their commitments. International action can spur progress on the national level by diverting more money to eco-systems based fisheries management which will bolster the local economy by creating not only healthy fisheries, but a promising recreational and touristic opportunity. Countries will strive to prevent IUU fishing to maintain prosperous and economically beneficial marine grounds and fishing activity closer to national shores will prevent human rights abuses by making monitoring and enforcement easier. Due diligence laws will put pressure on corporations to have a transparent supply chain with regular audits and ethical recruitment practices.

Rather than using the principle of freedom on the high seas as the main guiding tenet of the international law of the sea, the principle of the common heritage of mankind should be emphasized. Protecting the seas and the people who work on it follows the principle of the common heritage of mankind, which seeks to benefit all people in all places. Healthier seas will result in more fish and

rebounding ecosystems, thereby increasing food security and creating a boom in safer, coastal jobs. By following the recommendations provided in this thesis, a cascading effect will cause the international community, national governments, corporations, and consumers to comply with policy that promotes safer seas for the environment and those who work there as well as providing consumers with ethical seafood.

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