World Maritime University
The Maritime Commons: Digital Repository of the World Maritime University

Chapters | Library

2017

A Perspective on Safety and Governance Issues of Fishing Vessels

Azmath Jaleel
Cardiff University, Cardiff, Wales, United Kingdom

Devinder Grewal
World Maritime University

Follow this and additional works at: http://commons.wmu.se/lib_chapters

Recommended Citation
Jaleel, Azmath and Grewal, Devinder, "A Perspective on Safety and Governance Issues of Fishing Vessels" (2017). *Chapters*. 4.
http://commons.wmu.se/lib_chapters/4

This Book is brought to you courtesy of Maritime Commons. Open Access items may be downloaded for non-commercial, fair use academic purposes. No items may be hosted on another server or web site without express written permission from the World Maritime University. For more information, please contact library@wmu.se.

A Perspective on Safety and Governance Issues of Fishing Vessels

Azmath Jaleel
Researcher, Cardiff University, Cardiff, Wales, United Kingdom

Devinder Grewal
World Maritime University, Malmö, Sweden

That which is common to the greatest number has the least care bestowed upon it.

ARISTOTLE: *The Politics and the Constitution of Athens*

Introduction

This article focuses primarily on the safety of fishers and fish production in the global fishing industry and stresses the importance of accession to and adherence of international law to address these issues. Fishers are frequently subject to hazardous conditions in catching and delivering fish to markets. This catch amounts to about 90 million tonnes annually, not including illegal catches and discards, reported as landed by various types of fishing craft numbering approximately 4 million vessels globally.[1]

It is interesting to consider the nature of fishing as a professional sector. In addition to being an occupational identity, a professional group defines its territory to exclude others through a commonly agreed set of tasks, behaviors, knowledge, and credentials. Typically, professional groups restrict

* Grateful acknowledgements to the Seafarers Rights International, which initiated and supported the book *Fishers and Plunderers* by A. Couper, H.D. Smith and B. Ciceri, aided by A. Jaleel, on which several parts of this article are based, and to Mr. I. Yasir, Deputy Director, Transport Authority of the Maldives, and Mr. A. Wajeeh, senior naval architect, for their valuable contributions.

1 International Labour Organization (ILO), *Conditions of Work in the Fishing Sector* (Geneva: ILO, 2004), p. 6.

Ocean Yearbook 31: 472–501
© KONINKLIJKE BRILL NV, LEIDEN, 2017 | DOI 10.1163/9789004347137_018

entry through occupational closure strategies and provide protection to internal interests. These traits are seen through discussions presented in this article.

The authors acknowledge that the industry has a significant number of owners and operators that follow best, or at least good, practices of their profession and provide good examples for all others to follow. However, there is a considerable presence of others in the industry whose questionable actions are cited in this article. This is the area where change is needed.

In this hazardous and exploitative industry it is not possible to establish international statistics of personal injuries and mortalities at sea, occupation-related ill health, and losses of fishing vessels. Flag States typically collect such statistics for vessels over 500 gross registered tonnage (GRT), whereas a very large percentage of fishing vessels are far smaller in size. When discussing safety it has to be understood that the working and living conditions of those onboard are directly linked to the safety of fishers and the vessels. These issues are highlighted in this article.

This article consists of three broad sections. First, we introduce issues with fishing, safety and elements connected with working conditions. Second, we introduce examples in two countries of which one is developed and the other is a developing island nation, with a brief overview of how they manage their fisheries. Third, we discuss some salient governance issues with recommendations on how they may be addressed.

The Fishing Environment

The global fishing environment is characterized by a large number of fishers, increasing numbers and sizes of fishing boats, increasing levels of technological development on deep-sea fishing boats that include sophisticated fish identification and tracking techniques, growth in harvesting capacity, transfer at sea, and refrigeration of catch so that fishing vessels can stay on the water for quite long periods of time.

While large and deep-sea fishing vessels may be funded by venture capital or government subsidies, small boats have very low investment needs. Government subsidies, in a bid to provide employment, have lowered the barriers to entry and artificially increased the number of boats that are on the water in many parts of the world. This has led to higher levels of fishing than can be ecologically sustained. In turn, this has led to more desperate fishing operations as illustrated by the intensity seen in the Australian example, where government control regimes have shortened the seasonal fishing period in some sectors.

Depletion of Fish Stocks

Although there is good practice by responsible fishing vessel owners, the primary cause for the depletion of fish stocks is the race for fish by vast numbers of vessels throughout the world by companies financed by venture capital. They operate with little regard to size, number or species caught, while flouting national and international regulations. Plundering the exclusive economic zones (EEZs) and even coastal waters of many developing States, many low value fish are discarded dead. Most of these developing States do not have the resources to stop these activities and the United Nations (UN) agencies have lacked authority to take direct action against these and other violations that destroy fish stocks. Some countries are taking quite strong steps to protect their local fishing grounds from being exploited by fishing boats from other countries. Fishers are often arrested and their boats sometimes sunk or blown up to send a message to others who fish illegally in EEZs of coastal States. Other countries recognize the high numbers of their people employed in this industry and encourage them to extend their activities further out to sea as local stocks are depleted. In some parts of the world, coastal fisheries have been depleted by five to thirty percent of the stock that existed in the 1950s.[2] In some cases, fishers have moved from legal fishing to lucrative illegal trade in endangered species that command a much higher price in the informal market.[3] At the same time, some of the major fishing countries are developing their fishing fleets to have greater harvesting and holding capacities.

As this intense competition has led to stock depletions, unscrupulous owners have resorted to cutting costs and increasing fishing effort. Cutting costs includes employment of cheap migrant labor, disregarding safety and training, providing poor living conditions, and increasing effort by longer working hours and extended periods at sea. All of these factors have contributed, directly or indirectly, to a significant compromise in the safety of the crew and vessels. Due to the extreme poverty of many in some less developed countries, they are forced to work even under harsh, slave-like conditions.

> When a man is desperate for work, finds himself in a factory or on a fishing boat or in a field, working and toiling, for little or no pay, and beaten if he tries to escape—that is slavery.[4]

2 "Trawling for trouble. Why do Chinese fishermen keep getting arrested?" *The Economist* (October 31 2016), available online: <http://www.economist.com/news/asia/21697030-why-do-chinese-fishermen-keep-getting-arrested-trawling-trouble>.

3 "Corals in the South China Sea: A thousand cuts," *The Economist* (February 13, 2016), available online: <http://www.economist.com/news/international/21692869-greed-and-politics-are-destroying-some-asias-most-valuable-coral-reefs-thousand-cuts>.

4 B. Obama, Remarks by the President to the Clinton Global Initiative, 25 September 2012.

Statistics of Losses of Vessels and Crews

Statistics are available only for the total loss of vessels over 500 GRT; for the millions of small and medium-sized craft there are no official records. It is apparent from all the national statistics that are available, however, that, in every case, deaths of fishers far exceed those of all other occupations in the same country.[5]

There are differences in the casualty rates that are correlated with the origins of the fishers, with migrant fishers being at much greater risk than those working in their home country. For example, 75 percent of those dying (six out of eight) on U.K. fishing boats in 2008 were migrants from Eastern Europe or the Philippines. The Filipino death rate at 350 per 100,000 fishers per year is much higher than the U.K. death rate of 102 British nationals per 100,000 fishers per year.[6] On an international basis there is an often quoted number of 24,000 deaths per annum in world fishing. However, there is no sound basis for this figure because there are few reports from the majority of countries. Information on losses at sea may never get beyond the level of local communities. Meanwhile, illness as a result of working as a fisher is barely recognized even at this primary level and injuries are rarely even considered worth mentioning in small-scale fishing.[7] Table 17.1 shows fatality rates per year that are periodically available from different countries with adequate statistics.

Main Causes of Loss of Fishing Vessels and Crew

The variables behind accidents to fishing vessels and crews are interactive, but the main categories and causes can be summarized and exemplified as follows:

Weather and Open Decks

There is evidence in recent years of changes in weather conditions, most notably storm frequency and increasing wave heights, where increasing severity and wave heights have been seen in the North Atlantic and North Pacific Oceans respectively. According to Australian research that has given scientists their first global glimpse of the world's rising winds and waves, ocean wind speeds and wave heights around the world have increased significantly over the past quarter century.[8]

---

5 A. Couper, H.D. Smith and B. Ciceri, *Fishers and Plunderers: Theft, Slavery and Violence at Sea* (London: Pluto Press, 2015), p. 5.

6 P.M. Howard, "Sharing or appropriation? Share systems, class and commodity relations in Scottish fisheries," *Journal of Agrarian Change* 12, nos. 2 and 3 (2012): 311–343.

7 Couper et al., n. 5 above, p. 41.

8 B. Smith, "Scientists find waves are getting bigger," *The Sydney Morning Herald* (March 25, 2011), available online: <http://www.smh.com.au/environment/scientists-find-waves-are-getting-bigger-20110324-1c97e.html>.

TABLE 17.1 *International comparison of selected data of commercial fishing-related fatality statistics.*

Country	Scope	Year published	Study period	Fatalities	Population at risk	Fatality rate*/year
Canada	Newfoundland	1990	1975–1988	30	14,579 (trawlers)	206
New Zealand	National**	2002	1985–2000	105	63,040	167
South Africa	National	2003	1996–2002	198	122,180	162
United Kingdom	National	2004	1976–1995	527	440,355	120
United States	Alaska**	2001	1991–1998	167	140,000	119

* Fatality rates are per 100,000 workers

** Indicates fatality rates are based on full-time equivalents (FTEs)

SOURCE: M.J.S. WINDLE, "FISHING OCCUPATIONAL HEALTH AND SAFETY: A COMPARISON OF REGULATORY REGIMES AND SAFETY OUTCOMES IN SIX COUNTRIES," *MARINE POLICY* 32, NO. 4 (2008): 701–710.

Working on a vessel in both small-scale and commercial/distant-water fisheries inevitably means working amid a complex moving array of nets or lines, warps, winches and power blocks or line haulers, as well as catches of fresh fish that are still at least partly alive and moving. There is ample scope for being caught in the warps or even moving machinery, and for slipping on the deck. These dangers are amplified in bad weather when the vessel is pitching and/or rolling, with spray and breaking waves coming over the side, increasing the risk of being washed overboard.[9]

Overloading and Lack of Safety Culture

Injuries, deaths, and vessel and gear damage arising from economic pressures and overloading have been reported for a number of years. An example is the *Oyango 70*, which foundered because of an overload of catch. Some 51 crew pleaded with the skipper of the vessel to cut loose the 120 tonne catch load, but the captain, in his attempt to bring it aboard, caused the ship to roll and sink.[10]

9 Couper et al., n. 5 above, p. 30.

10 "Inquest told Korean fishing boat not watertight," TVNZ (April 17, 2012).

Although the crew wanted to cut away the gear, the captain could not face the likely consequences from the vessel owners if he authorized this, and chose to go down with the ship.[11]

On 10 October 2000, the São Tomé and Príncipe-flagged longliner *Amur* sank in sub-Antarctic waters off the Kerguelen Islands in the southern Indian Ocean. The vessel was known to be unseaworthy and most crew members had neither proper contracts nor insurance cover. The lifesaving equipment did not function and 14 of the crew of 40 drowned, unable to escape from cabins because the exit was blocked by extra bunks.[12] The lost crew included Koreans, Peruvians, Indonesians, Chileans, Spaniards and Danes.

Fatigue

A significant proportion of accidents to vessels can be traced to fatigue. Yea and Thio reported that Filipino and Indonesian crews were routinely punished if they were found resting during work time or if their work was not carried out quickly enough. The punishments were usually in the form of beatings (e.g., kicks, punches, and slaps) by either the captain or the officers. In a specific case, the captain drank heavily and would further abuse the men when he was drunk. It was difficult for the men to keep up with the pace of work required of them since the six hours rest they agreed to when they were recruited was not followed. In addition to physical abuse, fatigue from lack of sleep, and rotten or expired food served to them were the main complaints from the crew.[13]

Working and Living Conditions

Conditions of living, safety and wages are minimal in a hard and dangerous fishery. The International Labour Organization (ILO), citing numerous other authorities, reported that fishers have been forced to work 18–20 hours per day, seven days a week, in adverse weather conditions while operating hazardous machinery. Fishers may not rest for days when fishing grounds are reached. Accommodation can be inadequate, with reports of cramped living quarters without proper mattresses, blankets, ventilation and noise reduction. Hygienic standards are poor. Vessels may not have toilets and ablution facilities, and

11 Couper et al., n. 5 above, p. 32.

12 Environmental Justice Foundation (EJF), *All at Sea: The Abuse of Human Rights Aboard Illegal Fishing Vessels*, (London: EJF, 2010), p. 6, available online: <http://ejfoundation.org/sites/default/files/public/report-all%20at%20sea_0_1.pdf>.

13 S. Yea and S. Thio, *Troubled Waters: Trafficking of Filipino Men into the Long Haul Fishing Industry through Singapore*, (Singapore: Transient Works Count Too (TWC2), 2012), p. 47, available online: <http://twc2.org.sg/wp-content/uploads/2013/01/Troubled_waters_sallie_yea.pdf>.

fishers can be required to wash on deck in saltwater. In some instances food is scarce and fishers have had to survive on fish bait and rice, or rotten meat and vegetables. Freshwater can be also rationed.[14]

The International Transport Workers' Federation (ITF) targeted the "ruthless exploitation of migrant workers" in a statement concerning the death of 39 Burmese fishers onboard a Thai fishing fleet of six vessels. They had been left without fresh food and water for 75 days. It was alleged that the owner and captain had ordered their bodies to be thrown overboard.[15] In 2011, the *Insang No 1* sank with the loss of 22 fishers from Vietnam, Indonesia, and the Philippines. Only one of the Vietnamese fishers was compensated for by a Hanoi-based employment company. It emerged from an inquiry in New Zealand that there were no proper contracts and each of those who were lost had earned in three months only between US$270 and US$1,350.[16]

Poor and Inadequate Living Quarters

Poor living quarters have been documented by safety agencies such as the European Agency for Safety and Health at Work[17] and in marine accident reports by agencies such as the UK Marine Accident Investigation Branch.[18] Concerns with vessels include poor design, old or inadequately maintained boats, cramped workspaces and dangerous machinery. Human and operational factors are closely intertwined; most obviously these include long working hours with associated high levels of fatigue and the increasing incidence of fishers working alone at sea.

> Old and rusty, inside cargo hold and freezers take up most of the space, cabins for the crew are small without ventilation and space to move around, mess room for eating and recreation room non-existent, kitchen and pantries very dirty, water tank rusted, safety equipment such as

14 International Labour Office, Special Action Programme to Combat Forced Labour, Sectoral Activities Department, *Caught at Sea: Forced Labour and Trafficking in Fisheries*, (Geneva: ILO, 2013).

15 International Transport Workers' Federation (ITF), "ITF statement on horrific death of 39 Burmese fishers on Thai fleet," 2007, <http://www.itfseafarers.org/maritime_news.cfm/newsdetail/1268/region/1/section/0/order/1>.

16 J. Bowermaster, "Slaves on the seas: Global fishing fleets and human bondage," *Takepart* (January 10, 2011), <http://www.takepart.com/article/2011/01/10/slaves-seas-global-fishing-fleets-and-human-bondage>.

17 European Agency for Safety and Health at Work (EASHW), *Facts 38: Risk Assessment for Small Fishing Vessels* (Bilbao, Spain: EASHW, n.d.).

18 Quoted in Couper et al., n. 5 above, p. 34.

> radio, fire extinguishers, lifeboat or lifejackets are old and sometimes unusable.
>
> BRUNO CICERI[19]

Migrant and Child Labor with Little or No Pay

The only significant operating cost directly under the control of fishing companies is labor. In order to retain and increase profits with declining revenue, labor costs have been driven to the lowest possible levels. The methods of doing this have included reduced crewing, long hours, minimal food supplies, and, most of all, forcing into service untrained young men and boys from among the poorest people in poor countries.[20]

The differential in wages alone between countries and categories of worker is significant. For example, a fisher on a foreign vessel chartered in New Zealand is paid US$6,700–11,600 per annum, while under the New Zealand flag he would get US$60,000–80,000. In the United Kingdom, a deckhand on a trawler could expect to earn at least £25,000–35,000 per annum from working eight hours per day, seven days a week for 250 days at sea, whereas some Asian and fishers from flags of convenience (FOC) States would receive between US$5,000 and US$10,000 per annum for longer periods of work. In the UK instance, there are also overtime payments, leave pay and possibly catch bonuses, as well as social security advantages. In the second example there are normally no add-ons, only deductions covering job fees, travel and sometimes even items of food and provisions, and the contracts might not hold good in practice. The agreements made in relation to conditions onboard and work fall into two categories, verbal and written, but many are combinations of the two where it suits the employers.[21]

Taiwan is an important fishing nation with some 300,000 full-time fishers. It is a prime example of the implications of the globalization of fisheries. The distant-water sector is almost totally dependent on migrant crews from mainland China, Vietnam, the Philippines, and Indonesia, a proportion of whom arrive via Thailand and Singapore. Many of the ships are under FOC, including those of Honduras, Equatorial Guinea, and Panama. These vessels fish worldwide for many months and even years at a time, unloading their catches in Singapore, Mauritius, the Canary Islands, South Africa, and transshipment at sea to motherships mainly destined to Japan.[22]

---

19 Couper et al., n. 5 above, p. 139.

20 Id., p. 3.

21 "Fishing Industry," The *Maritimes: Magazine* of the Maritime Union of New Zealand, vol. 35 (Spring 2011), pp. 8–12, at p. 10.

22 L. I-chia, "Agency seeks to attract talent to fishing," *Taipei Times* (August 6, 2013), available online: <http://www.taipeitimes.com/News/Taiwan/archives/2013/08/06/2003569055>.

Thailand's recruitment of workers in the fishing sector remains largely based on informal processes that often lead to abuse and foster human trafficking. Many fishers are sold to fishing boat owners at a certain price per head, the *ka hua*—the cost charged by traffickers and paid by fishing boat representatives for trafficked fishers. A trafficked fisher must thereafter work to pay off the *ka hua* before being paid any wages. Depending on the amount of the *ka hua*, a trafficked fisher could be working from one month to as long as six to eight months before earning any retained wages. In some cases, depending on the predilection of the boat captain and/or owner, trafficked fishers are kept working on boats for years without pay.[23]

In September 2005, ten Indonesian fishers scaled the port company's security fence in Port Nelson, New Zealand, seeking protection from the abuse and inhumane conditions onboard the *Sky 75*, a Korean-registered fishing vessel over 30 years old. The crew complained of constant verbal and physical abuse and excessively long working hours. They had been fed bad food, with rotten meat and vegetables. They slept twelve to a cabin, had no blankets, and for washing were told to stand on deck and "shower" in the waves. There were no medical provisions onboard, or protective clothing, and the crew gave the example of one of their members who crushed his arm in some machinery and was told to carry on working without treatment. In addition to the indignity and discomfort of their working and living conditions, the crew had not been paid since joining the vessel in July 2005. Each had paid over US$600 to a Jakarta manning agent to secure their jobs.[24]

The Environmental Justice Foundation (EJF) study from Senegal reported that in fisheries transshipment operations, motherships, often freezer trawlers from Korea, took onboard pirogues (small boats) along with young fishers from Saint Louis to undertake line fishing for a period of three months in the maritime zones of Guinea, Sierra Leone, Gabon, Côte d'Ivoire and Angola before returning to Saint Louis after unloading the catch in the Canary Islands. EJF staff found Senegalese crew as young as fourteen aboard the *Marcia 707,* a South Korean-flagged support vessel, in Sierra Leone waters. When EJF officers boarded the ship they found a makeshift structure used to house up to 200 people, including children working as fishers in cramped and unsanitary conditions. The young boys told the officers about how they had been picked

23 International Organization for Migration (IOM), *Trafficking of Fishermen in Thailand* (Bangkok: IOM, 2011), p. 7, available online: <http://www.aidsdatahub.org/sites/default/files/publication/Trafficking_of_Fishermen_in_Thailand_2011.pdf>.

24 ITF, *Out of Sight, Out of Mind: Seafarers, Fishers and Human Rights*, (London: ITF, 2006), p. 23, available online: <http://www.itfseafarers.org/files/extranet/-1/2259/humanrights.pdf>.

up by the South Korean vessel in Senegal and were forced to work on the boat for three months at a time.[25] These fishers also included children who changed their date of birth on their identity cards to make them eligible for work. After fishing till midnight, fishers spent nights onboard the mother vessel in cramped sleeping facilities. They had poor quality food, inadequate drinking water, unhealthy living conditions onboard, and were denied medical treatment ashore at times when urgent attention was needed.[26]

Illegal, Unreported and Unregulated Fishing

Migrant fishers have also been exposed to risks from involvement in illegal, unreported and unregulated (IUU) fishing. This is on a colossal scale and it impacts fishers and fishing communities. Most of the IUU fishing in the Southern Ocean is financed by two or three international syndicates whose chartered vessels fish throughout the season and transship catches to reefers for processing and onward transport to markets. The ships operate mainly under an FOC and their crews are migrant fishers with skippers from South Korea, Russia, the United States, and Europe. IUU fishing accounts for lost revenue to the legitimate fishing industry of up to US$23.5 billion per year. In Africa, the losses are around US$1 billion, which is a huge sum for poor communities reliant on fishing revenues and a source of protein.

The beneficial owners of vessels regularly engaged in IUU fishing are likely to be untraceably hidden behind corporate veils. The fishing craft are often old and unseaworthy, although fitted with modern gear and usually registered under an FOC. With the exception of the skippers, the crews are generally drawn from poorer areas of low-income countries. The driving forces include combinations and permutations of greed of the owners, an oversupply of fishing vessels that is partly the result of government subsidies, scarcity of high-value fish because of overfishing, and either no or minimal punishments for owners, and the abandonment of crews if vessels are arrested.[27]

Reactions by Fishers to Conditions

Periodically, fishers, as well as jumping ship, engage in mutiny and sometimes murder at sea. In 2007, *Shengen 168* (58 GRT), which had a Taiwanese owner, captain and engineer, and an Indonesian crew, came under suspicion and was

25 K. Higginbottom, "Fishy business," *Seafarers' Bulletin* (*ITF*), no. 21 (2007): 18–19, available online: <http://www.itfseafarers.org/files/publications/3820/SB07En.pdf>.

26 D. Pepper, *Fishing the Coast: A Life on the Water* (Madeira Park, BC: Harbour Publishing, 2013).

27 Couper et al., n. 5 above, p. 79.

intercepted by an Indonesian navy patrol off Papua Province, Indonesia. They found eight Indonesians onboard and the body of the captain, but the three Taiwanese officers were missing. The Indonesian fishers were arrested under suspicion of mutiny and murder.[28]

In 2011, the seven Burmese crew (average age 25 years) of the Thai-owned *Supoporn* mutinied. The crew had been trafficked into service and some were on their first trip. The vessel avoided ports for over five months via transshipping at sea. The mutineers killed the Thai captain and chief engineer. They sailed the ship close to Phuket in Thailand with the intention of leaving the vessel at sea and swimming ashore. The engines failed farther offshore and while the ship was drifting the Thai Coastguard boarded the vessel. They found the galley was splattered with blood, but the bodies of the captain and chief engineer were not found.[29]

Reaction by Authorities to Illegal Fishing

Fishers have been arrested unfairly and treated badly when a vessel has been caught fishing or landing fish illegally. Many suffer years of detention. This is especially so when the vessels have been fishing in areas where there are disputes among States over territorial possessions. In these circumstances, all the contending countries use fishers as proxies in their ongoing disputes with other countries.[30]

Filipino handline fishers are frequently detained by Indonesian authorities for fishing illegally in Indonesian waters. Detention can last from two to six months. Workers interviewed who have been detained there in the past reported that the conditions in detention cells are poor, especially the food. While detained, they have no means of communicating with their families, and they are also unable to support their families financially. Handliners who had been released stated that this happened after they sought the help of the Philippine consul in Indonesia. At present, hundreds of Filipinos are still detained in Indonesian jails for illegal fishing.

---

28 Id., p. 170.

29 S. Tongder and N. Chisunkanokwat, "Rebellious crew chop cruel captain and ships engineer to death," *Phuket Wan Tourism News* (14 October 2011), available online: <http://phuketwan.com/tourism/phuket-mutiny-rebellious-crew-chop-cruel-captain-ships-engineer-death-14855/>.

30 B. Ciceri, "Fishermen, the forgotten seamen," *People on the Move*, no. 85 (April 2001); B. Ciceri, "In search of new standards and foreign fishers on board Taiwanese fishing vessels," paper for Far East ICMA Regional Conference, 7–11 March 2005.

Several fishers reported that they were not aware that their boat was fishing illegally in Indonesian waters until they were detained. Some reported that the boatowner assured them that the voyage would be legal (either through avoiding Indonesian waters or by registering legally) only to find out that they had been deceived.[31]

The treatment of these fishers can include detention without trial for a long period. For example, "[s]everal Myanmar fishermen spent over a year in a jail in India after they had accidentally drifted into Indian waters and were arrested. Charges were dropped against them."[32] These disputes are widespread and periodically result in the death of fishers.

Needs for Training and Enforcement of Regulations

On many vessels, lack of training, especially with respect to migrant crews working with foreign skippers, has safety implications. Apart from lack of knowledge and competence on the general working practices onboard and procedures in emergency situations such as fire onboard, operation of heavy machinery on open decks, especially in bad weather, has led to serious injuries and fishers even being swept overboard. According to some Taiwanese skippers, migrant fishers working on Taiwanese fishing vessels are not required to be trained in Taiwan, but rather the onus is on the recruiter to ensure they recruit trained crew.[33] It is doubtful that most are trained. In the case of the many that are trafficked and smuggled onboard, most have not even set foot onboard a boat prior to that, let alone having had training.

Enforcement of national and international laws is paramount to ensure the safety of fishers as well as that of the vessels. While some vessel owners in developed nations circumvent laws to employ foreign fishers sacrificing some of their rights and safety in the process, others in developing countries that have little restriction on such practices, forgo adequate maintenance of vessels and neglect proper treatment of fishers. Without enactment of relevant international laws and the enforcement in spirit of such and any available national instruments, the safety and security of fishers and vessels is seriously

31 Verité, "Research on Indicators of Forced Labour in the Supply Chain of Tuna in the Philippines," (Amherst, MA: Verité, n.d.), available online: <https://www.verite.org/sites/default/files/images/Research%20on%20Indicators%20of%20Forced%20Labor%20in%20the%20Philippines%20Tuna%20Sector__9.16.pdf>.

32 A. Kadfak, N. Bennett and R. Prugsamatz, *Scoping Study on Migrant Fishers and Transboundary Fishing in the Bay of Bengal*, BOBLME-2012-Ecology-03 (Phuket, Thailand: Bay of Bengal Large Marine Ecosystem Project (BOBLME), 2012), pp. 43–44.

33 A. Jaleel, Interviews with fishers and personal observations in Taiwan, April 2016.

compromised. In some countries, although the system is in place for the inspection and regular monitoring of fishing vessels and the training of crew, in reality there is a great shortfall in implementation.[34] Creating awareness and giving assistance to fishers on the various provisions to safeguard their safety and rights will help towards better enforcement and protection. Such instruments include the International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel (STCW-F),[35] the 2007 Work in Fishing Convention,[36] the International Convention on the Safety of Life at Sea (SOLAS),[37] the 1982 United Nations Convention on the Law of the Sea (UNCLOS), and many legal instruments of the Food and Agriculture Organization of the United Nations (FAO). Assistance and advice can be obtained through groups such as trade unions and seafarers' missions. However, the representatives of these bodies have no authority to board vessels. Therefore, what is essential is that the authorities of port States, flag States, and the fishers' home States monitor and enforce legal requirements on fishing vessels.

Regulating the Unseen

The issues of safety, training, and safe work have been recognized in the industry and administration for a long time. There are several national, regional and supra-national guidelines, norms and national laws in place. The United Nations, through the FAO, the ILO, the International Maritime Organization (IMO), and the World Health Organization (WHO), have worked to improve safety and health in this sector. The European Union has a framework for fishing safety for its member States. All these initiatives aim to achieve their effects through national and international regulation and control. The most recent instrument, the ILO's 2007 Work in Fishing Convention,[38] has been ratified by only ten countries, with Lithuania being the latest to do so in November 2016.[39]

---

34 A. Jaleel, Interviews with fishers and personal observations in Malaysia and Taiwan, April 2016.

35 International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel (STCW-F), adopted 7 July 1995; entered into force 29 September 2012.

36 Work in Fishing Convention, 2007 (No. 188), adopted at Geneva, 96th ILC session (14 June 2007).

37 International Convention for the Safety of Life at Sea, 1 November 1974 1184 *United Nations Treaty Series* 278 [SOLAS].

38 See Work in Fishing Convention, n. 36 above.

39 ILO, Ratifications of C188—Work in Fishing Convention, 2007 (No. 188), available online: <http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11300:0::NO::P11300_INSTRUMENT_ID:312333>.

The number of fishing vessels not registered under the IMO or FAO requirements could probably be in the millions. These are small craft, of less than 100 tons, that apart from not having an IMO number, may not even be registered. This makes it extremely hard to trace their activities and impose control. In addition, there are artisanal or subsistence fishing craft, not motorized, that sustain a very large number of fisher folk who are typically considered poor, local to where they fish, engaged in what they consider to be traditional or cultural practices and do not sell their catch in commercial quantities to others. In India alone, the artisanal or subsistence sector, which includes those who engage in fishing directly as well as those who are ashore engaged in sorting, drying and selling, is said to be in the region of five million people.[40]

While safety in the fishing industry remains a concern, there is a considerable body of work in the parallel world of shipping from which many lessons can be learned and applied, particularly in the areas of crew safety and well-being, flag State and port State control functions in support of maintaining international standards, training and education, addressing the use of drugs and alcohol in the workplace, working hours and fatigue issues, among a wide range of other issues.

Several countries are actively encouraging the growth of deep-sea fishing or the wild catch industry. The reasons for doing this include food security, maintaining employment, political needs of governments that wish to be seen as maintaining traditions, and justifying and growing a presence in different parts of the oceans to acquire commercial benefits. In many countries, fishing has taken on a romantic image of maritime folklore of resilience, living with the elements, physical toughness in a man's world, and disregard for rules but a high regard for being able to survive where no other support is available.

Developing and Developed Nations

While most of the developed countries have good fishery management regimes in place, some of them also have large deep-water fishing fleets that participate in large-scale harvesting of the high seas and coastal waters of other countries far from home. In this section, we provide examples of two countries, one developed (Australia) and one developing (Maldives), who display good fisheries management practices.

40 P. Chatterjee, Secretary of the National Fishworkers' Forum, at the National Tripartite Workshop on Work in Fishing Convention No. 188, World Forum for Fisher Peoples, Organized by the Government of India and ILO at Goa, 8–9 February 2013.

Example of a Developed Nation

In many countries, as local fish stocks have been depleted, governments have imposed quotas and limits on the fishing season as well as areas where fishing may take place. Australia, for example, has greatly increased the number of marine reserves in its EEZ. Australia is not a prominent fishing nation when compared to countries like Japan, Taiwan, China, Norway, or Spain, but it has a very strong record in integrated marine resource governance, management and control functions. It has an effective port and flag State control regime for fishing vessels and maintains extensive marine park and marine reserve areas, more than many other nations. The Great Barrier Reef Marine Park, one of several marine parks defined and managed by the country, remains an iconic example of diverse types of marine resource management. Its control of fishing vessels operating in its managed waters has been effective in limiting IUU operations. Australia effectively manages its safety responsibility on its domestic fishing vessels with investigations conducted when accidents are reported and the lessons shared across the industry.

Depleted stocks, coupled with the reduced fishing season that has been introduced by Australia to preserve marine stocks, has unfortunately led to more intensive operations to increase catch where and when fishing is allowed, which in turn leads to fatigue and continued work in extreme conditions. The requirement for voyage reporting by fishing operators has led to a fear of sharing knowledge of productive areas with competitors.

The Tasmanian fishing industry experiences some of the most extreme weather conditions in its operations in high southern latitudes. It can be expected that the incidence of operational injuries and near misses is high. However, direct data on this sector of the industry is scant. Safe Work Australia reports on the fishing industry in combination with agriculture and forestry.[41] This means that the statistics relating to one of the most dangerous occupations, consistently shown to be so by international reports, are subsumed within the two other most dangerous industries in Australia. In Tasmania, the fishing industry is under the jurisdiction of the *Workplace Health and Safety Act 1995*, as well as the *Marine and Safety Act 1997*. The location of the work, however, is remote and no observers exist to make independent reports. Any presence of alcohol or drugs to sustain this work escapes detection. These issues are of serious consequence to the industry. If reported, the costs of operations could rise through increases in insurance premiums and lost time. Indeed, if the nature

41 Safe Work Australia, "Agriculture, forestry and fishing statistics," available online: <http://www.safeworkaustralia.gov.au/sites/swa/statistics/industry/agriculture-forestry-fishing/pages/agriculture-forestry-fishing>.

of the work became too widely known, demand for the product may well suffer, as wool-producing sheep farmers in Australia have seen from the controversial animal husbandry practice of mulesing sheep.

In Australia, the tightening of the regulatory system and imposing of a licence system to fish have resulted in a reduction of the number of operational boats. These numbers are expected to continue to diminish as the industry does not attract new entrants through high financial barriers to entry as well as the nature of the work.

This is also an industry that is purely male on the water.[42] Any female participation is on shore. This construct leads to an industry culture that is quite unique. Fishers have always considered the possibility of inspection of their workplace as an intrusion into their professionalism. This is reflected in their attitude towards the use of personal protective equipment such as safety harnesses onboard, reflecting the perceived unique character of the industry as beyond the control of usual regulatory approaches, by those in it. In the study conducted by Huntir, fishers objected to the cost of flag State surveys as well as what they called the "unnecessary regime," the suitability of surveyors, and the value of external verification provided by the process. It is worth noting that the safety aspects of commercial shipping and recreational ocean yachting is well regulated. Pollnac and Poggie provide a good overview of personality traits of successful fishers.[43]

Example of a Developing Nation[44]

The Maldives provides a positive example of a developing nation because a large section of its working population is engaged in the fishing industry, its only commercially exported commodity is fish, and it is one of the few nations that practice totally selective fishing, while at the same time embracing the spirit of UNCLOS where its EEZ is not leased out, but utilized by its own fishing communities.

An artisanal or small-scale fishery is a form of fishery carried out by a vast number of fishing communities around the world. Because it is small scale and

42 A. Huntir, "Finders keepers: Exploring professional culture within the commercial fishing industry in Tasmania" (MBA diss., Australian Maritime College, Tasmania, 2005).

43 R. Pollnac and J. Poggie, "Happiness, well-being and psychocultural adaptation to the stresses associated with marine fishing," *Human Ecology Review* 15, no. 2 (2008): 194–200.

44 This section is based upon information provided by the Transport Authority of the Maldives, the Maldivian Coast Guard, one of the most experienced naval architects in the country and the personal knowledge and experiences of one of the authors. It is also substantiated by information from the Ministry of Fisheries and Agriculture of the Maldives.

often for subsistence or small community markets, safety is often in hindsight and it remains unregulated to a great extent. While the small craft are often rudimentary in build, with open decks and minimum safety equipment at best, they venture out to sea braving unpredictable conditions. The Maldives is a nation where most of its fishing fleet is involved in the small-scale fishery and most of its fish are caught by pole and line, and netting is prohibited.

A nation made up of over a thousand tiny coral islands with a population of less than 400,000, the people of the Maldives are heavily dependent on the sea for their livelihood. Fishing has always played a significant role in providing food and employment. Although it contributed about 25 percent of the national gross domestic product in the 1980s, due to the burgeoning tourism industry and the associated construction and other service industries, the contribution from fisheries has fallen to less than one-third of what it used to be.[45] The employment percentage in the industry still remains significant, although not to the levels prior to the 1980s. In 2007, about seven percent of the nationwide workforce were fishers while the figure stood at 11 percent outside the capital, Malé.[46] In 2013, there were 9,554 fishers in the country.[47] While most of the 200 or so inhabited islands have fishing boats in which men go fishing, the women play an active role in fish processing once the catch is brought home. Although some islands may have alternate means of inter-island transport, even today in many cases fishing boats play a significant role in the travel and transport of people and goods. As such, fishers and fishing boats have been and will continue to remain an integral part in the lives of the Maldivians. Therefore, the safety of these fishing boats is paramount not only from the perspective of fishers' safety, but also the general public.

From Sail to the Motorized Fishing Boat

Fishing boats called *mas dhoani* were traditionally built using timber from the coconut tree. These were very robust, yet heavy and the speeds with sails were relatively low, especially in calm weather. In the 1970s, the first fishing boat was mechanized. Since then almost all pole and line fishing vessels are now motorized, except for some vessels used in trolling (*vadhu dhoani*). The industry has also seen the development of traditional fishing boats. Over the years it has

45 A. Jaleel, "Maritime transport policy in the Republic of Maldives" (Ph.D. diss., Cardiff University, Wales, 2008).

46 Ministry of Finance and Treasury, Maldives, *Statistical Yearbook of Maldives 2014* (Malé: National Bureau of Statistics, 2014).

47 Ministry of Fisheries and Agriculture (MOFA), Maldives, *Basic Fishery Statistics, 2013* (Malé: MOFA, 2013), available online: <http://www.fishagri.gov.mv/images/publications/fisheries/2015/basic%20fisheries%20stat%20book%202013.pdf>.

FIGURES 17.1–17.3 *Traditional mas dhoani, 2nd generation mas dhoani and 3rd generation mas dhoani*
SOURCE: MINISTRY OF FISHERIES, AGRICULTURE AND MARINE RESOURCES, MALDIVES, 2005.

witnessed three major changes with respect to design and size that facilitated more crew and longer periods of operations at sea.[48]

The traditional *mas dhoani* had a small platform in the aft where fishers stood fishing with their poles (Figure 17.1). The second generation was larger and also had a transom aft where more than a dozen people could fish simultaneously (Figure 17.2). The third generation, which had lengths over 30 m, had also accommodation for the crew (Figure 17.3). This meant that these vessels could stay out at sea for longer periods while the previous vessels usually left their harbors early in the morning and returned the same day.

Ensuring Safety

Before any fishing vessel is built, a boat identification number has to be issued by the Transport Authority. This has to be accompanied by a registered boatbuilder's certificate. Only then can the building commence. However, no plans need to be submitted to the Transport Authority. Currently, regulations are being drawn up that would mandate such drawings be submitted prior to building any vessel.[49] The new regulations, which have not yet been gazetted, when translated read "Regulations for Maldivian maritime vessels, built in the Maldives (15 January 2016),"[50] categorize vessels into four main categories: (1) vessels below 8 m, (2) vessels between 8 m and less than 18 m, (3) vessels between 18 m and less than 30 m, and (4) vessels 30 m and above. Under these proposed regulations, vessels in category 1 can still be built without building plans, but must be built by or under the supervision of a registered boatbuilder or boatyard. Other categories need to be built by a registered naval architect

48 Jaleel, n. 45 above.

49 M. Saeeda, Vessel Registration Section, Transport Authority, Maldives, pers. comm., 19 April 2016.

50 Transport Authority, Regulations for Maldivian maritime vessels, built in the Maldives (15 January 2016). (Malé: Transport Authority, 2016) (not gazetted at the time of writing).

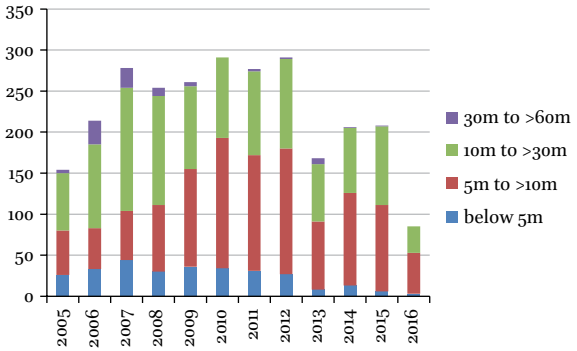

FIGURE 17.2
Number of additions to the fishing vessel registry (2005–2016)
Note: 2016 data is until 21 April 2016.
SOURCE: TRANSPORT AUTHORITY, MALDIVES.

TABLE 17.2 *Average number of vessels engaged in fishing per month in the Maldives, 2013.*

Mechanized mas dhoani	Sailing mas dhoani	Mechanized vadhu	Sailing vadhu	Row boat	EEZ fishing
768	1	17	7	13	7

SOURCE: MINISTRY OF FISHERIES AND AGRICULTURE, MALDIVES (MOFA), *BASIC FISHERY STATISTICS, 2013* (MOFA, 2013), AVAILABLE ONLINE: <HTTP://WWW.FISHAGRI.GOV.MV/IMAGES/PUBLICATIONS/FISHERIES/2015/BASIC%20FISHERIES%20STAT%20BOOK%202013.PDF>.

or boatyard. The second category needs regular reports by a registered naval architect or boatyard to be submitted to the Transport Authority during the construction period. Further, the requirements are more stringent for vessels over 18 m, with regular inspections, reports and the submission of naval architect or boatyard-approved drawings to the Transport Authority before commencement of building.

The Transport Authority maintains the vessel registry including those of fishing vessels. Figure 17.2 shows the number of newly registered vessels for fishing. The majority of vessels are between 5 and 30 meters.

The Ministry of Fisheries and Agriculture (MOFA) maintains a log of vessels that go fishing and also the details of the catch. This information is collected regularly by the island offices of each inhabited island. Table 17.2 is a snapshot of the average number and categories of vessels engaged in fishing per month in 2013.

The safety of maritime vessels, including fishing vessels is addressed by the gazetted regulation "Safety of vessels operating in Maldivian waters."[51] It

51 Transport Authority, Maldives, "Safety of vessels operating in Maldivian waters. Regulation number 2015/R-229," 28 December 2015.

addresses in detail, procedures for surveying of vessels for seaworthiness and stipulates that seaworthiness certificates may be issued to a vessel for up to a maximum of one year. Hence, each vessel has to be inspected at an interval of not more than one year. The regulation addresses all the safety equipment to be carried onboard and also the rules of the road. Surveys of fishing vessels are carried out by trained surveyors at a location requested by the vessel owner. It can be in the capital, Malé, or in any other inhabited island. The inspection would include the testing of engines, navigation equipment including lighting and communications, general condition of the hull, safety equipment including fire extinguishers and life jackets, and also the licence of the skipper. The renewal of the safety certificate is done after this procedure.

While the Transport Authority is the regulatory body and the implementation agency on issues relating to maritime safety, the Coast Guard plays a very active part in enforcement. The Maritime Rescue Coordination Centre of the Coast Guard provides search and rescue services to vessels in distress. According to the Coast Guard, most incidents are related to bad weather and grounding and hardly any fishers' lives have been lost while at work. Although a couple of fishing vessels broke up a couple of years ago due to poor construction, the causes have been identified and proposals made to ensure that this fault does not occur again.[52] As shown in Table 17.3, the Maritime Rescue Coordination Centre (MRCC) maintains a record of all incidents (fishing vessels and others) where its services have been rendered to vessels. They do not segregate the information for fishing vessels.

EEZ Fishery

Pole and line fishing is normally carried out within 100 nautical miles (M) of the coast and the longline fishery is only allowed in the EEZ, beyond 100 M of the coastal baselines. The vast majority of pole and line fishers will usually return to their island every evening to go out again the following morning. While foreign crews are not permitted in the coastal pole and line fishery, they may be employed in the longline EEZ fishery. EEZ licenses will only be given to local owners of vessels registered in the Maldives and to 100 percent Maldivian-owned partnerships.[53] Most of the longline EEZ fishery is carried out by third generation *mas dhoanis* (Figure 17.3), where the crew has sleeping quarters. In any case, these vessels do not generally stay out to sea for more than one week. While the longline EEZ fishery allows for the employment of foreign labor, locally built vessels are generally manned with a full local crew.

52 A. Wajeeh, Senior Naval Architect, Maldives, pers. comm., 2016.

53 *Law No: 2014/88-R/2. Regulation on longline fishery*, 20 November 2014 (Maldives).

TABLE 17.3 *MRCC reported and assisted cases (1 January 2015–31 December 2015).*

Nature of incident	Number of distress calls received	No of incidents, direct assistance rendered
Grounding	50	27
Mechanical problem	73	23
Accident (collision)	3	2
Maneuvering failure	9	3
Bilging/sinking	21	16
Capsize	4	3
Loss contact	33	4
Fire	2	1
Missing people	9	6
Missing people (diving)	2	2
Assistance to the ill	90	84
Others	27	15
Total	**323**	**186**

SOURCE: MALDIVES NATIONAL DEFENCE FORCE, INCIDENCES AND ASSISTANCE TABLE (MRCC, COAST GUARD, REPUBLIC OF MALDIVES, 2015).

Community Engagement

As pole and line fishing is still a community industry, almost always crew are picked from the same island community and they are free to leave whenever they want. No contracts are needed and they are paid in-kind or cash for the days they go fishing. This provides for a stress-free work schedule where fishers could just take days off as and when necessary to attend to personal matters. The issues of non-payment of wages, poor quality food, excessive working hours, and abuse and violence, which are experienced in many sectors of the fishing industry in the developing world, are unheard of in the Maldives.

The Maldives are considered to be a good example of a developing nation with a sound record in terms of flag State governance and safety. It has in place legal instruments to ensure safety standards of every vessel. Records of vessels, crew and catch are well-maintained, originating from the source—the islands—and collated at the ministry level. Implementation in terms of annual safety inspections are carried out throughout the nation. Every operator of a mechanized vessel, fishing or otherwise, irrespective of its size, has to take a written and practical test to verify competence in safety, basic engine mechanics, and vessel handling. The community complement of crew and the short

trips ensure a relatively stress-free working schedule and environment. The pole and line fishery is carried out wholly by local fishers. The Coast Guard provides search and rescue services and assistance to vessels in distress. There are no major accidents or reported deaths of fishers at work. Unlike larger countries, where the missing go unaccounted, in the Maldives, due to the dispersed small communities, a missing person will be noticed promptly and therefore if no one is missing or deaths are not reported, then there aren't any. While records show that there are incidents at sea, the prevailing good measures in place, the enforcement of regulations and good fishing practices, with a total ban on the use of nets, and short periods at sea, all contribute to the relative safety of fishers and fishing vessels in the Maldives.

The State and Compliance: The Importance of International Law

There are many examples of coastal State preferences toward licensing their EEZs to foreign fishers with ensuing hazards and impoverishment of the local people. This has led to non-compliance of international conventions at the government level and to inadequate controls against illegal fishing in the EEZ. This is not entirely due to a lack of international agreements, but more to non-ratification and inadequate compliance with agreements. The emphasis on this account turns on political compliance and enforcement. Respectively, Articles 91 and 94 of UNCLOS require each contracting State to maintain a "genuine link" between the vessel flying its flag and the State to "effectively exercise its jurisdiction and control in administrative, technical and social maters."

In commercial shipping, however, the practice of flagging out to escape unwelcome restrictions on trade or what may be considered onerous regulations has a long history. This allowed ships to trade where they would have been forbidden under national flag rules, or to circumvent blockades. Since the 1950s, the ITF has had an active campaign against flags of convenience. The coining of this term led to other terms being developed, such as "flags of non-compliance (FoNC)." FoNCs are flags that have consistently displayed non-compliance with their international treaty obligations.[54]

In the fishing context, there has been a proposal to capitalize on the use of flags that ensure compliance in economic terms. These flags have been termed "flags of integrity (FoI)" and the market approach is similar to that of organic food. The label of FoI is meant to indicate that the wild catch has been

54 Food and Agricultural Organization of the United Nations (FAO), *Expert Consultation on Flag State Performance* (Rome: FAO 2009).

harvested in compliance with all international treaties that promote acceptable social, environmental and harvesting norms. It is clearly a laudable objective, including by the International Seafood Sustainability Foundation (ISSF), to take a position opposite that of the FoNCs. However, as noted above, it has not progressed far as the 2007 Work in Fishing Convention has only nine signatories as of October 2016.

The issue of compliance is made more complex globally by the criteria set out for registering fishing vessels. The IMO, under SOLAS, requires all cargo vessels over 300 gross tons, or passenger vessels over 100 gross tons, to be registered. The database of all vessels that have unique IMO identity numbers is maintained by IHS *Fairplay*, which allocates these numbers to fishing vessels over 100 gross tons that voluntarily register and meet SOLAS requirements. The IMO number is the universal public identifier of that vessel, including for the automatic identification system (AIS) and for long range identification and tracking (LRIT) purposes. While those fishing vessels that register voluntarily can be expected to have both AIS and LRIT transponders, unregistered vessels may not have either or both of these devices, or may switch them off to suit their needs.

It should be noted that IMO Resolution A.600(15) does not apply to fishing vessels.[55] In 2013, the IMO adopted Resolution A.1078(28) to allow voluntary application of the IMO number scheme to fishing vessels of 100 gross tons and above.[56] It is estimated that in 2013 there were circa 26,000 fishing vessels with an IMO number globally. Because the system is voluntary, it is estimated that a more realistic estimate of the number of fishing boats over 100 gross tons globally is greater than 185,600.[57] A very large number of fishing vessels around the world have, therefore, no record of their registry, name or flag, including flag change. The lack of formal record keeping does not allow any tracking of the activities of fishing vessels or their onboard operations, including catch size and type, time and place of operations, records of safety and accidents onboard, interactions with other vessels, including refrigerated vessels that offload catch from fishing vessels, provide crew change, supplies, fuel

55 IMO, Ship Identification Number Scheme, IMO Resolution A.600(15), 19 November 1987, available online: <http://www.imo.org/blast/blastDataHelper.asp?data_id=22376&filename=A600(15).pdf>.

56 IMO, "IMO identification number schemes," available online: <http://www.imo.org/en/OurWork/MSAS/Pages/IMO-identification-number-scheme.aspx>.

57 FAO, *Technical Consultation to Identify a Structure and Strategy for the Development and Implementation of the Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels, Rome, Italy, 8–12 November 2010*, available online: <http://www.fao.org/docrep/meeting/019/k8959e.pdf>.

and stores in international waters, away from the scrutiny of any flag or port State. Instances of large fishing vessels operating within coastal waters of other countries, damaging artisanal fisheries through IUU fishing, changing identity regularly, transshipping and landing their catch in ports where enforcement of regulations is lax and continuing their trade unhindered are common.[58] Miller and Sumaila provide an insightful discussion on the topic of flag use behavior and IUU fishing.[59]

The management of sustainable wild catch fishing is a complex matter, and does not only deal with the issue of compliance and enforcement of rules. It also includes the element of inter-governmental negotiations, often between States among which negotiating power is not balanced. Distant water fishing nations (DWFNs), for example, can often negotiate with developing island and coastal countries for access to their fishing grounds with the inducement of development assistance aid.[60] In other cases, there are numerous instances where coastal waters are accessed with no negotiations or agreements with the knowledge that the coastal State has no capacity to respond to illegal access.

In a bid to conserve and manage migratory fish stocks in the oceans of the world, the United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (the UN Fish Stocks Agreement (FSA)) was opened for signature on 4 December 1995. One year later it had been signed by 59 States and entities and entered into force on 11 December 2001.[61] This

58 EJF, "Bringing fishing vessels out of the shadow. The urgent need for a global record of fishing vessels and a unique vessel identifier," 31 October 2016, available online: <http://ejfoundation.org/sites/default/files/public/EU_Global_Record_briefing_low-res-version_ok.pdf>.

59 D.D. Miller and U.R. Sumaila, "Flag use behavior and IUU activity within the international fishing fleet: Refining definitions and identifying areas of concern," *Marine Policy*, vol. 44 (February 2014): 204–211.

60 Q. Hanich, C. Schofield and P. Cozens, "Oceans of Opportunity? The Limits of Maritime Claims in the Western and Central Pacific Region," in Navigating Pacific Fisheries: Legal and Policy Trends in the Implementation of International Fisheries Instruments in the Western and Central Pacific Region, eds., Q. Hanich and M. Tsamenyi (Wollongong: ANCORS, 2009), 21–50, available online: <http://ancors.uow.edu.au/images/publications/Navigating%20Pacific%20Fisheries%20Ebook/Chapter_1_Navigating%20Pacific%20Fisheries.pdf>.

61 UN Division for Ocean Affairs and the Law of the Sea, "The United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (in force as from 11 December 2001)

Convention allows the boarding of ships and fishing vessels by a sub-regional or regional fisheries management organization (RFMO) for the purpose of ensuring compliance with conservation and management measures of migratory stocks, regardless of the country that these vessels are registered in. However, the issue of compliance and enforcement of rules remains elusive. The New Zealand Ministry of Primary Industries placed in the public domain a report on its findings from monitoring fishing vessel catch through video surveillance and placing observers on some vessels.[62] This report, released on 19 May 2016, states that four of the five vessels equipped with the observing capability "openly discarded substantial quantities of quota fish" without reporting it. There appears to have been an agreement reached between the government observers and the owners of the vessels that no prosecution will be initiated on the basis of what was observed. The issue of culture, both of the industry and the country, has influence on compliance.

Culture and Compliance with International Law

The approach to safety and health can vary in different parts of the world. The physiological needs are more immediate, before safety and security.[63] The culture of individualism that often drives personal achievement also works in the fishing industry to sustain a pioneer spirit of self-reliance and individual choice in an industry that is known to be a difficult working environment and in which everyone is expected to look after him/herself. Fishing people, working in a male-dominated world, take pride in being able to work with the elements of nature with little interference or support from anyone outside of their boats. The Advisory Committee for the Safety of Nuclear Installations defined safety culture of an organization as "the product of individual and group values, attitudes, competencies, and patterns of behaviour."[64] Individual and workforce involvement are seen to be the key components in the safety culture of any organization or (professional) group. In the resulting "collectivism,"

Overview," available online: <http://www.un.org/depts/los/convention_agreements/convention_overview_fish_stocks.htm>.

62 Ministry for Primary Industries, *Operation Achilles: Preliminary Investigation Report Dumping/Discarding.* (*Operation ACHILLES Preliminary investigation Report, 26 July 2013*), (Wellington, New Zealand: Ministry for Primary Industries, 2013), available online: <https://www.scribd.com/doc/313000058/MPI-Operation-Achilles-2>.

63 A.H. Maslow, "A theory of human motivation," *Psychological Review* 50, no. 4 (July 1943): 370–396.

64 D. Cooper, *Improving Safety Culture. A Practical Guide* (Hull: Applied Behavioural Sciences, 1998) p. 14, available online: <http://www.behavioural-safety.com/articles/Improving_safety_culture_a_practical_guide.pdf>.

individuals may not want to diverge from the established norms of behavior, including toward compliance with operational rules and safety regulations, if doing so would result in loss of standing among peers. This culture has been developed and supported over time, leading to a continuance of risk-taking behavior and breaking of rules.

Flag State control of ships and fishing vessels is known more for its failure than success. The reasons for this may be the same as they are in shipping, but they can also be unique. Some flags have actually supported their fishing fleets in illegal work, such as harvesting prohibited species or operating in EEZs of other countries to develop a perception of tradition. The result has been the emergence of other initiatives, such as RFMOs, port State control, surveillance, monitoring and control, and catch documentation as an alternative to enforce good governance in the pursuit of sustainable international fisheries. Some of these measures are pre-emptive in nature, while others are post-hoc. The outcome of all regulation is measured in its effectiveness. Of these, surveillance, monitoring and control through boarding fishing vessels on the high seas have been considered the most active. However, fishing vessels are highly mobile assets. Keeping track of their movements in the vastness of the ocean requires a wide range of capabilities and commitment of resources, which can evidently never be in sufficient supply to be present for every fishing vessel operating on the high seas, even for rich countries. Developing or least developed countries have no resources to implement their rights effectively in their EEZs or on the high seas.

The right to exclusive use of resources within territorial waters is a superb entitlement. Enforcing that right exclusively for their own fleets is an issue that is beyond the power of many States. The case of island States in the Pacific Ocean has long been known in this context. These small island States have taken the position of collectively negotiating with DWFNs. On the other hand, DWFNs often take the approach of not getting into joint negotiations, preferring to deal with each small country individually, clearly not working towards a level playing field.

RFMOs are a logical step to overcome some of the difficulties in enforcement in international waters and the example of countries in the Western and Central Pacific Ocean (WCPO) coming together is a good one. In this region, the major fishing fleets are from Japan, Korea, China, the United States, Indonesia, Papua New Guinea, and Taiwan.[65] The effectiveness of a well-planned

65 C.-L. Chen, "Realization of high seas enforcement by non-flag states in WCPFC: A signal for enhanced cooperative enforcement in fisheries management," *Marine Policy*, vol. 50 (2014): 162–170.

regime such as this is still measured in its implementation and action taken against violating units by the flag States on their own vessels. However, IUU fishing continues to happen, regardless of the region of the world, fishing vessel size and, in many cases, flag of the vessel. Flags that are considered responsible in shipping, for example, are sometimes seen to be supporting "fishing militia," harvesting protected species, fishing in marine reserves and artisanal areas of coastal States and destroying local fisheries, not following social and safety standards, or transshipping catch on the high seas to escape port State inspections.

The Need for Extensive Port State Control

The responsibility for port State control arises from port State jurisdiction, which is a territorial sovereignty. The concept of territorial sovereignty signifies that a State has an exclusive control over its own territory. When a ship or a fishing vessel enters a foreign port, it is within the territorial sovereignty of the coastal State and is subject to the same jurisdiction as an individual person who enters another country and is subject to the rules and laws of that country. The enforcement of port State jurisdiction allows a State to enforce its laws on the visiting ship, to prosecute ships, and to impose fines on them for violations of international rules and standards.

While port State control is well developed in the shipping industry, its activities in fishing are still evolving. To address the issues of IUU fishing, the FAO Committee on Fisheries developed an International Plan of Action. The IMO made a submission to the United Nations 56th session on the Oceans and the Law of the Sea that cooperation should be extended to the FAO to set up its own regime of port State control towards implementation of the FSA, and offered the IMO's experience and expertise in assistance. In advancing this initiative, the FAO approved the legally binding Port State Measures Agreement (PSMA) in 2009 under which port States would be required to deny entry, prohibit the landing of catch, and deny any services to vessels that have been engaged in and supported IUU fishing. However, the effectiveness of port State control compromises three key factors:

1. Many fishing vessels may be involved in IUU activities but are not on relevant IUU databases because they have not been apprehended or they are not recorded. This can be for a number of reasons, including flag hopping, changing identity and the lack of a unique IMO number for all fishing vessels, such as exists for merchant ships.
2. Port States do not always act on information received or do not take action against known IUU vessels, or report IUU vessels when they are discovered. States may benefit commercially from such trade, even in

contravention of their international obligations. This issue is not unique to IUU fishing by any means. Informal trades have existed for a long time in all parts of the world. Sometimes national law may not be suitably updated to allow port States to take any measures. Port States can lack measures to implement regulation through regional or national bureaucratic delays.

3. The highly mobile nature of fishing vessels allows them to move from one region of the world to another when regulatory and control measures are tightened. Several ports and regions of the world do not have available resources to expend on effective monitoring and protection of their EEZs from unlawful exploitation by foreign fishers.

The inconsistent application of port State control weakens its effectiveness. Many lessons can be learned from the experience of commercial shipping in this context. Port State control is a good tool, among many others, for governments to address the issue of IUU fishing. It can be very effective when properly implemented in concert with other controls.

One of the issues that port State control can have a real impact on, in addition to the identification and impeding of IUU fishing, is the matter of safety, referred to earlier in this article. In commercial shipping, port State control takes a close look at the inclusive seaworthiness of ships. Fishing-related port State control needs to mature its governance and operational practices to include effective intelligence sharing and national participation to bring about improvements in the global fishing industry.

Conclusion

This article has taken a wide-spectrum view of safety in the fishing industry, broadly encompassing the human and fisheries production elements. It is remarkable to note that an industry as ancient as fishing has been able to operate so much in its own culture, independent of international efforts to bring control and accountability to it. At the outset, we must recognize a large percentage of fishers who operate responsibly and fully within the requirements of their national laws and international conventions. There are others who chart their own courses. Operational traits in fishing, such as compliance with the rule of law in the context of personal safety and operations, which should be comparable to parallel industries such as commercial shipping and deep-sea pleasure yachting, are known more for pushing the boundaries of compliance, or actively practicing non-compliance. Even in countries known for the rule of law (e.g., the case of New Zealand cited above), non-compliance was fearlessly

displayed by the masters of the vessels that were being observed by video surveillance cameras.

The social aspects of some of the fishing world remain a matter of serious concern, particularly in the context of employment and work conditions. Abuse of crew on fishing vessels is an issue that remains a specific worry. The social benefits envisioned in the ILO's Work in Fishing Convention should also extend to smaller vessels, which are currently not covered by any international guidelines. The hesitation in ratifying this ILO convention by the major fishing flags of the world speaks volumes about the underlying issues in this sector.

Noteworthy efforts are continuously being made by the international community, including the FAO and the IMO, through several initiatives that are forward-looking, such as licencing and management guidelines, as well as post-hoc, such as recording and reporting catch, to sustain marine species. These efforts are balanced against dwindling stocks in many parts of the world, restrictions on catch quotas and seasons, licensing systems, flag State controls that have effectively failed, and port State control, which is effective in patches but not universally standard in application. Declared marine reserves in many parts of the world are simply ignored by commercial fishers who look solely for commercial return and know that many coastal States do not have the resources to stop them. Many governments have been buying back fishing licences to reduce the number of fishing boats. This has not been as effective as intended.

The greatest weaknesses in the system may be related to ineffective traceability of fishing vessels. Unless a regime such as the distinctive IMO vessel number is universally implemented, identity switching will remain easy. Even when offending boats are identified by RFMOs, follow-up in prosecution is left up to the flag State. Indeed, it is flag States that encourage their fishing fleets to operate in EEZ waters of other countries or tolerate, if not encourage, harvesting of protected species.

In order to improve the safety of people and vessels engaged in fishing, it is paramount that nations not only ratify the relevant international conventions, but also implement them in spirit. After UNCLOS came into force in 1994, the one piece of international legislation that is most comprehensive and encompassing in this respect is the 2007 Work in Fishing Convention. More nations need to ratify this convention in order for it to become mandatory on all States under the "no more favorable treatment" rule. This would pave the way for the port State control mechanism to bear on non-conforming vessels.

Finally, it must be recognized that demand creates the environment in which this industry operates. As long as demand for wild-caught seafood overrides the concern for its methods of production, and money is to be made in the process, the legal, environmental and social concerns will be disregarded. As long as there is demand for and acceptance of IUU catch, and its landing

and transport to markets through the network of port and flag State controls, the fact remains that such practices will continue to exist. This is as fundamental a truism as is the trade in tiger body parts or the ivory of many threatened species. This knowledge will continue to influence the behavior of adventurous fishers and their business capital backers.

Developments in communications and fishing vessel and cold storage technology have allowed fishing boats to stay at sea for extended periods and operate far from home. They conduct their operations and transship their catches in international waters out of sight of any State jurisdiction. The fundamental changes that are needed to provide transparency to this unfortunate trade are within reach and have been used in commercial shipping for quite some time. Key factors mentioned in this article that may be recalled include the following:

- Establishing an appropriate database of fishing vessels, preferably for 50 GRT or more, with a unique identity number issued to each vessel, like the IMO numbers issued to commercial ships. This will allow the tracking of fishing vessels, particularly those engaged in IUU fishing operations as they transfer from one region of the world to another.
- Fishing and processing vessels of 50 GRT and more, regardless of the misleading designations given to them like "research vessels," must be required to have and maintain continuously operational AISs so that their positions and activities can be tracked, including for search and rescue purposes.
- Using the existing experience in the IMO to develop fisheries port State control regime that effectively performs its functions in the areas of vessel and crew safety, compliance with regulations, and landing of illegal catch. This regime should extend to countries where the catch is landed and noncompliance with international norms must attract enforceable sanctions by the flag State in the first instance, but extend to other countries if the flag State does not act responsibly.

At the supranational level, the FAO must take effective steps to overcome malpractice by large fishing countries negotiating access rights with small island nations or least developed countries on a bilateral basis, often using the incentive of development assistance aid to overcome resistance. This has been seen to undermine the work of RFMOs and has led to overfishing of several migratory fish species. Negotiations between large fishing nations and small island countries or coastal least developed countries that do not have the capacity to enforce regulations in their waters must only be allowed through the respective RFMOs.