OUT OF SIGHT, OUT OF CONTROL

The global boom in destructive squid fishing

ENVIRONMENTAL JUSTICE FOUNDATION
Protecting People and Planet

ENVIRONMENTAL JUSTICE FOUNDATION

Protecting People and Planet

The Environmental Justice Foundation (EJF) exists to protect the natural world and defend our basic human right to a secure environment.

EJF works internationally to inform policy and drive systemic, durable reforms to protect our environment and defend human rights.
We investigate and expose abuses and support environmental defenders, Indigenous peoples, communities and independent journalists on the frontlines of environmental injustice.
Our campaigns aim to secure peaceful, equitable and sustainable futures.

EJF is committed to combating illegal, unreported, and unregulated (IUU) fishing as well as associated human rights abuses in the fishing sector.

Our investigators, researchers, filmmakers and campaigners work with grassroots partners and environmental defenders across the globe.

Our work to secure environmental justice aims to protect our global climate, ocean, forests, wetlands, wildlife and defend the fundamental human right to a secure natural environment, recognising that all other rights are contingent on this.

Registered charity no. 1088128
info@ejfoundation.org | ejfoundation.org

Acknowledgements

We extend our sincere thanks to the fishers and workers on distant-water squid vessels who shared their testimonies with EJF. This report would not exist without them. Their voices and the visual evidence they provided were vital to bringing these investigations to light and exposing the injustices that persist, out of sight, at sea.

EJF is grateful for the support of the Paul M. Angell Family Foundation.

PAUL M. ANGELL
FAMILY FOUNDATION

Cover picture © EJF

Printed on 100% recycled paper.

Contents

Executive summary 4
Key findings 6
Introduction 7
- The rising popularity of squid 9
- China's role in the global squid market 12
- Boom and bust cycles 15
- Governance vacuums in global squid fisheries 16
- Cause for concern across three of the world's most important squid fisheries 18

The current DWF regulatory landscape 20
- Flag state regulations 20
- RFMO governance gaps in the SEP and NWIO 25
- Key incoming global treaties and their potential impacts 29

Findings 31
- Size, dynamics and operating model of the three fisheries 31
- Prevalence of destructive fishing practices across the three squid fisheries 37

Prevalence of human rights abuses across the three squid fisheries – an industry built on exploitation 48
- Prevalence of fisheries and labour abuses across the three flag states 52

An opportunity for multilateral coordination 58
Market analysis, where does this squid all go? 59
- How squid enters the global seafood supply chain 59
- How high-risk products reach major consumer markets 63
- Import controls are hindered by structural weaknesses 65

Conclusion 66
Recommendations 68

Acronyms and abbreviations

ABMT - Area-based Management Tool
AIS - Automatic Identification System
BBNJ - Agreement on Marine Biological Diversity of Areas beyond National Jurisdiction, also known as the High Seas Treaty
BST - Basic Safety Training
CALAMASUR - Committee for the Sustainable Management of the Southern Pacific Jumbo Flying Squid
CDFA - China Distant Water Fisheries Association
CNFC - China National Fisheries Corporation
CMM - Conservation and management measure
COFI - FAO Committee on Fisheries
C188 - ILO Work in Fishing Convention No. 188
CPPS - Permanent Commission for the South Pacific
CPUE - Catch Per Unit Effort (Measured in kilograms of seafood caught per hour)
CTA - Cape Town Agreement
DWF - Distant water fishing
EIA - Environment impact assessment
EEZ - Exclusive Economic Zone
EJF - Environmental Justice Foundation
EU - European Union
FAO - Food and Agriculture Organisation of the United Nations
FIP - Fishery Improvement Project
FL - Forced Labour
GFW - Global Fishing Watch
ILO - International Labour Organization
IMO - International Maritime Organization
IORA - Indian Ocean Rim Association
IOTC - Indian Ocean Tuna Commission
IUU fishing - Illegal, unreported and unregulated (fishing)
MARA - The Ministry of Agriculture and Rural Affairs of the People's Republic of China
MCS - Monitoring, control and surveillance
MMSI - Maritime Mobile Service Identity
MPA - Marine Protected Area
NPFC - North Pacific Fisheries Commission
NWIO - Northwest Indian Ocean
NWP - Northwest Pacific Ocean
PSMA - Port State Measures Agreement
RFMO - Regional Fisheries Management Organisation
SEP - Southeast Pacific Ocean
SPRFMO - South Pacific Regional Fisheries Management Organisation
SWA - Southwest Atlantic Ocean
UK - United Kingdom
UN - United Nations
US - United States
VMS - Vessel Monitoring System
WCPFC - Western Central Pacific Fisheries Commission
WTO - World Trade Organization



Executive summary

A Chinese-flagged squid jigger photographed in the SWA in Spring 2025.

Unregulated squid fisheries provide the starkest examples from around the world of how the global seafood industry has underinvested in transparency and continues to fail in its efforts to regulate fisheries outside national jurisdictions. This report exposes a shocking catalogue of environmental and wildlife crimes alongside egregious human rights and labour abuses on board distant water fishing (DWF) squid vessels operating across the Northwest Indian Ocean, the Southeast Pacific, and the Southwest Atlantic — three fisheries that together supply 60% of the world's squid. All three of these fisheries sit in governance vacuums.

The investigative dataset that EJF has gathered over the last five years represents one of the largest interview-based investigations into conditions on DWF vessels ever conducted, with over 350 Indonesian fishers and 80 Filipino fishers interviewed about their experiences on 249 vessels. Their testimonies of shark finning[i], catching of vulnerable megafauna, physical abuse, and labour exploitation demonstrate pervasive and widespread non-compliance with flag-state and Regional Fisheries Management Organisation (RFMO) regulations, and indeed international standards.

China's squid fleet has naturally drawn much of the scrutiny, given its dominant presence on the high seas and the sheer scale of its fishing effort. EJF's interviews reveal systematically worse outcomes across Chinese vessels on virtually every measure - from violence and wage deprivation to shark finning and deaths at sea. Our findings show that China's operations have become dependent on maintaining an opaque status quo, with illegal fishing and labour abuses now entrenched as industry norms. This should be of utmost concern to all seafood buyers who purchase squid, given how deeply integrated China's squid supply is in the global market.

Our investigations also show how the operations of these DWF squid vessels are shielded by practices such as at-sea trans-shipment which was reported by 97% of interviewees. These transfers enable the laundering of illegally caught products into supply chains whilst perpetuating abuses through greatly extended fishing trips. EJF's findings show that the longer a vessel stays at sea, the worse the outcomes - the frequency of physical violence and shark finning climbed dramatically on vessels that stayed at sea for longer than one year.

[i] EJF defines shark finning as the practice of removing the fins from a shark—often while it is still alive—and discarding its body back into the ocean. See Appendix for full methodology.

Although EJF's findings paint a grim picture for the current state of global governance regimes for squid fisheries and unregulated fishing in general, there are obtainable pathways to a workable solution. This must start with flag states clearly acknowledging the dangers of continuing to operate DWF squid vessels in unregulated fisheries, and clear commitments by these states to move towards multilateral solutions to manage these ungoverned waters. Seafood buyers must also confront the unavoidable question of whether continuing to buy product from such fleets is worth the reputational risk, thereby pressuring DWF operators to take action.

Governments must also work through multilateral negotiations to address the underlying factors which prevent existing RFMOs and intergovernmental bodies from addressing the fundamental drivers of IUU fishing and labour abuses across the world's squid fisheries. Regional coalitions should be formed to pursue new area-based management tools or explore innovations through mechanisms like the High Seas Treaty (BBNJ), which entered into force in January 2026, or the Fisheries Subsidies Agreement, to pressure non-compliant fleets to change.

In parallel, governments must work to improve transparency across every level of global squid supply chains. Governments are urged to endorse and implement the low- or no-cost principles of the Global Charter for Fisheries Transparency as the most significant and substantive measure to address the secrecy and opacity of unregulated fishing as exposed by EJF investigations.

At the core of all three fisheries analysed in this report is an undeniable regulatory crisis. Decades of complacency, negligence, and underinvestment have allowed forced labour, environmental destruction, and systematic regulatory evasion to become entrenched across three major oceans. Until now, the distance between these vessels and the markets they supply has provided cover. This report aims to close that gap.

This is how the global squid fleet operates when no one is watching.



Lighting rigs on a Chinese-flagged light seiner operating in the Northwest Indian Ocean.

Key findings

- Squid caught from just three unregulated fisheries make up approximately 60% of the global supply. Despite this economic importance, the fisheries suffer from chronic neglect from flag states and an absence of meaningful multilateral efforts to improve oversight.
- EJF investigations reveal how governance vacuums across the Northwest Indian, Southwest Atlantic, and Southeast Pacific Oceans are fuelling rampant, destructive fishing[ii] and egregious human rights abuses.
- EJF interviewed over 430 fishers from Indonesia and the Philippines who had worked on 249 unique squid DWF vessels. 70% of these vessels were flagged to China, 16% to Taiwan, and 14% to South Korea.
- Fishers working on China's fleet described abuses that were consistently worse than on South Korean or Taiwanese-flagged vessels. 60% of Chinese vessels were alleged to have engaged in shark finning, 53% in the capture of vulnerable megafauna, and 18% in unauthorised fishing.
- Chinese vessel shark finning rates were 7x higher than Korean vessels and 3.4x higher than Taiwanese vessels.
- China's fleet also ranked the worst for living and working conditions on vessels, with over 92% of interviewees reporting at least seven indicators of forced labour during their time onboard. This compares with 82% for Taiwanese vessels and 16% for South Korean vessels.
- The Northwest Indian Ocean stands out as the most destructive fishing ground in the study. 62% of vessels conducted shark finning and 66% of vessels caught vulnerable megafauna including dolphins, turtles, and whale sharks.
- Light seiners in the Northwest Indian Ocean have also been discovered catching tens of tonnes of tuna a day, despite ostensibly targeting squid and not being registered with the relevant RFMO.
- The presence of forced labour forms a baseline for employment on DWF squid vessels, with 152 Chinese vessels (87% of our sample) having between 8 and 12 indicators of forced labour onboard.
- 25 deaths were reported on 20 vessels . All of these were flagged to China.
- At least nine deaths (36% of total deaths) were suspected to be due to beriberi - a disease caused by a severe deficiency in Thiamin (Vitamin B1) that was widespread on merchant and navy ships in the 1800s.[1]
- At-sea trans-shipment is now an almost ubiquitous fishing practice amongst squid vessels. 97% of 431 fishers told EJF that their vessels would trans-ship catch at sea rather than unload in port.
- Shark finning rates increased by 143% based on whether a vessel was at sea for less than six months or if it was at sea for 13-24 months. The capture of any vulnerable megafauna also increased by 140% under these parameters.
- Fishing trip length had the strongest relationship with the prevalence of labour abuses. Fishers who stayed at sea for more than 24 months recorded physical violence rates of 67% compared to 17% for trips lasting less than six months.
- Accuracy of FAO catch reporting for squid is getting worse, with the proportion of reported squid landings not tied to a specific species increasing from 25% in 2002 to 33% in 2023.[2]
- The number of Chinese-flagged reefers engaged in the at-sea trans-shipment of seafood has grown from 15 vessels in 2020 to 58 in 2025 – equal to a 287% increase.
- Between 2020 and 2024, China was the world's largest exporter of squid and cuttlefish, accounting for approximately 27% of global exports.[3]
- On the import side, the EU was the world's largest market for squid and cuttlefish in the same period, accounting for approximately 29% of global imports.

[ii] Please see Appendix for definition.



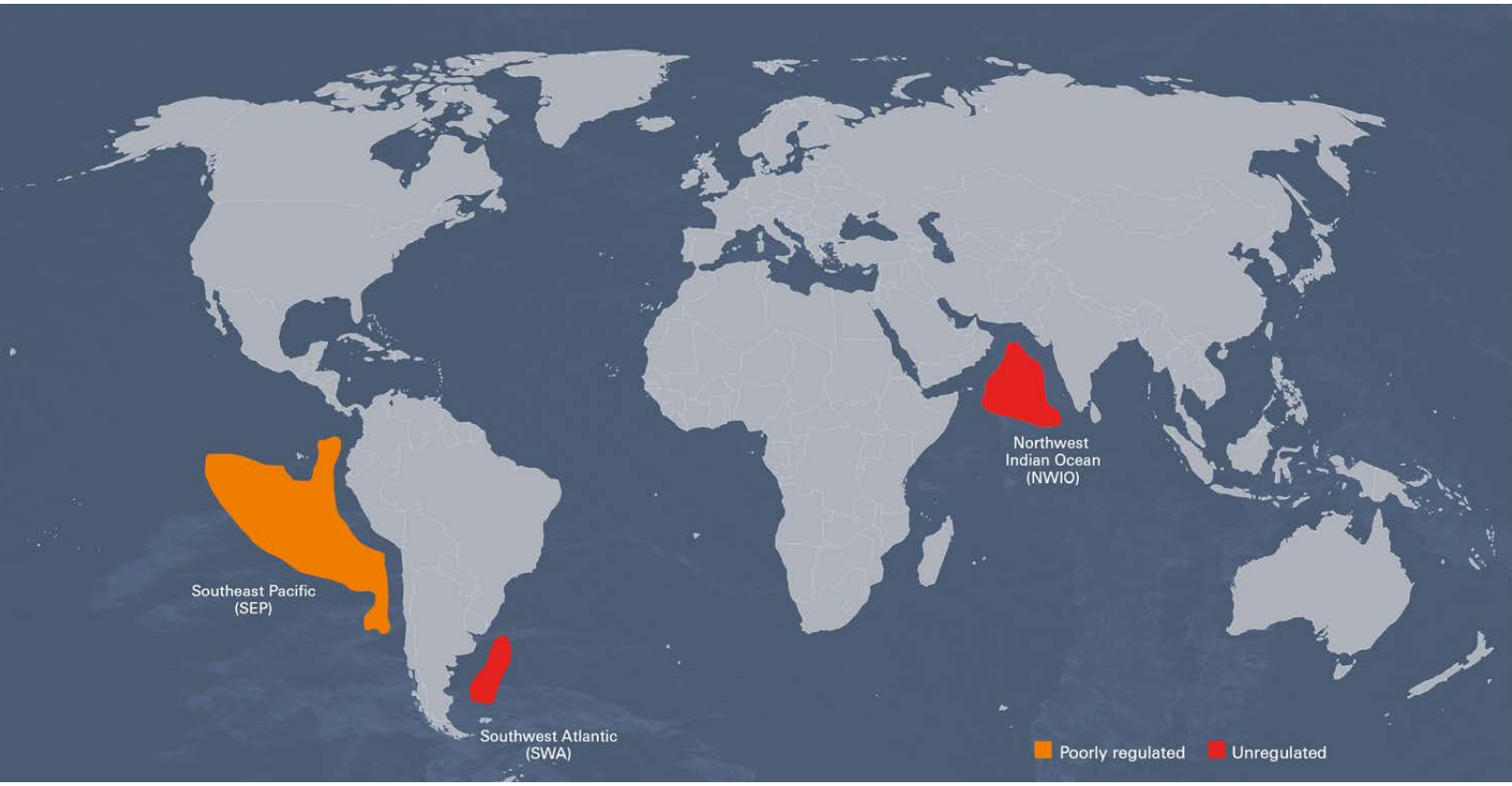
A Chinese-flagged trawler is seen operating in the SWA flanked by an Argentinian Coast Guard patrol vessel.

Introduction

Squid have moved, in less than a generation, from a regional speciality to a global commodity worth US$12.7 billion in 2025 and a projected US$18.4 billion by 2035.[4] In 2024, just six markets - the European Union, China, South Korea, Thailand, Malaysia, and the United States - between them imported squid and cuttlefish worth more than US$9 billion, accounting for roughly 70% of all global trade.[5]

Of the roughly 290 known squid species, only 30 to 40 have significant commercial value[6] and a small number of them - caught in just three principal ocean regions - account for the majority of the total global supply.

Unlike tuna, which is managed worldwide by a network of five major RFMOs with vessel registries, catch documentation schemes and observer programmes, squid sits almost entirely outside the regulatory architecture that governs comparable high-value pelagic fisheries.[7] Two of the three fisheries examined in this report have no RFMO with a mandate over squid; the third has an RFMO that has, more than a decade after its inception, failed to adopt a single conservation and management measure (CMM) for the species.[8] The result is a regulatory vacuum that the world's leading DWF flag states have moved decisively to exploit.



Map showing the three squid fisheries analysed in this report.

This report focuses on three fisheries that together supply approximately 60% of the global squid catch.[9] These are the Southwest Atlantic (SWA) where the Argentine shortfin squid (*Illex argentinus*) fishery alone accounts for around 14% of global squid landings; the Southeast Pacific (SEP), where the jumbo flying squid (*Dosidicus gigas* - hereafter referred to as the jumbo squid) fishery accounts for 42%; and the Northwest Indian Ocean (NWIO), where the purpleback flying squid (*Sthenoteuthis oualaniensis* - hereafter referred to as the purpleback squid) fishery has grown explosively over the past decade despite being almost entirely undocumented in official catch data.[10] All three fisheries operate in waters where no effective multilateral squid management regime exists, and all three are dominated by Chinese-flagged DWF vessels — with Taiwan and South Korea operating significant fleets in the SWA.

The UN Food and Agriculture Organisation (FAO) defines Unregulated fishing as either 1) "in the area of application of a relevant regional fisheries management organization that are conducted by vessels without nationality, or by those flying the flag of a State not party to that organization, or by a fishing entity, in a manner that is not consistent with or contravenes the conservation and management measures of that organization"; or 2) "*in areas or for fish stock in relation to which there are no applicable conservation or management measures and where such fishing activities are conducted in a manner inconsistent with State responsibilities for the conservation of living marine resources under international law*."[11] Both definitions are relevant to this report, but the second is the most directly applicable to the fleets' activities in the squid fisheries of the SWA, SEP, and NWIO.

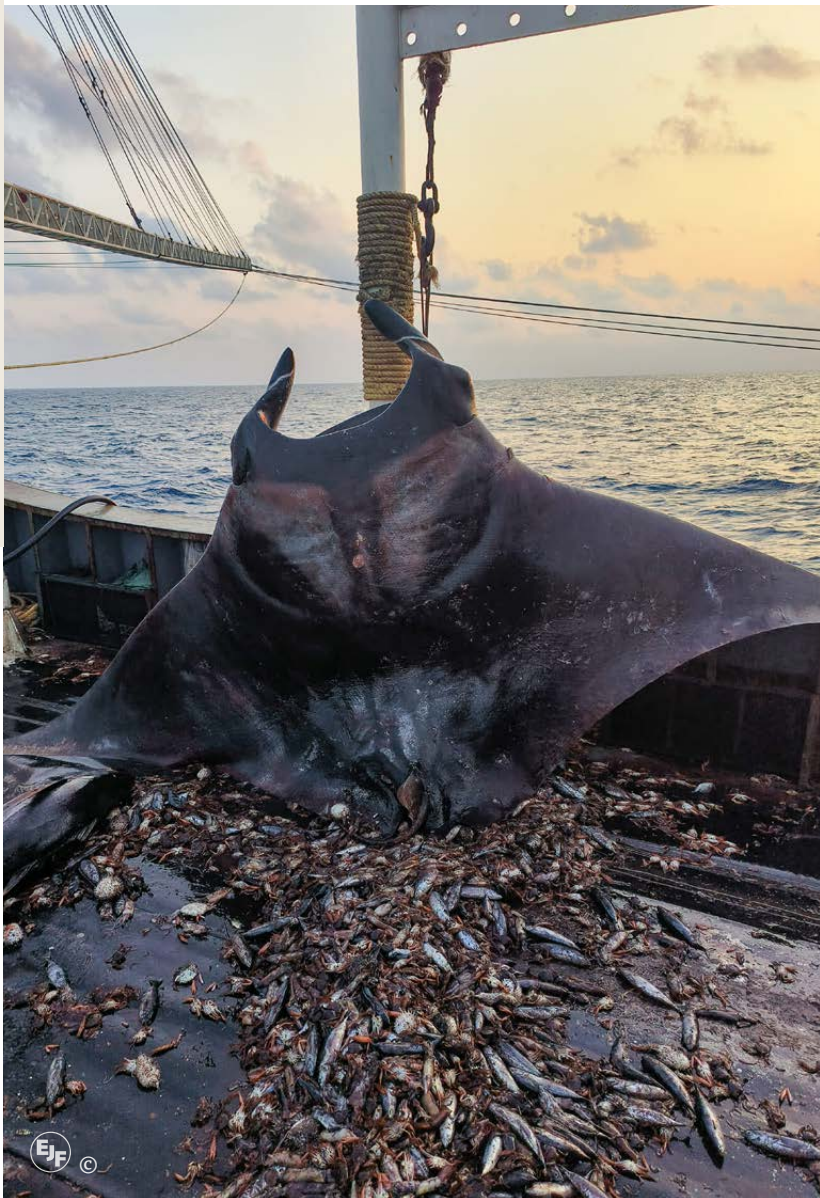
EJF's investigations from these three fisheries document the practical consequences of operating in unregulated waters: shark finning, the killing of dolphins, whale sharks, manta rays and sea turtles, large-scale unreported tuna bycatch, and a catalogue of forced labour indicators that include physical violence, debt bondage, document retention, and at least 25 deaths at sea (all on Chinese-flagged vessels). They demonstrate that fisheries without effective oversight at the flag state or multilateral level exhibit abusive practices more as operating norms rather than sporadic cases.

This report sets out the market and biological contexts driving the rapid expansion of global squid fishing; the regulatory landscape across the three principal flag states and RFMOs; new investigative findings from EJF's work in the NWIO; comparative analysis of fisheries and labour abuses across the three fisheries and three responsible flag states; the role of at-sea trans-shipment in sustaining and concealing these operations; and the multilateral pathways through which the governance vacuum could begin to be closed.

The report concludes with recommendations for national and multilateral action, centred on the endorsement and implementation of the Global Charter for Fisheries Transparency,[12] and outlines a multilateral avenue that coastal countries similarly affected by unregulated squid fishing on their doorsteps should substantively consider.

For the full methodology behind EJF's investigations, please consult the Appendix.

A large mobula ray - possibly a manta ray - caught by a Chinese-flagged light seiner operating in the NWIO.



The rising popularity of squid



Squid jigging gear at sunrise in the SWA.

A number of reasons have been theorised for why both fishing effort and market interest in cephalopods (squid, cuttlefish and octopus) have increased so markedly in recent years. One study found that the abundance of cephalopod species living both near the sea floor (demersal species) and in the open ocean (pelagic) has increased in the last 60 years.[13] This may be due to changing environmental conditions (increasing ocean temperatures, accelerating cephalopod lifecycles) and the gradual depletion of the larger predatory fish species — including tuna and tuna-like species — that prey on squid. Over 35% of global fish populations are now classified as overfished, with the proportion of overfished stocks rising by approximately 1% per year.[14] Researchers, as far back as 1998, had already begun to argue that this 'fishing down' of the trophic levels of marine ecosystems was creating ecological space for cephalopods and lower trophic level fish species to expand into.[15]

Fishing fleets have subsequently shifted their target species to squid, smaller invertebrates and fish species to maintain their catch volumes and profits.[16] Globally, this has translated into steadily increasing squid landings as recorded by the FAO's FishStatJ reporting system.[17] Landings increased from 2,314,386.75 tonnes in 2016 to 2,926,156 tonnes in 2023 (an increase of 26%). 10 species categories made up 98.6% of all squid landings in 2023. Of these, 41.9% were jumbo squid, 13.7% were Argentine shortfin squid, and 20.4% comprised various squid species not elsewhere included (NEI).

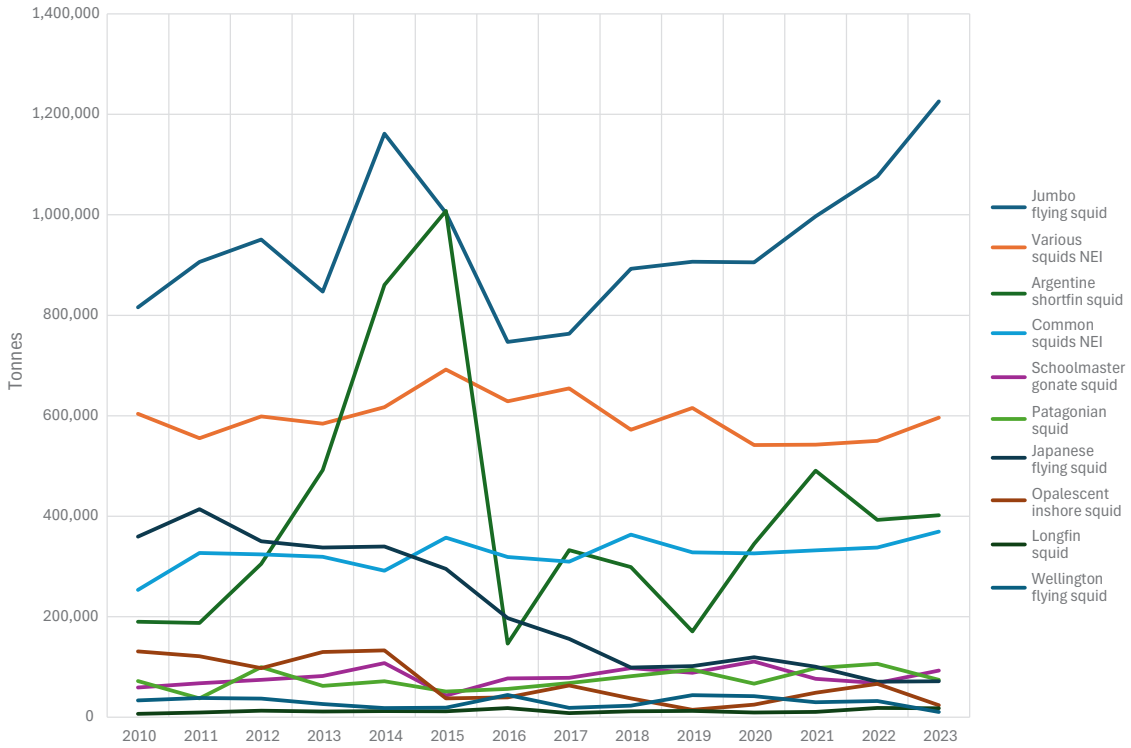


Figure 1: This chart shows the top 10 squid species and their reported landings between 2010 and 2023. The graph shows that two species - Jumbo flying squid and Argentine shortfin squid - experienced steep declines in 2015 and 2016, respectively.

The proportion of reported squid landings to the FAO classified as "not elsewhere included" has increased from 25% in 2002 to 33% in 2023.[18]

Despite the purpleback squid being a species of enormous economic importance in the NWIO and across the Indo-Pacific region, it does not have its own FAO species categorisation. Instead, it is aggregated under the broad category of "Various squid NEI (Not elsewhere included)".

This has been done in the past to ensure the most economically important squid species (Argentine shortfin squid and jumbo squid for example) are prioritised in terms of data collection. However, as fishing fleets have expanded and gone in search of new fishing grounds and species, the reclassification of previously aggregated species has not kept pace and has actually worsened. Back in 2002, the percentage of squid catch reported as "not elsewhere included" represented 25% of reported landings.[19] As of the most recent 2023 FAO data, this represents 33% of reported landings.



A dolphin lies dead amongst thousands of squid caught by a light seiner in the NWIO.

Table 1: Ten species categories made up 98.6% of all reported squid landings in 2023. Highlighted in green are the three species, DWF fleets and fisheries that EJF's investigation focuses on: jumbo squid (SEP), Argentine shortfin squid (SWA) and various squids NEI in the Western Indian Ocean (NWIO). The DWF fleets EJF investigates operate across these three fisheries alongside coastal-state fleets, which account for a substantial share of the remainder. Aggregating the catches of all flag states operating in each, the SEP, SWA and NWIO together account for approximately 60% of all reported global squid landings.

Main flag state	Squid species	FAO fishing area	Tonnes (2023)	% of total squid capture	% increase since 2016
Peru	Jumbo flying squid	Pacific, Southeast	621925.05	21.3%	92%
China	Jumbo flying squid	Pacific, Southeast	494,000	16.9%	121%
Chile	Jumbo flying squid	Pacific, Southeast	105,197	3.6%	-42%
Argentina	Argentine shortfin squid	Atlantic, Southwest	153,284	5.2%	156%
China	Argentine shortfin squid	Atlantic, Southwest	128,000	4.4%	86%
South Korea	Argentine shortfin squid	Atlantic, Southwest	52,165	1.8%	250%*
Taiwan	Argentine shortfin squid	Atlantic, Southwest	38,955	1.3%	203%
India	Various squids NEI	Indian Ocean, Western	101849.29	3.5%	4%
China	Various squids NEI	Indian Ocean, Western	41000	1.4%	219%*
Other flags	Various squids NEI	Multiple areas	453392.05	15.5%	-13%
Other flags	Argentine shortfin squid	Atlantic, Southwest	29255.86	1.0%	531%
Other flags	Jumbo flying squid	Pacific, Southeast	4669.36	0.2%	124%
Other flags	Other species (Common squid, etc)	Multiple areas	660161.37	22.6%	-12%
Grand total:			**2,926,156.12**	**-**	**26%**

* % increase stats for S. Korea (Argentine shortfin squid) are from 2017 because 2016 represented one of the largest collapses in overall Argentine shortfin squid landings. China (Various squids) figures are also from 2017 as China only started reporting landings from this fishery in 2017.

The global squid market is forecast to grow at a compound annual growth rate (CAGR) of 3.8% to 2035, reaching US$18.4 billion.[20] This is comparable to the growth forecasts for tuna; 3.2-3.5% ($57-61 billion market valuation by 2035)[21/22], canned sardines; 2.74% ($13.93 billion)[23], canned anchovies; 3.5% ($11.4 billion)[24] and slightly below mackerel; 5.31% ($17.45 billion).[25] Growing populations in low and middle income countries account for this increase in demand, alongside the globally trending health benefits of eating squid, which have low fat content, high protein, and are rich in omega-3 fatty acids, vitamin B12 and selenium.[26]

Table 2: Compound annual growth rates (CAGR) for squid from 2025 to 2035 for major markets.

Major market	CAGR (% from 2025 to 2035)[27]
China	5.1%
India	4.8%
Germany	4.4%
France	4.0%
UK	3.6%
EU	3.5%
USA	3.2%

Consumer trends in squid consumption around the world also show growing interest and appetite for squid products. Their growing popularity even led to *The New York Times* launching its aptly named 'Fried Calamari Index' in 2014 to map out the historical surge in interest for squid items on US restaurant menus.[28] By 2014, calamari featured on approximately 35% of restaurant menus in the US[29] and in parallel, demand has surged across the Asia Pacific region, which now accounts for approximately 61% of global squid consumption.[30/31]

The EU, China, Rep. of Korea, Thailand, Malaysia, and USA represented 70% of all squid & cuttlefish imports in 2024.[32]

China's role in the global squid market

China's distant water vessels now account for approximately 92% of all light-luring distant-water squid fishing effort observed on AIS and 33% of total global squid catch by volume.[33]

China is responsible for an estimated 50–70% of all squid caught in international waters.[34/35] China's vessels now account for approximately 92% of all light-luring distant-water squid fishing effort observed on AIS.[36]

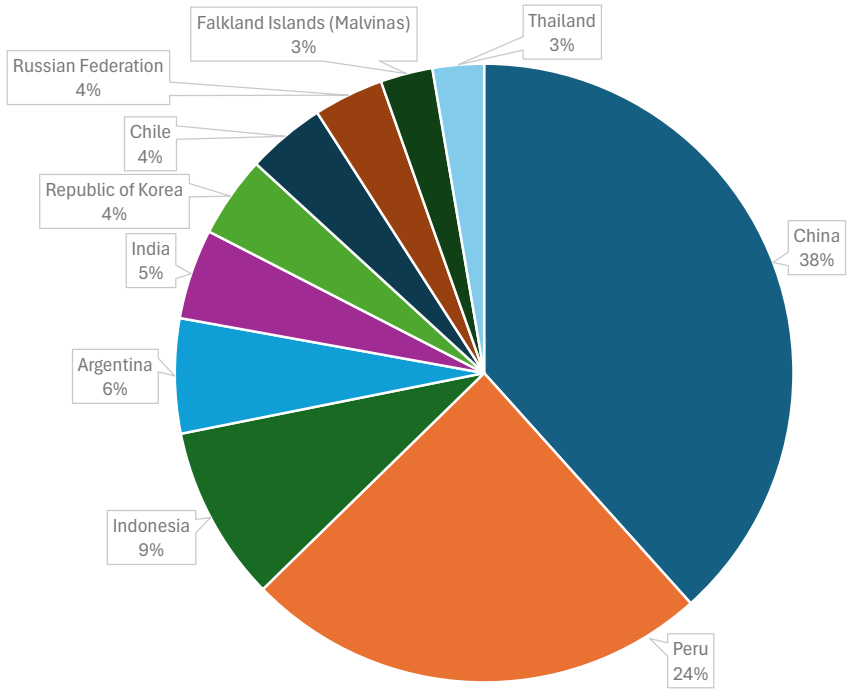


Figure 2: Top 10 most significant flag States for reported squid landings by tonnage (2023)



Fishers prepare the fishing gear on a squid jigger operating in the Southwest Atlantic.

While squid are a long-established ingredient in Chinese cuisine, this scale of operation reflects a different logic. Fisheries are treated as a component of a broader industrial strategy of state-led accumulation, with squid and other seafood regarded as raw materials to be transported back to China for processing and re-export.[37] Even as early as 2013, approximately 54% of China's DWF catches were being transported back to China, with much of this destined for re-export.[38]

Industrial squid fisheries deploy a range of gear types, but the dominant methods share three features: they operate at night, use high-powered artificial lights to aggregate squid at the surface, and harvest the catch with jigging machines, purse seine nets, or falling/dip nets.[39] These are collectively known as "light-luring methods" and the lights they generate are visible in satellite imagery from space.

The centrality of China to the global squid market is also visible in its emergence as the de facto price-setter for squid. The 'Distant Water Squid Index'[40] — launched in 2019 — publishes detailed pricing data for the major squid fisheries around the world, including the SWA, SEP, Northwest Pacific (NWP) and NWIO. The Index functions as the reference price for squid from these regions. It shows that squid prices have risen by an average of 57% since 2020 across these four fisheries, regardless of fishing ground or species.

According to China's 'Distant Water Squid Index', squid prices across four of the world's major squid fisheries have increased by an average of 57% since 2020.[41]

The implications of treating squid as a raw material for processing are significant for traceability. When squid is treated as an industrial input — destined for blending or mixing into seafood products or aquaculture feed — the supply chain can become so convoluted as to strip away the species, vessel and ocean of origin from any traceability mechanism. A peer-reviewed 2026 study of 198 squid products in Brussels and Milan found that 49% provided no meaningful information on species or catch location, while DNA testing showed mislabelling on between 13% and 30% of remaining products.[42]

Chinese processing technology has played a central role in this dynamic. Species - such as the purpleback squid from the NWIO - have historically been considered low-grade products with an overly sour, acidic taste and high naturally occurring formaldehyde that can result in a tougher texture.[43/44/45] These quality limitations meant that for decades, jumbo and purpleback squid were either rejected by premium markets or processed only into the lowest-value product categories.[46]

Sustained Chinese research has now substantially overcome these limitations. Researchers at Zhejiang University's Ocean Research Center in Zhoushan — China's primary squid processing hub — have developed methods to tenderise jumbo squid meat through ultrasonic treatment.[47] Researchers at Zhejiang Ocean University, also in Zhoushan, have developed methods suppress or remove formaldehyde from finished products[48/49] A Chinese patent (CN1788618A) titled "Method for controlling formaldehyde yield during squid processing" sets out the industrial application of these techniques.[50] The commercial significance of these processing advances is that they make previously rejected species commercially substitutable for higher-grade ones.



Trays of squid caught in the NWIO by a Chinese-flagged light seiner vessel.

This combination of Chinese fleet dominance, processing dominance, and price-tracking means that China's influence now extends across every key node of the global squid supply chain. China catches, processes, and publishes the reference price that the rest of the market trades against. For the consumer, the result is a near-total erosion of supply chain traceability. The dominance of Chinese flagged vessels in squid fisheries that are not effectively regulated means that end buyers have limited leverage over the vessels in their supply chain.

Boom and bust cycles



Two crew members posing with a jumbo squid on board. The vessel reportedly operated in the SEP and the SWA.

The speed at which squid grow and the rate at which they reproduce is unique among other commercially desirable seafood species. Most squid species may only live for one to two years and their reproductive and spawning cycles are highly susceptible to changes in their local environment.[51] For example, changes in ocean salinity, oxygen levels, temperature, or currents can affect breeding success.[52] When conditions are favourable, this can result in a population 'boom'. However, the converse can also be true, resulting in a population 'bust'. This has led some researchers to refer to squid as "rapid-response sentinels of environmental change".[53] This 'biological tempo' in response to natural environmental changes is part of the squid's versatility - reducing the number of individuals recruited or shrinking the size of individuals in response to less favourable conditions.

However, when this survival instinct interacts with industrialised squid fishing, it can result in undue pressure on squid populations. Overfishing makes surpassing the tipping point for population collapse easier.[54] This has already resulted in severe population collapses in a number of economically important squid fisheries, including the Northern shortfin squid fishery in the Northwestern Atlantic in the 1970s and 1980s and the Mexican jumbo squid fishery in the mid-2010s.[55/56/57]

These boom and bust cycles are reflected in global squid landings over the years with an almost 25% increase in landings in 2014 followed by a sharp decline of 35% in 2016.[58] The two main species - Argentine shortfin squid and jumbo squid - accounted for 69.1% and 20.8% respectively of the decline in 2016, illustrating just how influential these species are in terms of global squid landings.

Squid landings between 2015 and 2016 dropped by a historic 1.23 million tonnes with 69% of this attributed to declines in Argentine shortfin squid landings and 21% to declines in jumbo squid landings.[59]

The ramifications of these dramatic declines in landings extend beyond the obvious ecological impacts. In 2016 for example, the decline in catches also resulted in volatile squid prices around the world. Prices rose by 30% year on year in China whilst Argentine shortfin squid prices rose by 35% between January and June 2016.[60] The economic stakes for countries that depend on squid are high. Figures from the Falklands authorities have estimated that squid fisheries have accumulated a value of US$ 2.51 billion between 2014 and 2023, representing 36.6% of the archipelago's Gross Domestic Product (GDP).[61]

Decreased landings either due to reduced spawning or smaller squid individuals can also impact fishing vessel operations, forcing fishers to stay at sea and fish for longer periods of time to land the same amount of catch as before. This can increase working hours for crews, increase labour costs for operators and also increase the risks of operational accidents due to overworked crew. Artisanal fishers in Peru, for example, have reported that their fishing trips used to be as short as 1-3 days but are now commonly lasting over 5 days and sometimes reach more than 16 days.[62] This correlation between declining catches and worsening living and working conditions has been well established by EJF investigations across the world. These have consistently shown that fishers suffer both in terms of suppressed wages, longer hours and other forms of labour exploitation when fishing trips get longer and require increased effort.[63/64]



A light seiner vessel in the NWIO.

Comparing the SWA, SEP and NWIO fisheries from a purely economic standpoint is challenging because the fleets are structurally different. The SWA and SEP are dominated by industrial squid jiggers and Latin American artisanal fleets in Peru and Chile that target jumbo squid using jigging gears. The NWIO, by contrast, is dominated by Chinese-flagged light seiners - a high-intensity, indiscriminate gear type discussed in detail later in this report - alongside coastal Indian, Pakistani and Omani trawl fleets that operate much closer to shore and use less advanced gear.[65] The implications of these structural differences run through the comparative analysis in the rest of the report.

Governance vacuums in global squid fisheries

The continued absence of effective governance across the world's most commercially significant squid fisheries creates compounding risks for squid populations, the food security of coastal communities that depend on them, and the long-term stability of a market that is growing faster than the regulatory frameworks designed to oversee it. Multilateral efforts to regulate squid fisheries are far less evolved compared to other international fisheries agreements. This is due to the vast geographical areas involved, the relative economic importance of squid fisheries compared to tuna fisheries (which do enjoy a degree of international regulation through global coverage of RFMOs), and a dearth of scientific squid stock assessments, which are often the prerequisites to the very initial stages of multilateral agreements. These conditions have allowed governance vacuums to take hold across major squid fisheries that span both national and international waters.

Why unregulated fisheries fail and why regulation alone is not enough

High-seas fisheries present a particularly difficult governance challenge. No single state has exclusive rights over high-seas stocks, which means that operators have little incentive to curtail their own catch - anything one fleet leaves in the water may simply be taken by another. Research has found that the more countries share a common fishery resource, the greater the likelihood of that fishery becoming overfished and depleted.[66]

This situation is aggravated further by the boom and bust cycles of squid.[67] Fishing fleets may seek to take advantage of booms to maximise catches and profits, thereby accelerating overfishing and eventual population collapse.[68] In a similar vein, if operators know that a high seas squid population is on the decline they might choose to send out more boats each year in an effort to maximise resource extraction but inevitably leading to a vicious and self-reinforcing race to the bottom.[69]

Monitoring, control and surveillance efforts in high seas areas can also fall foul of their unregulated nature. Vessel operators may not be required by their flag state to activate their satellite tracking transponders (Automatic Identification System), have electronic monitoring systems installed or have human observers onboard. Vessels may also be able to get away with conducting catch transfers (through at-sea trans-shipments to collecting vessels or reefers) without any reporting or pre-authorisation requirement. Enforcement efforts on the high seas are costly, both in terms of fuel, resources, and time. There is often little incentive for any one country to patrol waters beyond their own jurisdiction unless there is some kind of multilateral agreement in place.

High seas areas by their very nature are remote (at least 200 nautical miles from any landmass) and so collective regulation, stock management, catch reporting, bycatch rules in these areas are all left up to the whims of the flag states operating in the area unless the area is governed by a RFMO. One study found where high seas regulation is increased (as is the case in the Northwest Pacific squid fishery), fishing pressure begins to flatten out and eventually turn static.[70] Conversely, in the case of the NWIO and SEP (two unregulated fisheries), fishing pressure has continued to increase.

It would be a mistake, however, to infer that RFMO management of high seas areas results in good governance. The existence of an RFMO can help in advancing science-based stock management[71], but it is not by itself sufficient to prevent overfishing, destructive fishing or labour abuses. EJF investigations across the world's 'regulated' tuna fisheries regularly discover egregious cases of IUU fishing or forced labour.[72/73]

The best solution that flag, coastal, port and market states have towards tackling the vast data gaps in unregulated high seas squid fisheries is therefore through improving the *measurement* and *understanding* of what is happening on the water itself. This can be done by endorsing and implementing transparency mechanisms - such as those at the core of the Global Charter for Fisheries Transparency[74] - throughout fishing operations and supply chains. By mandating vessels switch on their vessel tracking systems, share catch and bycatch statistics, and declare trans-shipments, nations can take the first steps towards understanding the impact that fishing activities have on a population.[75]

Cause for concern across three of the world's most important squid fisheries

Argentine shortfin squid made up approximately 77% of all seafood species (by tonnage) caught through unregulated fishing between 2014 and 2023.[76]

The world's three most commercially significant squid fisheries — the NWIO, SWA and SEP — are each grappling with a distinct set of challenges as industrial fishing operations have expanded rapidly while regulation has failed to keep pace. EJF's recent investigations have additionally documented persistent forced labour, destructive fishing practices and deliberate opacity across all three.

Southwest Atlantic: A FAO paper published in the run-up to a FAO Committee on Fisheries (COFI) Subcommittee meeting in Reykjavik, Iceland in February 2026 found the Argentine shortfin squid (contributing 16% of the world's squid catches) to be by far the most fished seafood species "outside the competence of an RFMO or arrangement" - otherwise known as unregulated fishing.[77] The main FAO fishing area for the species - FAO 41 - is also highly significant, contributing 94.6% of estimated unregulated global



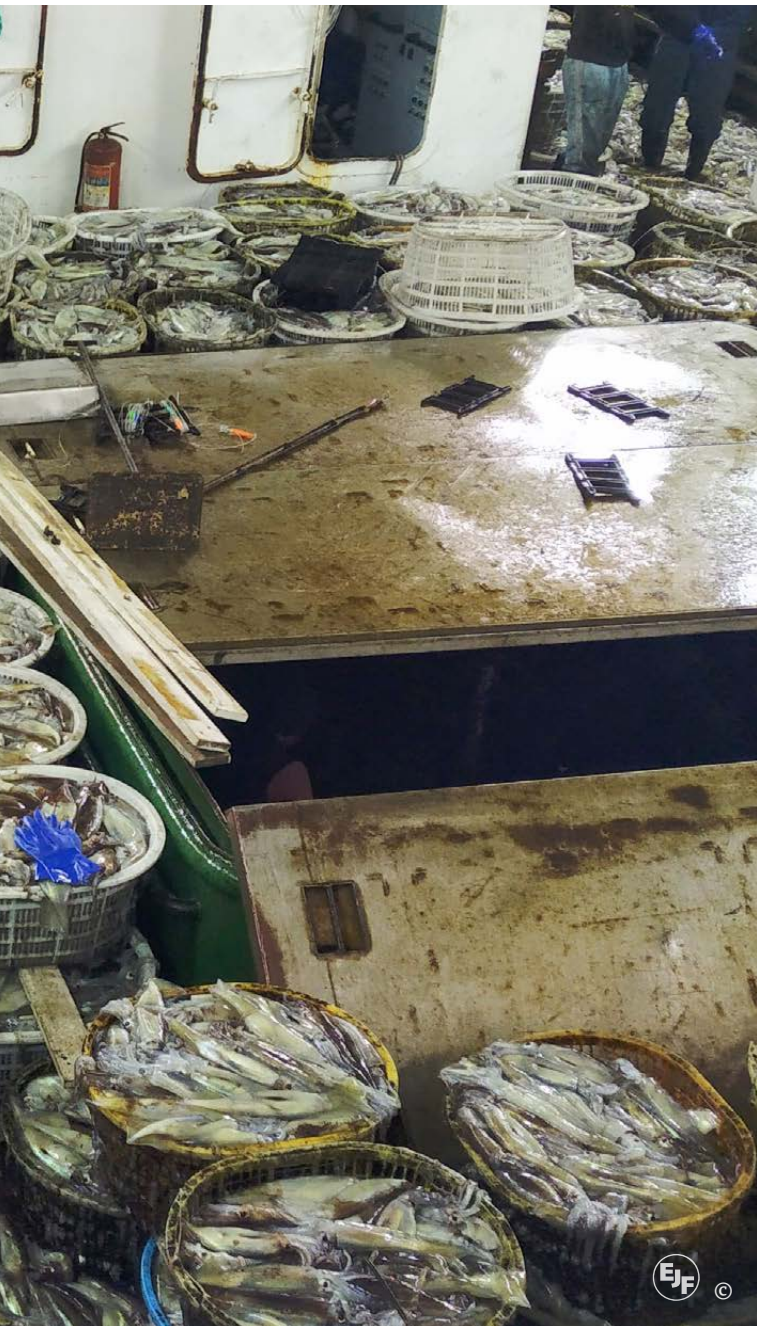
Argentine shortfin squid litter the deck of a squid jigger reportedly operating in the SEP and SWA.

seafood catches by weight. Coupled with this is the fact that these unregulated waters are fished by a predominantly Chinese-flagged, highly efficient, and opaque fishing fleet.

EJF's September 2025 report, *'Bright Lights, Dim Prospects'*[78] uncovered how the current lack of regulation has enabled DWF vessels in the SWA to engage in other destructive fishing practices such as shark finning and the catching and killing of vulnerable megafauna such as seals.

"There are few known fisheries operating in the high seas outside any RFMO's competence. The most important ones are the Argentine shortfin squid... and the purpleback flying squid."

FAO sub-committee on fisheries management paper.[79]



Northwest Indian Ocean: The same FAO subcommittee paper also highlighted another squid fishery but for a very different reason - that of the purpleback squid. This species is predominantly caught in fishing area FAO 51[iii]; however, as the FAO acknowledges, the fishery does not appear in any official FAO catch data making monitoring and regulation even more difficult.[80] The species is instead merged under the broad categorisation of "Various squid NEI". This is despite the species being considered one of the most abundant squid species in the tropical and subtropical Indo-Pacific region. The total species instantaneous biomass is estimated to be around 8 to 11.2 million tonnes with 3 - 4.2 million tonnes in the Indian Ocean and 5 - 7 million tonnes in the Pacific Ocean.[81] This opacity obscures our understanding of the true scale of the NWIO purpleback squid fishery.

"A fishery for purpleback flying squid... has been developed during the last decade in this region [NWIO], although catches in the fishery are not yet being reported to FAO."

FAO sub-committee on fisheries management paper.[82]

Southeast Pacific: The jumbo squid fishery in the SEP has been referred to as both an unregulated[83] and a poorly regulated fishery.[84] The fishery falls within the area of competence of the South Pacific Regional Fisheries Management Organisation (SPRFMO), but more than a decade on from SPRFMO's entry into force, no fishing effort limits and no total allowable catches have been agreed for squid.[85] This is despite the jumbo squid being the most important squid species traded and consumed around the world, accounting for 42% of global squid landings in 2023.[86]

EJF's February 2026 'Unseen and Unaccountable' report exposed just how serious the situation is on squid jiggers in the SEP.[87] 2025 country reports submitted to the SPRFMO already provide indications that the jumbo squid population in the SEP is suffering from overfishing.[88/89]

[iii] Known as the Arabian Sea but referred to in this report as the Northwest Indian Ocean (NWIO).

The current DWF regulatory landscape

Flag state regulations



China's lack of substantive fisheries regulations means there are few disincentives to engage in destructive fishing practices (Chinese squid jigger operating in the SEP and SWA).

China's dominance of global distant-water squid fishing effort is the unavoidable starting point for any serious analysis of this sector. That dominance has not, however, translated into flag-state regulations remotely adequate to prevent destructive fishing or labour abuses at sea. Taiwan and South Korea are also examined in this report, both because their fleets are directly implicated in EJF's findings and because the regulatory choices they have made - and are continuing to make - offer a meaningful point of comparison with China's approach, and in some respects a model for what reform could look like.

***"EJF:** Aside from sharks, did your vessel ever catch dolphins, turtles, or false killer whales? **Fisher:** Never, but we did catch a seal. **EJF:** What was done to it? **Fisher:** For seal, if I'm not mistaken, its teeth were taken. **EJF:** So, its teeth were taken? **Fisher:** Yes, its teeth. Sometimes, they (the Chinese) cut it open, and its liver was eaten. **EJF:** Did that often happen? **Fisher:** Just once, if I'm not mistaken. **EJF:** Who did that? **Fisher:** The vice-bosun and the Chinese crew members."*

Interview with an Indonesian fisher working on a Chinese squid vessel, July 2022.

Table 3: Status of regulations in place to deter and prosecute destructive or illegal fishing practices in the three major flag states.

Destructive/illegal fishing practices reported through EJF investigations	Regulations in place to deter and prosecute infractions in…		
	China[90/91]	South Korea[92/93]	Taiwan[94]
Shark finning	X	X (Follow RFMO rules)*	✓[iv]
Harming and killing cetaceans	X	✓	✓
Harming and killing seals	X	✓	✓[v]
Harming and killing turtles	X	X (Follow RFMO rules)*	✓
Harming and killing seabirds	X	X (Follow RFMO rules)*	✓
Tampering/covering vessel name or markings	✓	✓	✓
Fishing in unauthorised areas	✓	✓	✓

* South Korea does not have domestic flag-state regulations directly prohibiting these destructive fishing practices on the high seas. The country instead relies on RFMO measures and coastal state regulations, where these apply. They are marked X here because Korean vessels in this dataset operate in both the high seas of the SWA and the Falklands EEZ. The Falklands EEZ has its own regulations, but our data does not allow us to determine where the destructive fishing documented in this report took place. The X reflects the fact that at least some of it occurred on the high seas, where no RFMO has competence and no rules apply.

[iv] According to Taiwan's Regulations for Fishing Vessels Conducting Squid Jigging Fishery, all squid fishing vessels are prohibited from catching sharks. As for other fisheries, the regulations mostly follow the RFMO rules.

[v] According to the Act on Wildlife Conservation, certain species, including Arctocephalus spp., Mirounga leonine, Monachus spp., Dugong dugon, Trichechus inunguis, Trichechus manatus, and Trichechus senegalensis, are protected species; harming or killing them is not allowed.



Crew dissect and fin a shark onboard a Chinese-flagged light seiner vessel operating in the NWIO.

| CHINA

China regulates its DWF squid fleet through a patchwork of non-binding "red titled documents" (红头文件) layered over primary legislation that defines IUU fishing too narrowly to capture the conduct documented in this report.

The Fisheries Law of the People's Republic of China[95] and the Distant Water Fishery Management Regulation[96] are the principal pieces of legislation governing China's DWF operations on the high seas. However, as documented in EJF's previous reports, the resulting regulatory framework is inadequate and lacks coordination.[97]

Recognising the insufficiency of its regulations, the Chinese government has issued a series of non-binding regulatory documents targeting its high seas fleets. These have been designed to demarcate buffer zones with adjacent coastal states,[98] control the number of fishing vessels in each squid fishing ground in 2022[99] and introduce the annual squid moratorium trials from 2020 to 2023.[100] However, these regulatory documents (nicknamed 'red titled documents' (红头文件), published by administrative departments, are not legally binding[101] and in the context of high seas fishing, often lack financial penalties or punitive sanctions. None of them specify conservation measures to deter or prevent destructive fishing practices such as shark finning or killing of marine megafauna.



A screen grab from a video taken in September 2023, showing a Chinese-flagged squid jigger, which reportedly operated in the SEP.

Furthermore, Article 39 (4) of the Regulation bans 'fishing using gear or methods prohibited by the coastal state or a RFMO with jurisdiction, or fishing for species, precious or endangered aquatic wildlife or other marine organisms prohibited by the coastal state or an RFMO with jurisdiction'. Following this, China's Ministry of Agriculture and Rural Affairs (MARA) again published a series of regulatory documents targeting DWF tuna fisheries. These addressed compliance with tuna RFMO measures on vessel registration and bycatch reporting and mitigation.[102/103] However, China's high seas squid fisheries operate outside the competence of any tuna RFMO and thus these regulatory documents do not apply. This highlights the limitations of China's current regulatory framework in tackling destructive fishing in high seas squid fisheries.

In August 2025, China announced a new "Shanghai Proposal for the Sustainable Development of Global Squid Fisheries".[104/105] No public version of this Proposal has been released since its announcement. This raises serious concerns for accountability and transparency regarding commitments with real consequences for global squid populations. A leaked version of the Proposal, obtained by EJF, references the need to "establish new regional fisheries management organisations in international waters where currently there are none (e.g., the South West Atlantic".[106] Such a statement, if operationalised, could represent a meaningful step towards multilateral governance.

Since 2020, China has introduced a series of voluntary seasonal closures across three of its main squid fishing grounds — the Southwest Atlantic, Eastern Pacific, and Northwest Indian Ocean — presenting these moratoria as evidence of its commitment to the sustainable management of global squid populations.[107] The closures were announced unilaterally by China's MARA, without consultation with coastal states or the RFMOs responsible for adjacent fisheries, and with no independent verification mechanism.[108]

Analysis by Oceana and Global Fishing Watch (GFW) found that Chinese vessels had logged a combined total of just 59 hours of fishing activity across the designated moratorium zones in the year before the closures were established, with no recorded activity at all in the Southwest Atlantic area.[109] In comparison, in the first six months of 2023 alone, Chinese squid vessels recorded over 330,000 hours of fishing activity.[110] Studies of fleet behaviour during the moratorium periods found that effort outside the closed seasons increased by 143%, suggesting the closures may be driving effort redistribution rather than any net reduction.[111] Non-Chinese flagged vessel effort also increased by 41% during the closures, demonstrating that such unilateral methods are unlikely to succeed.[112]

An analysis of the effectiveness of China's squid moratoria found that overall fishing effort increased by 67% and outside of the closures increased by 143%.[113]

The voluntary and unverifiable character of China's self-regulatory measures reflects a deeper structural weakness. China's VMS infrastructure - nominally the backbone of its monitoring, control and surveillance (MCS) capability - has had its integrity called into question since at least 2016, when the Chinese government delegated operational management of its vessel monitoring system to the China Distant Water Fisheries Association (CDFA). This association is a private body representing the very vessel operators that the system is intended to monitor. Chinese DWF compliance therefore relies on an institutional architecture with an inherent conflict of interest at its centre.[114]

"EJF: Can you describe the living and working conditions on-board?" Fisher: Our first few months were hard, we were treated like pigs. They give us left-over food. The other crews were beaten.[...]Fisher: We used the sea water for drinking and bathing. So it was very salty. The bread, noodles, and milk were all expired. They were freely given, though. Even the ingredients were all expired and exposed to cockroaches."

Interview with a Filipino fisher working onboard a Chinese-flagged light seiner operating in the NWIO, August 2023.

The regulatory weaknesses documented above are mirrored at the strategic policy level too. China's 15th Five-Year Plan (2026–2030), approved in March 2026, treats marine fisheries as one of three sectors in which China already "ranks first in the world" and calls for "developing deep-sea aquaculture and modern distant-water fisheries" within a dedicated marine economy chapter.[115] However, neither the publicly released Plan outline nor MARA's February 2026 fisheries work deployment meeting names squid specifically, and neither contains numerical effort caps, subsidy phase-outs, or quantified IUU-fishing reduction targets for the DWF fleet.[116] The 15th Plan is, on current evidence, an enabling and continuity document rather than a reform document — leaving the substantive regulation of China's DWF squid fleet to the same patchwork of non-binding administrative measures examined above.

| TAIWAN



Fishers store trays of squid inside the freezer of a Taiwanese-flagged squid jigger operating in the SWA.

Taiwan's DWF squid fleet has operated in the Southwest Atlantic, including the Falkland Islands EEZ, since 1984.[117] As of 2025, 86 squid fishing vessels are authorised by the Taiwanese Fisheries Agency.[118] The primary regulatory frameworks include the Act for Distant Water Fisheries and the Regulations for Fishing Vessels Conducting Squid Jigging Fishery.[119] Together, these require compliance with coastal state laws, e-logbook catch recording, and advance authorisation for trans-shipments and landings[120] - establishing a framework that is, on paper, more prescriptive than China's equivalent legislation.

In July 2024, Taiwan's Ministry of Agriculture released a four-year plan to eliminate IUU fishing, centred on increasing monitoring capacity and strengthening traceability for key species including squid.[121] In July 2025, the Taiwanese government also adopted management policies aligned with the Global Charter for Fisheries Transparency, signalling a willingness to engage with civil society on sustainable fisheries reform.[122] These are welcome steps, and Taiwan's trajectory stands in contrast to China's pattern of regulatory non-engagement.

"Sometimes[...]It was not allowed by the captain [to process seals]. Meanwhile, the crews frequently hunted them [seals]. [To] look for the teeth. For jewellery.[...]They [the skin and bodies] were thrown away.[...]Sometimes, it was ordered by the bosun. Sometimes, it was their initiative."

Interview with an Indonesian fisher working onboard a Taiwanese-flagged squid vessel operating in the SWA, January 2023.

However, significant implementation gaps undermine these commitments in practice. The overall inspection rate for fish landings at domestic and foreign ports stands at approximately 15%, with observer coverage at around 8%.[123] High seas boarding and inspection missions averaged around 22 inspections annually between 2022 and 2024 - covering of just 2.5% of Taiwan's 1,014 authorised DWF vessels.[124] No transparency or traceability mechanisms have yet been introduced to monitor the use of marine resources. Until enforcement capacity is brought into line with Taiwan's stated policy commitments, the impact on vessel compliance will remain limited.

*"**Fisher:** There was another crew who was hit. **EJF:** Why did it happen? **Fisher:** Because of a big mistake. For example, when there were many fish that should be hauled, he made a mistake by letting the fish go. **EJF:** He intentionally released it? **Fisher:** Yes. So, he could [get more] sleep."*

Interview with an Indonesian fisher working onboard a Taiwanese-flagged squid vessel operating in the SWA, January 2023.

| SOUTH KOREA



Two crew members posing with a penguin on board a Korean-flagged squid vessel operating in the SWA.

South Korea operates the world's fourth-largest DWF squid fleet by number of vessels, with 32 vessels authorised across the Pacific and Atlantic high seas.[125] The nation's Distant Water Fisheries Development Act mandates VMS installation on all vessels, oversees at-sea trans-shipments, and holds Korean nationals criminally liable for IUU fishing.[126] Labour protections fall under the Seafarers Act, which prohibits forced labour and passport seizure.[127]

In practice, however, the framework contains a critical structural gap. Minimum wage protections apply only to Korean nationals; no equivalent standard exists for foreign crew. Given that approximately 80% of the workforce aboard Korean DWF vessels are foreign nationals[128] - predominantly Indonesian - this omission leaves the majority of those working at sea with materially weaker protections than their Korean counterparts. The Seafarers Act also contains no provisions on working hours or mandatory rest periods for fishers, falling short of the minimum standards required under ILO Work in Fishing Convention No. 188 (C188).

In recent years Korea has taken a number of steps that suggest a genuine willingness to engage with reform. In March 2025 Korea ratified the BBNJ.[129] Following EJF's findings on IUU fishing and labour abuses aboard Korean-flagged squid vessels, the government committed in December 2025 to investigate EJF's reports, strengthen its MCS systems and review the inclusion of squid in the country's seafood import catch documentation scheme. Korea also demonstrated constructive engagement at the 2026 SPRFMO annual meeting through a proposal to improve data transparency in the SEP.[130] At the domestic level, the Ministry of Oceans and Fisheries introduced a 2024 Enhanced Implementation Plan establishing a maximum voyage length of 12 months, obligations on companies to terminate contracts with recruitment agencies found to be deducting crew salaries, and an online grievance mechanism for crew.[131]

These measures represent meaningful administrative progress. They remain, however, non-binding, which limits both their enforceability and their practical impact for the workers they are intended to protect. Korea's reform trajectory is the most substantive of the three flag states examined in this report, and multilateral engagements such as the submission of a promising proposal to SPRFMO in early 2026 suggest a political willingness to move further.[132] The question is whether domestic legislative reform - particularly on migrant worker protections and mandatory rest periods - will follow. Given the detailed evidence and extensive datasets documenting both destructive fishing and human rights abuses in South Korea's DWF squid fleet, South Korea is obligated to take substantial further action. This includes the steadfast implementation of the Global Charter for Fisheries Transparency, as well as ensuring that prosecutions and deterrent penalties are leveraged to effectively outlaw these practices.

"The deck was already full of squids. They were only good for two days and two nights. If they have not been put inside [the freezer], of course, it would stink. If we leave them outside, it would still stink. The captain would tell us to throw it away.[...]If put in sacks, I would say it was a lot. Maybe over 200 sacks [of squid].[...] That was in Argentina."

Interview with an Indonesian fisher working onboard a Korean-flagged squid vessel operating in the SWA, January 2024.

"We worked for 17 hours.[...]While working overtime, we got rest for three [or] four hours [in a 24 hour period], when the squid was in abundance."

Interview with an Indonesian fisher working onboard a Korean-flagged squid vessel operating in the SWA, July 2025.

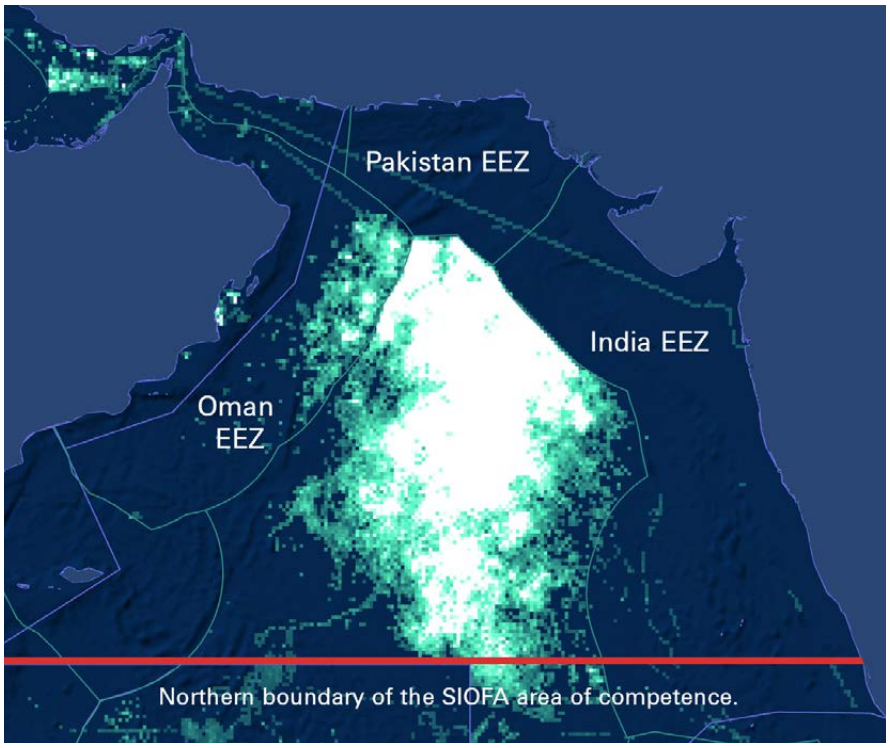
RFMO governance gaps in the SEP and NWIO

RFMOs are international bodies formed by states with shared interests in regulating particular high-seas fisheries or regions.[133/134] Two RFMOs — the SPRFMO (in the SEP) and the Southern Indian Ocean Fisheries Agreement (SIOFA[135]) (in the NWIO) — hold mandates that intersect with the squid fisheries covered in this report. However, the presence of a RFMO in the area where a fishery operates does not, on its own, mean that the fishery is regulated.

South Pacific Regional Fisheries Management Organisation failures

In the SEP, the SPRFMO has had a mandate over the jumbo squid fishery since its entry into force in 2012, but as of May 2026, no fishing-effort limits and no total allowable catches have been agreed for squid[136] — despite the species' global importance. RFMOs have long been criticized for the slow progress made to address overfishing, IUU fishing and associated labour abuses in high-seas fisheries, primarily due to their consensus-driven decision-making procedures.[137/138] Most meet only once a year, which means one or two countries can effectively block timely action.[139] When SPRFMO convened in early 2026, nine proposals on squid were submitted by member states to address overfishing, unregulated and destructive fishing, and labour abuses. Two were adopted, both with substantial caveats — delaying meaningful progress for at least another year. [140] These were a proposal submitted by South Korea to improve transparency and data sharing in the area and a proposal by the European Union to expand port state measures for vessel inspections.

NWIO - fishing in the gap between SIOFA and the IOTC



Global Fishing Watch's Apparent fishing effort (based on AIS data) by Chinese-flagged vessels in the NWIO between 1st January 2024 and 1st March 2026 shows how vessel activity is already pressed up against the EEZ boundaries of Oman, Pakistan and India.



Fishers pose with a captured dolphin onboard a Chinese-flagged light seiner operating in the NWIO.

In the NWIO, the governance gap between two RFMOs and China's ineffective flag-state regulations has created a governance vacuum that Chinese-flagged squid vessels have moved decisively to exploit. The SIOFA has a mandate to govern squid, but its area of competence extends only as far north as 10°00'N — the southern edge of FAO Subarea 51.3.2 (Arabian Sea, South-Western). The bulk of Chinese light-seiner fishing in the region — confirmed by AIS tracks and fishing-effort analysis — sits north of this line and therefore outside SIOFA's reach.[141] The other RFMO - The Indian Ocean Tuna Commission (IOTC) - only has a mandate over tuna and tuna like species.

Even so, SIOFA has not adopted a single CMM for any squid species. China had also only listed four vessels on the SIOFA authorised vessel list as of April 2026, with two of these being squid jiggers and two being fishery research and survey vessels.[142] None of the 231 light seiner vessels operating just north of the SIOFA boundary are registered with the RFMO. Even if SIOFA was to extend its reach to cover the NWIO, a current lack of substantive regulations for squid fisheries under the RFMO means that in practice, there would be non-existent management of the purpleback squid fishery and it would remain 'unregulated' regardless.[143/144]

What is light seining?



Photos taken onboard Chinese-flagged light seiners in the NWIO. (Left) Two light seiners in the distance. The booms that carry the net along with the vessel superstructure, which holds the high-powered light rigs, are all visible. (Right) Fishers perform maintenance on the lights of a light seiner.

Light seining is a fishing method in which vessels use powerful lights to attract and aggregate photosensitive species at or near the sea surface, then encircle and harvest them with a seine net. The method exploits the phototactic behaviour (attraction to light) of target species. In the NWIO context, this gear is principally used to target the purpleback squid and fishing is typically conducted at night.[145/146]

The number of DWF squid vessels operating in the NWIO increased by 830% between 2015 and 2019.

Industrial squid fishing activity in the NWIO was first recorded in 2015.[147] The number of vessels fishing in the area has since increased from 30 vessels in 2015 to 279 vessels in 2019 – an increase of 830% in just five years.[148] Between 2020 and 2025, EJF detected fishing activity by at least 361 unique AIS transponders (MMSIs) from vessels indicating possible further growth in the fleet. Initially, there was a mixture of fishing gears in the region, with 71% of the apparent fishing effort reportedly by light seiner vessels, 21% by vessels with multiple gears, and 8% by squid jiggers. By 2025, light seiners made up 97.3% of this fishing effort.[149]

Light seiners are an increasingly prevalent vessel type in the Chinese DWF fleet, developed from traditional Chinese gear types from the 1990s onwards. Two net types are commonly deployed in combination with high-intensity lighting rigs: 'Dip nets (敷网)' and 'falling nets (罩网)'. The latter are becoming increasingly popular and can extend more than 300m out from the vessel to encircle schools of fish or squid. Due to the similarities between these two types of nets, vessels using these nets in combination with artificial lights are collectively referred to as 'light seiners' in this report.

"EJF: You got squid, bonito,[...]. Did you get squid together with bonito? Fisher: Sometimes, we get them together. Sometimes, we don't. Sometimes, when we get squids, all of them are squids. The size varies. They were big, medium, and small. Sometimes, we get all of them: fish, squid, crabs."

Interview with an Indonesian fisher working onboard a Chinese-flagged squid vessel operating in the NWIO, June 2025.

The combination of high-powered lights, fishing at night and purse seine nets makes this method extremely effective at targeting squid but also skipjack, yellowfin and bigeye tuna. Vulnerable megafauna such as sharks and marine mammals are also known to be attracted to lights at night.[150/151] This is partially due to the 'food chain effect' whereby the lights attract microscopic plankton which in turn attract baitfish (squid, anchovies, and sardines). These aggregations can then attract dolphins, turtles, whale sharks, manta rays, tuna and tuna-like species which feed on the baitfish.[152/153]



A photo taken by a fisher onboard a light seiner in the NWIO. Light seiners scored some of the highest rates for catching of dolphins and other cetaceans amongst studied vessels.

Increasing the susceptibility of tuna to be attracted to light seiners, tuna species have been found to congregate nearer the surface during the night and have even been found to be highly sensitive to different light colours, with their photoreceptors especially sensitive to blue-green light.[154] Green light has also been linked to higher bycatch rates, with blue sharks and sea turtles attracted to this light more than other colours.[155]

"There were two lights, the white one was above and the green one was under [the water][...] To attract the fish. Because at night, the fish like [to swim] in the bright light[...] The fish that are attracted to green lights were the cob, squid, and skipjack tuna."

Interview with an Indonesian fisher working onboard a Chinese-flagged light seiner vessel, October 2025.

Technical documents from a Chinese fishing gear research institute describe the engineering basis for why light seiner falling nets are so effective at retaining tuna and tuna-like species:
'As the netting of the enclosed net forms a tangent to the tuna's swimming path, the enclosed net is effective in preventing tuna from escaping. It is thus evident that this fishing gear and method not only captures phototactic (attracted to light) squid and other pelagic fish, but more importantly, is capable of catching tuna'.[156]

The light seiner fleet in the NWIO has already drawn considerable scrutiny from NGOs.[157/158] It has also been recognised by both RFMOs in recent discussions. The IOTC's Working Party on Ecosystems and Bycatch noted in 2022 that high-seas squid fishing operations in the Indian Ocean overlap with the IOTC tuna purse seine fleet's areas of operation, that the overlap results in bycatch of tuna and tuna-like species, and - crucially - that catch data on this bycatch are not being reported to the IOTC at all because the squid fishery is not managed by it. [159] No further IOTC action has followed. SIOFA's 2025 Overview of SIOFA Fisheries report likewise lists the fleet as one of the "main fisheries operating in the SIOFA area", though further details on the fishing area are described as "To be confirmed".[160]

That neither RFMO has acted since 2021 to research, let alone regulate, the vast Chinese squid fishing operation in the NWIO is alarming in its own right. The continued unregulated extraction of squid alongside the unregulated and unreported catch of tuna and tuna-like species could produce severe trophic impacts across the Western Indian Ocean.[161]

Key incoming global treaties and their potential impacts

Two recent multilateral instruments have the potential to reshape the regulatory environment for global squid fisheries — both for better and, depending on how they are implemented, for worse. The High Seas Treaty (the BBNJ Agreement), which entered into force in January 2026[162], creates the first global mechanism for establishing area-based management tools, including marine protected areas, in waters beyond national jurisdiction.

The World Trade Organisation's (WTO) Agreement on Fisheries Subsidies, which entered into force in September 2025[163], prohibits subsidies for fishing on the high seas in waters where no relevant RFMO has competence — a category that explicitly captures the SWA squid fishery and, on a strict reading, the Chinese light seiner fleet operating in the NWIO. Both instruments, in different ways, could narrow the governance vacuum within which the squid fisheries described in this report currently operate. The two subsections that follow examine each in turn.

Regional Fisheries Management Organisations and the High Seas Treaty

Establishing a new RFMO requires cooperation amongst relevant flag and coastal states. This may be difficult to achieve in politically sensitive or contested fisheries where nations dispute the legitimacy of national boundaries. If countries cannot agree on a way forward, the resulting regulatory vacuum can allow opportunistic flag states to exploit the available resources, thus driving the fishery to the brink of collapse.[164]

"There's no getting around the fact that you can see the Chinese long-distant fishing fleet from space even, and so we are crying out for cooperation, for an RFMO for the region that will include the likes of Great Britain, Argentina, and the Falklands that puts politics aside and focuses on the bigger, the larger good."

James Bates, Executive Secretary of the Falkland Islands Fishing Companies Association.[165]

A newly formed RFMO may also not be fast or agile enough to deal with the scale and severity of the IUU fishing problems present in many unregulated squid fisheries. If proceedings are bogged down by opaque, consensus-driven decision-making, squid populations may have already collapsed before anything is agreed. This would require either an expedited, non-consensus approach contrary to existing RFMO creations or an entirely new approach under the BBNJ.[166]

At the core of the BBNJ is the mechanism to create Area-Based Management Tools (ABMTs), including Marine Protected Areas (MPAs).[167] This will mean that countries will be able to collectively designate previously ungoverned high seas areas as protected or regulated, potentially restricting fishing or other resource extraction within these areas.

Notably, the BBNJ seeks to address many of the historical flaws of RFMOs by adopting more flexible decision-making processes (two-thirds majority vote if consensus fails) and by requiring mutual cooperation between existing RFMOs and newly formed MPAs.[168] Existing RFMOs, for example, cannot veto plans to create new MPAs. Over 60 countries had ratified the Agreement as of March 2026, with China signing in December 2025.[169]

WTO Agreement on Fisheries Subsidies

Despite surging market demand for squid, many squid fisheries are only marginally profitable or financially unsustainable. The structural reasons are fuel costs, distance, and the relatively low unit value of squid compared to other high-seas pelagics such as tuna. Sala et al. (2018) estimated that fishing costs in the Southwest Atlantic are four times greater than in waters near mainland China, and that — taken globally — Chinese squid fishing was consistently unprofitable without subsidies, becoming marginally profitable only off the coast of Peru.[170] Analysis by Oceana has found that 42% of China's fisheries subsidies are allocated to its DWF fleet, despite that fleet accounting for only 22% of national catch.[171] Squid vessel operators are acutely aware of this financial precarity, with EJF interviewees recounting the extreme lengths captains went to in order to cut costs on board.

A 2024 Planet Tracker report found that squid vessels would have a gross profit margin of -10% if they paid their crews the industry standard. Some Chinese squid fisheries are so unprofitable (-48% gross margin in the NWIO and -1% in the SEP) that they resort to underhanded revenue optimisation (under-reporting of catch to avoid tax, illegal fishing in coastal waters, illegal shark finning, and illegal at-sea trans-shipment) or extreme forms of cost-cutting (underpaid or forced labour).[172]

> ***"No Member shall grant or maintain subsidies provided to fishing or fishing related activities outside of the jurisdiction of a coastal Member or a coastal non-Member and outside the competence of a relevant RFMO/A".***
>
> Article 5: Other subsidies, WTO Agreement on Fisheries Subsidies.[173]

The WTO's Agreement on Fisheries Subsidies is expected to have far-reaching impacts on fishing practices around the world, but arguably none more so than DWF fleets operating on thin profit margins and propped up by government-issued subsidies. Sala et al. wrote in 2018 that "54% of high seas fishing grounds globally would not be profitable at the fishing rates corresponding to the year of the research."[174] This includes the DWF activities of China, Taiwan and South Korea. Couple this with Article 5 - which outlaws subsidies for unregulated high seas fishing - and it becomes clear that the squid operations detailed in this report will see their profit margins fall even further.

An optimistic outlook on the likely ramifications of this Agreement is that squid fishing effort will fall in these unregulated fisheries, especially in the least profitable high seas areas such as the NWIO. This would of course benefit the oceans at large and allow squid populations to recover. However, the converse could also occur if squid operators choose to drastically cut operating costs (i.e. labour) to facilitate continued fishing in these unprofitable fisheries.[175] The picture in the NWIO is further complicated by the fact that vessels nominally targeting squid are also catching substantial quantities of tuna and tuna-like species (see page 40), which likely cushions operators against any decline in squid prices or the potential removal of subsidies. This may make the Agreement's effect on China's NWIO fleet operating decisions weaker than the headline subsidies analysis suggests.

Another adverse impact could be that China initiates proceedings to expedite the establishment of an area-based management tool or RFMO to regulate these areas under the BBNJ. Although this could be a positive development, if it transpires that China is pursuing this action only to reinstate subsidies for its DWF fleets, then it could result in little positive reform. To prevent these adverse consequences, it will require close and effective monitoring of the Agreement's implementation by relevant states and external stakeholders to ensure that China is pursuing ABMT ambitions with good intentions in mind.

Findings

Size, dynamics and operating model of the three fisheries

This report presents the first comparative, interview-based analysis of conditions across three of the world's most commercially significant DWF squid fisheries — the SWA, SEP and NWIO. Earlier EJF investigations have examined the SWA and SEP fleets separately;[176/177] this report is the first to add the NWIO and to compare the three side by side. A full methodology is found in the Appendix.

All three fisheries are dominated by Chinese-flagged DWF vessels. 70% of the 249 vessels in our study were flagged to China, 16% to Taiwan and 14% to South Korea. Korean and Taiwanese operations were concentrated almost entirely in the SWA.

Table 4: Overview of each of the fisheries covered in this report.

	Northwest Indian Ocean (NWIO)	Southeast Pacific Ocean (SEP)	Southwest Atlantic Ocean (SWA)
Vessels in this fishery investigated by EJF	82	57	135
Dominant flag state(s) among vessels	China (100%)	China (96%), Korea (2%), Taiwan (2%)	China (48%), Taiwan (28%), South Korea (24%)
Dominant gear type	Light seiners (78% of vessels in the fishery), multi-gear vessels (18.3%), others (3.6%)	Squid jiggers (93%), squid/saury vessels (7%)	Squid jiggers (47%), squid saury vessels (36%), trawlers (17%), light seiner (0.7%)
Target species	Purpleback squid* (Recorded in FAO catch data under 'Various squids NEI')	Jumbo squid	Argentine shortfin squid
FAO reported catch figures (2023)**	41,000 t (China)	494,000 t (China)	128,000 t (China), 52,165 t (Korea), 38,955 t (Taiwan)
Average reported trip length by vessel (months)	11.08	13.56	9.48
RFMO with mandate over squid	None - Fishery is outside SIOFA area of competence and no squid CMMs	SPRFMO but no CMMs since 2012 entry into force	None
Recorded fleet growth	Growing/consolidating; Has increased from unique 341 vessels recorded between 2015 and 2019[178] to 361 vessels between 2020 to 2025 (A 5.87% increase).	Consolidating; has increased by 21.8% since 2022; from 417 vessels to 508 in 2025.[179]	Stable; has decreased by 26.6% since 2021 from 406 vessels to 298 in 2024.[180]
Estimated cumulative apparent fishing effort 2020-2025 (hours)	1,593,669.9	5,274,756.2	1,495,293.0

* Although the predominantly light-seiner fleet ostensibly targets purpleback squid, EJF investigations also reveal that these vessels are harvesting large quantities of tuna and tuna-like species.

** Collectively, these three fisheries (Jumbo squid, purpleback squid and various squid species (NEI) from the Western Indian Ocean) represented 60% of the world's squid supply as of 2023.

Mapping forced labour infringements across investigated vessels

Average number of forced labour indicators recorded across each of the 249 vessels investigated by flag state

Summary

Total vessels
249

Number of forced labour indicators per vessel

	12	11	9-10	7-8	5-6	1-4
China	22	39	65	38	05	05
Taiwan	01	06	13	15	05	05
South Korea	00	00	05	10	14	06

Number of vessels with at least 9 indicators of forced labour: **151 (61%)**

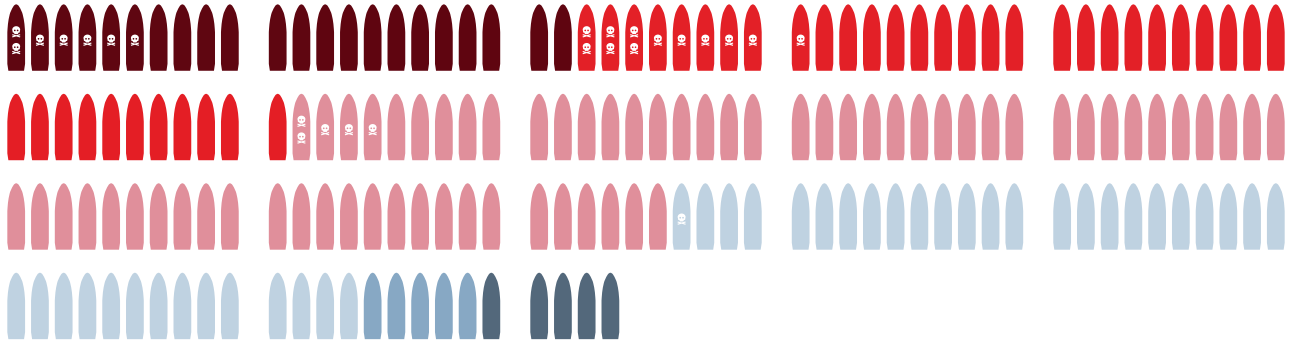
Vessels with all 12 forced labour indicators: **23**

Average number of indicators: **8.9**

Infringements by flag state

China

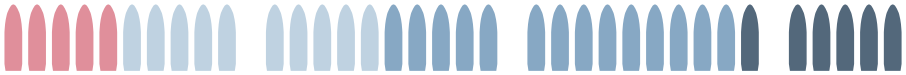
25 deaths were identified across 20 vessels, all flagged to China



Taiwan



South Korea



Vessel count
= 1 vessel

Average indicators/vessel
12 11 9-10 7-8 5-6 1-4

The SWA Argentine shortfin squid fishery is structurally distinct from the other two. It is the only fishery of the three not exclusively dominated by Chinese-flagged vessels: of the 135 SWA vessels, an estimated 48% were Chinese-flagged, 28% Taiwanese and 24% South Korean.

Discrepancies in measuring squid catches due to governance gaps

The incomplete or inaccurate reporting on purpleback squid catches is an ongoing issue for researchers (See page 10). Recorded FAO squid landing data for the 'Western Indian Ocean' covers "various squid NEI" with no further species-specific differentiation.[vi] India only began recording various squid landings in 2015 whilst China only started declaring theirs in 2018. This led to total landings of this squid category jumping to 162,689 tonnes by 2018. China's recorded catches in the region have increased by 219% since they began reporting them. By 2023, five countries were reporting catches of "various squids NEI" - India (Responsible for 69% of declared landings), China (28%), Pakistan (3%), Kenya (0.4%) and Saudi Arabia (0.02%).[181]

The situation is further confused when this FAO data is compared with available logbook recordings retrieved by Chinese researchers between 2015 and 2021. Logbook catches specifically of purpleback squid increased from virtually zero in 2015 to a peak of around 17,500 tonnes in 2019.[182] Catches declined significantly in 2020 and 2021, a fall of approximately 53% compared to their peak. Researchers have already hypothesised several reasons for this decline including a sharp increase in fishing pressure on the species and/or the impacts of climate change affecting the available habitats for the squid.[183] More recent catch data that would help confirm this has not been made publicly available, with reports published in 2026 continuing to cite 2021 catch figures.[184]

The gaps in available reporting as well as lack of species differentiation, are all common consequences of a lack of international fisheries management and lack of incentive from flag states to publicise such data. The situation is made even more worrying given that AIS-derived catch estimates for Chinese fleets across the entire Indian Ocean have been found to be approximately four times higher than what China reported to the FAO.[185]

[vi] FAO FishstatJ does include catch reporting for "common squids NEI" and Indian squid but reported catches are negligible with no reported catch of either of these categories by China, India or Pakistan.



Crew members sorting and organising squid catches on a Chinese-flagged light seiner operating in the NWIO.

EJF ©

At-sea trans-shipment has become the norm



A documented trans-shipment between a Chinese-flagged light seiner operating in the NWIO and a reefer in May 2023.

> ***"We did trans-shipment once every two months. Once we did it twice in a month. We trans-shipped the catch to Chinese, Russian, and Panamanian-flagged reefers. The last trans-shipment was in June 2025."***

Interview with an Indonesian fisher working onboard a Chinese squid vessel operating in the SEP, August 2025.

> ***"EJF: As far as you know, how many tons [of catch] were transferred, in total? Fisher: I'm not sure how many tons. But if we're talking about sacks, it was 10,000 sacks[...] It was a mix of squid and fish."***

Interview with an Indonesian fisher working onboard a Chinese squid vessel operating in the NWIO, June 2025.

All three fisheries rely overwhelmingly on at-sea trans-shipment rather than port returns to keep vessels at sea — 97% of the 431 fishers EJF interviewed reported that their vessels trans-shipped catch at sea. This practice has become an industry-wide standard with the number of recorded encounter events on GFW increasing by 37% between 2019 and 2025.[186/vii] It is popular amongst fishing companies because it allows fishing vessels to remain out at fishing grounds for longer, thereby improving the profitability of fishing operations and reducing fuel costs.

[vii] It should be noted that this increase may be partially due to an increase in AIS usage, improved satellite coverage. Conversely, vessels involved in IUU fishing practices may be actively switching off their AIS to prevent trans-shipments from being detected, thus resulting in the number of recorded encounters being an under-representation of the true figure.

At-sea trans-shipment can be defined as the transfer of fish from one vessel (often a fishing vessel) to another (often a reefer).[187] It can occur hundreds of kilometres from shore and may occur on the high seas, making it difficult and costly to effectively monitor these activities without either human observers or electronic monitoring systems (cameras) onboard both donor and receiving vessel(s).[188]

EJF analysis of GFW AIS data recorded 219 unique reefer vessels operating within our study areas, participating in 27,336 at-sea encounters and contributing to 1,588 reefer trips (See Appendix for definition) between fishing grounds and ports.

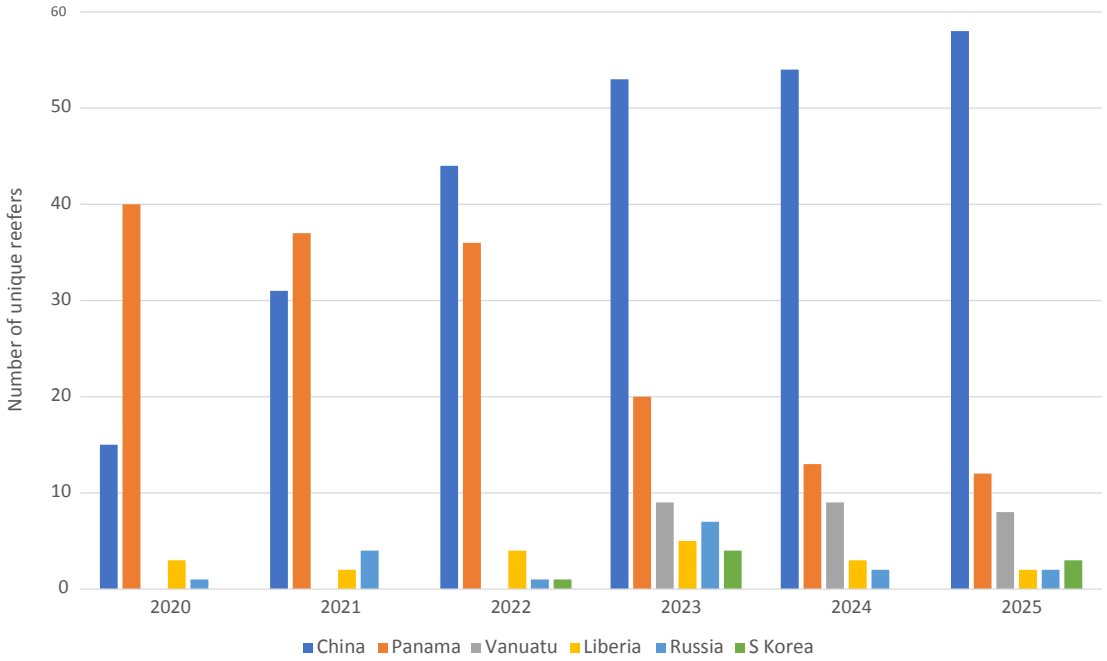


Figure 3: The number of unique reefers operating inside the study area by flag state - illustrating the rapid reflagging of trans-shipment capacity from Panama to China over the study period.

The number of Chinese-flagged reefers has grown from 15 vessels in 2020 to 58 in 2025 – equal to a 287% increase.

Just under half of the unique reefers analysed were owned by China (49.8%), followed by Panama (26%), Vanuatu (4.6%) and Russia (4.6%), Liberia (3.7%) and South Korea (3.2%). The number of Chinese-flagged reefers has increased by 287% since 2020 while at the same time Panama-flagged reefers have seen a steady decline during our study period. This rapid re-flagging coincides with a Chinese policy shift related to the 14th Five Year Plan, beginning in 2021, to develop a domestic trans-shipment industry as part of a vertically integrated, wholly Chinese-owned DWF squid industry.[189] Trans-shipment is now so ingrained in the country's seafood supply chain that reefers are affectionately known as "delivery riders" (外卖骑手) bringing "takeout" (外卖) back to China.[190]

"Over 11,000 tonnes of squid: your distant water delivery has arrived"

Title of an article advertising for Huiqun port published on Zhejiang Daily news outlet in February 2025.[191]

Table 5: Number of reefer trips within each of our study areas by year.

Year	SEP		SWA		NWIO	
	Reefer trips	Encounters	Reefer trips	Encounters	Reefer trips	Encounters
2020	77	2034	52	854	35	231
2021	66	2493	43	677	46	314
2022	79	2906	41	799	52	579
2023	84	3184	40	775	72	757
2024	58	1706	44	909	70	568
2025	77	2575	40	615	63	651
% inc/dec (2020-2025)	0%	27%	-23%	-28%	80%	182%
Total	**441**	**14,898**	**260**	**4,629**	**338**	**3,100**

Between 2020-2025, the SEP was the busiest fishing ground for trans-shipment with about 115 unique reefers making 441 trips and conducting 14,898 encounters with fishing vessels. The number of trips was 1.3-1.7 times higher than the other two fishing grounds, and the number of encounters was about 3.2-4.8 times higher. The NWIO saw the largest increases in activity between 2020 and 2025 with the number of reefer trips rising by 80% and 182% for encounters. This highlights the rising importance of NWIO as an emerging fishing ground.

Although the number of reefer trips in the NWIO (338) was greater than that of the SWA (260), the SWA had a higher number of encounters (4,629) when compared with the NWIO (3,100). This could suggest that in the NWIO fishing ground, where both tuna and squids are the main catch, it takes fewer encounters to fill up carrier vessels, but it requires more reefer trips to trans-ship the fish caught by the entire fleet.
The number of trips peaked in 2023 for both the SEP and NWIO as more reefers were deployed to these fisheries to take advantage of the previous year's squid price increases.[192] However, in 2024, the number of reefer trips and encounters in both fisheries dipped due to production shortages - driving prices to a record-breaking high - while the SWA had a higher number of trips and encounters due to an abundant harvest, reflected in relatively stable pricing.[193] This signals that the deployment of fishing vessels and reefers follows a strategy related to fluctuating squid prices, squid abundance, as well as other external factors such as fuel price and labour costs.[194]

The almost universal prevalence of at-sea transhipment across these three unregulated squid fisheries should be of concern to all relevant States and seafood industry stakeholders. In addition to the monitoring challenges that come with the practice, it is increasingly associated with an increased risk of facilitating IUU fishing and associated crimes in the fisheries sector including human rights abuses, human trafficking, and wildlife trafficking.[195/196/197] Often, it is fisheries mismanagement and lack of transparency of DWF fishing operations which provide the catalysts for these inter-related issues to proliferate.[198/199/200]

Prevalence of destructive fishing practices across the three squid fisheries

Between 2020 and 2025, EJF interviewed fishers from 249 vessels that operated in the NWIO, SEP and SWA oceans. Over half of vessels operated in the SWA compared to approximately 30% in the NWIO and 20% in the SEP. On average, 25% of NWIO vessels were involved in some kind of destructive fishing compared to 19% in the SEP and 10% in the SWA. Destructive fishing indicators have been calculated and grouped per vessel on which the abuse was reported.

The NWIO fishery stands out as the most environmentally destructive fishing ground across multiple indicators of destructive fishing. Shark finning (Defined as the catching of sharks followed by removal of fins and disposal of shark bodies whilst at sea) in the NWIO was recorded on 62% of DWF squid vessels, while the capture and killing of vulnerable megafauna was recorded on 66% of vessels. Much higher rates of megafauna interaction and bycatch may be because light seiners are disproportionately effective in attracting these species.

"For dolphins, only their teeth were taken[...] They were killed first, and their teeth were taken. Their heads were cut off."

Interview with an Indonesian fisher working onboard a Chinese-flagged light seiner vessel operating in the NWIO, January 2025.



A light seiner deck full of tuna catches. The Chinese-flagged vessel reportedly operated in the NWIO area when the interviewee was on board.



Yellowfin tuna catches on the deck of a Chinese-flagged light seiner. The vessel reportedly operated in the NWIO area.

Turtles, whale sharks and manta rays are also much more geographically associated with the Indian Ocean as opposed to the SEP or SWA. This is the only fishery in which testimony collected from fishers by EJF exclusively documents practices on board Chinese-flagged vessels.

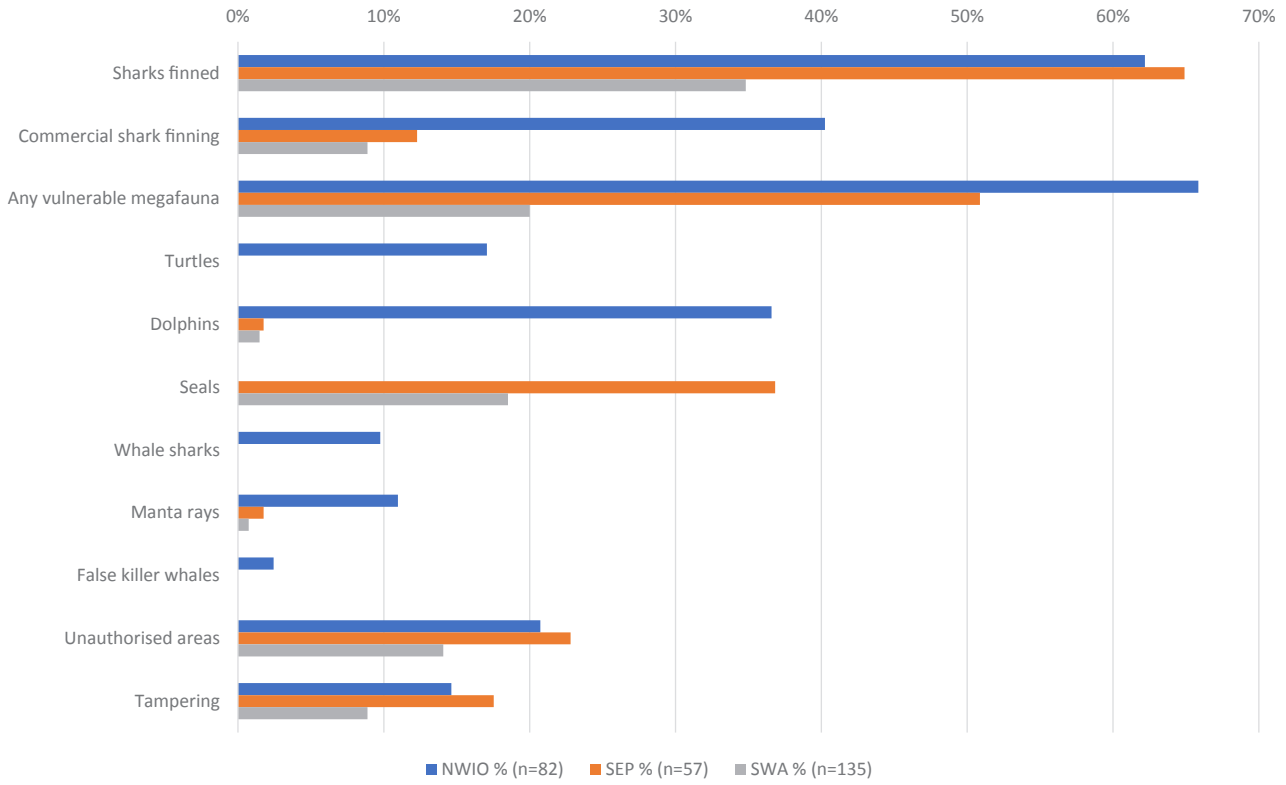


Figure 4: Comparison chart showing the stark differences in environmental crime prevalence across the different squid fisheries.

Contrary to previous scientific reports that light seiners are highly selective in terms of target species,[201] EJF's investigations document widespread interactions with vulnerable marine megafauna. Just over 60% of vessels were alleged to have deliberately captured, harmed, or retained vulnerable marine megafauna.

> *"**EJF:** What was done to this whale shark? **Fisher:** It was killed. When it entered the net and was lifted, it was still alive. **EJF:** What happened next? **Fisher:** After that, it was put inside the fish hold. After it died, then it was dumped. **EJF:** So, the fish was kept overnight (on the vessel)? **Fisher:** Yes, it was kept overnight. **EJF:** Why was it kept overnight? Why didn't your vessel dump it right away? **Fisher:** I'm not sure, I didn't understand their language."*

Interview with an Indonesian fisher working onboard a Chinese-flagged light seiner vessel, July 2025.

> *"We dumped dolphins back into the ocean. Most of them were dead when released back to the ocean. Once, we caught up to four dolphins in one haul."*

Interview with an Indonesian fisher working onboard a Chinese-flagged light seiner vessel, February 2026.

> *"Dolphin meat is also used as a deterrent so that other dolphins will stay away. Because they eat squid [they are unwanted by the fishing vessel]."*

Interview with a Filipino fisher working onboard a Chinese-flagged light seiner vessel, September 2023.



Three dead dolphins lie amongst a catch of small pelagics and squid (Light seiner in the NWIO).

Dolphin and turtle meat were frequently used as bait to attract squid. In the case of dolphins, fishers said that other dolphins would stay away from the vessel on smelling the dolphin blood in the water. The wounded or dead animals would be tied to the side of the vessel. This kind of inhumane fishing practice sometimes resulted in the prolonged suffering of animals for weeks.

Table 6: Prevalence of destructive fishing indicators in the NWIO disaggregating for light seiners.

Destructive fishing indicator(s)	Number of vessels (n=82)	Percentage (n=82)	Light seiners (n=64)	Percentage (n=64)
Sharks finned	51	62%	37	58%
Commercial shark finning	33	40%	23	36%
Any vulnerable megafauna	54	66%	39	61%
Turtle capture	14	17%	11	17%
Dolphin capture	30	37%	27	42%
Whale shark capture	8	10%	5	8%
Manta ray capture	9	11%	6	9%
False killer whale capture	2	2%	2	3%
Unauthorised areas	17	21%	12	19%
Tampering	12	15%	2	3%

Estimating the tuna catches of light seiners in the NWIO

EJF interviewed former fishers from 64 light seiners - representing approximately 28% of the total light seiner fleet operating in the NWIO according to GFW analysis.[202] Fishers reported that 62 vessels targeted squid as their main target species (96.8%). 44 vessels also caught "tuna" or specifically "skipjack tuna" as part of their catch (68.8%). 41.3% fishers interviewed by EJF also answered "all kinds of fish" when asked about target species (26 vessels). This means that the percentage of vessels catching tuna is likely to be higher than 70%. Occasionally, some vessels also caught yellowfin tuna, however it seems this was not a target species. This is despite none of these vessels being registered with the IOTC.

Photographic evidence shared with EJF corroborates these accounts. Some photos show more than 1,000 fish, all of which appear to be either tuna or tuna-like species that are under the management mandate of the IOTC.[203]

"The captain sets the net using a machine. Then, some lights are lit and after the nets are put down, the captain slowly turns off the lights and leaves one light that is big and then uses the propeller. After just a few minutes, the machine raises the nets that are already filled with our catch of fish [skipjack] or squid."

Interview with a Filipino fisher working onboard a Chinese-flagged light seiner vessel, June 2024.

Fishers told EJF that the number of hauls per day varied among light seiner vessels, seasonality and location, with a median of 6 hauls per day. During high seasons, the net could be deployed more than 10 times a day. For each haul, the fishers reported they could get up to 1-2 tonnes of skipjack or kawakawa (*Euthynnus affinis*[204]), which equates to about 10-15 tonnes of fish per day.

This is within the reasonable range of catch since the crew also reported having to prepare 200-1,000 trays of small tuna and tuna-like species per fishing day before sending these into the blast freezer. This is equivalent to about 5-25 tonnes of fish per day. This is comparable to the equivalent daily catch of an IOTC registered purse seine vessel.[205/206] Each frozen fish block was then packed into plastic sacks and stored in one of the three to four freezer holds onboard.

The fishers reported that they would trans-ship 300-450 tonnes of tuna (including small and large tuna species) during one trans-shipment event. This is also within a reasonable range since the median trans-shipment frequency is six weeks with a minimum of two weeks and maximum of two months. It could take one vessel 17-85 days to accumulate 300-450 tonnes of tuna before trans-shipment, assuming the daily catch level ranges between 5-25 tonnes.

One fisher told EJF that their vessel built and used drifting fish aggregation devices (DFADs) to yield more tuna and squid catch. Another fisher told EJF that they did not make their own DFADs, but they did retrieve and use previously used DFADs that had been abandoned, lost or discarded to "attract more fish".

"The vessel used FADs during fishing operations in the NWIO [...] The use of FADs significantly increased catch volumes [...] The FADs used were non-detachable and were constructed onboard by the crew under the captain's instructions. The materials used included rope and sacks."

Interview with an Indonesian fisher onboard a Chinese-flagged light seiner squid vessel, November 2025.

"We didn't deliberately create the FADs, but we often found displaced FADs at sea. When we found these, we usually collected them and attached them to the vessel to attract more fish. We often use the FADs during our operation."

Interview with an Indonesian fisher onboard a Chinese-flagged light seiner squid vessel, November 2025.

Two Chinese news articles, published in June 2024 and June 2025 respectively, further corroborate EJF's findings that unregistered light seiners are catching large quantities of tuna and tuna-like species without IOTC authorisation. The 2024 article describes how a number of light seiner vessels (including the Fu Yuan Yu 8771, which two former fishers interviewed by EJF worked on the year before in 2023) unloaded 560 tonnes of "squid, skipjack tuna (known as "bomb fish" in Chinese - 炸弹鱼) and sardines from the Indian Ocean..."[207] Both Filipino fishers whom EJF interviewed in 2023 confirmed their vessel operating in the NWIO and caught both squid and tuna. The 2025 article describes how the Fu Yuan Yu 8896, Fu Yuan Yu 8897, Fu Yuan Yu 8898, and Fu Yuan Yu 8899 unloaded a total of "671 tonnes of frozen squid, frozen skipjack tuna..." into port.[208] The vessels are described as having fished on the "high seas of the Indian Ocean". In 2024, EJF interviewed one former fisher from the Fu Yuan Yu 8896 who reported that his vessel targeted mackerel tuna and squid and operated in the NWIO between late 2022 and the summer of 2023.

EJF's findings demonstrate that light seining cannot be characterised as a squid-fishing method with just incidental tuna bycatch. The method is structurally effective for the large-scale capture of multiple commercially and ecologically significant species, including tuna and tuna-like species that fall under the management jurisdiction of the IOTC. This is especially worrying given that Chinese-flagged light seiner vessels made up 97.3% of industrial fishing effort in the area in 2025.[209]

The economic costs of continued unregulated squid and tuna fishing in the NWIO could be grave. The fact that the fishing grounds are surrounded by seven coastal countries (See page 26) which depend on fisheries for national food security and fisher livelihoods should be a concern to all countries that border the Indian Ocean. Overexploitation of the squid fishery should also be of concern to tuna fleets in the Indian Ocean given the importance of squid to the diets of several tuna and tuna-like species.[210]



Fishers sort through thousands of tuna and tunalike species caught by a light seiner operating in the NWIO. This vessel is not registered with the IOTC.

In the SEP, shark finning was equally prevalent and vulnerable megafauna catches were recorded by just over half of the vessels which EJF interviewed crew from. Seals were the megafauna most frequently caught by vessels in this area, due to geography. 96% of vessels investigated in this fishery were Chinese-flagged. 55 of these Chinese vessels were registered with the SPRFMO at the time of writing, representing just over 10% of the registered squid jigging fleet in the SEP.[211] Despite the SEP squid fishery being covered by the SPRFMO, it is clear that the current lack of RFMO regulation on the squid fleet in this region is translating into widespread destructive fishing practices across vessels.

The SWA has much lower rates of destructive fishing but, this is largely an artefact of flag-state composition rather than anything specific to the fishery itself. When the SWA figures are restricted to Chinese-flagged vessels only, rates of destructive fishing rise sharply on every indicator, and the Chinese fleet in the SWA behaves similarly to its counterparts in the NWIO and SEP.



A shark being dissected by crew members on a Chinese-flagged light seiner operating in the NWIO area.

The link between destructive fishing and forced labour at sea

EJF reports have long demonstrated that IUU fishing and/or destructive fishing practices are intrinsically linked to the presence of forced labour at sea.[212] One academic study of 20 major fishing nations found that countries with documented labour abuses at sea share a number of features including heavily subsidised fishing fleets, long-distance operations, and poor catch reporting.[213] Contributing factors such as economic pressures and a race to the bottom in certain fisheries also incentivise vessel operators to exploit workers as they seek to cut costs ever further.

This relationship is borne out by the dataset underpinning this report. Vessels in this study with higher numbers of forced labour indicators (Table 7) also report higher numbers of destructive fishing indicators, which corroborates existing findings that document the co-occurrence of labour and fisheries offences.[214] This should raise concerns for seafood buyers around the world who continue to source from high-risk DWF fisheries such as the NWIO, SEP and SWA. If vessels are involved in widespread forced labour abuses, the chances of them also engaging in destructive fishing can increase rapidly.

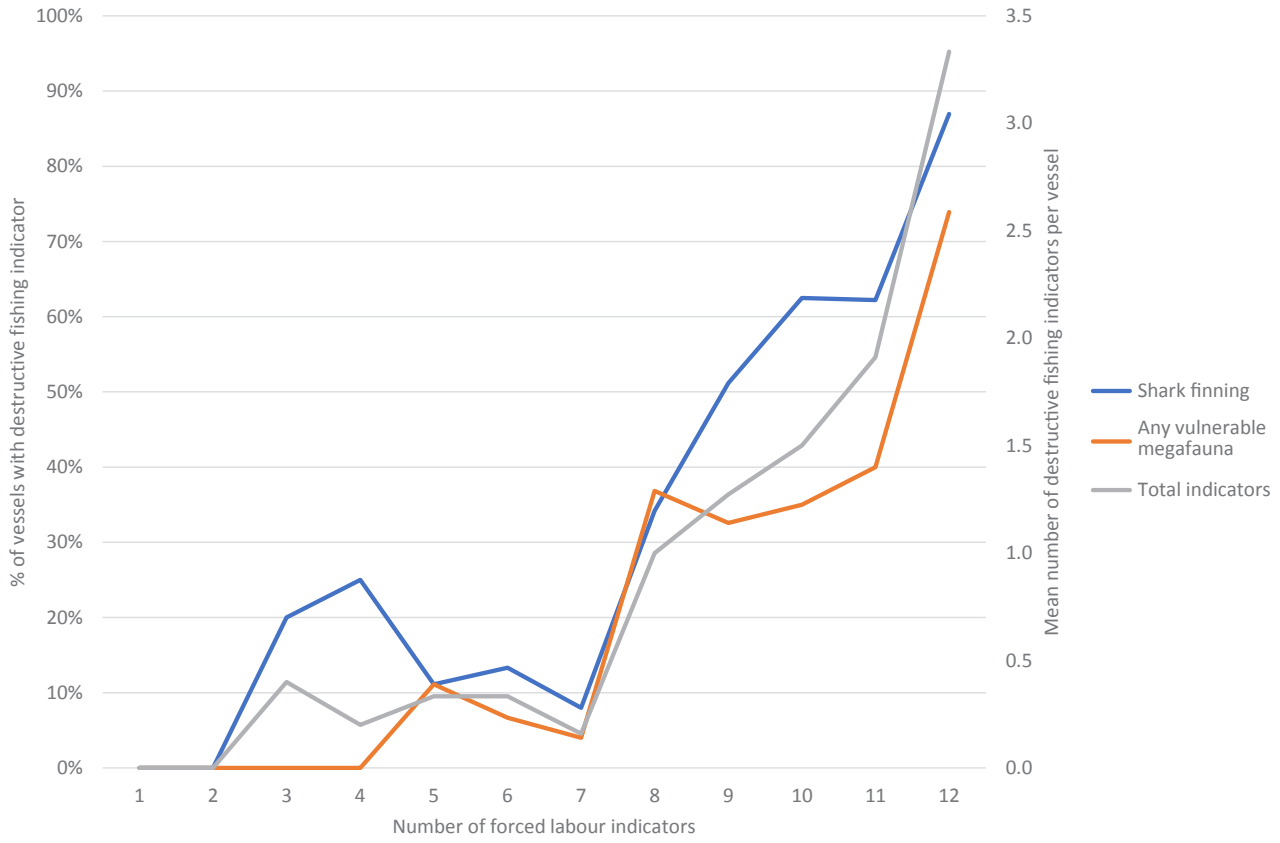


Figure 5: Relationship between forced labour and destructive fishing indicators.

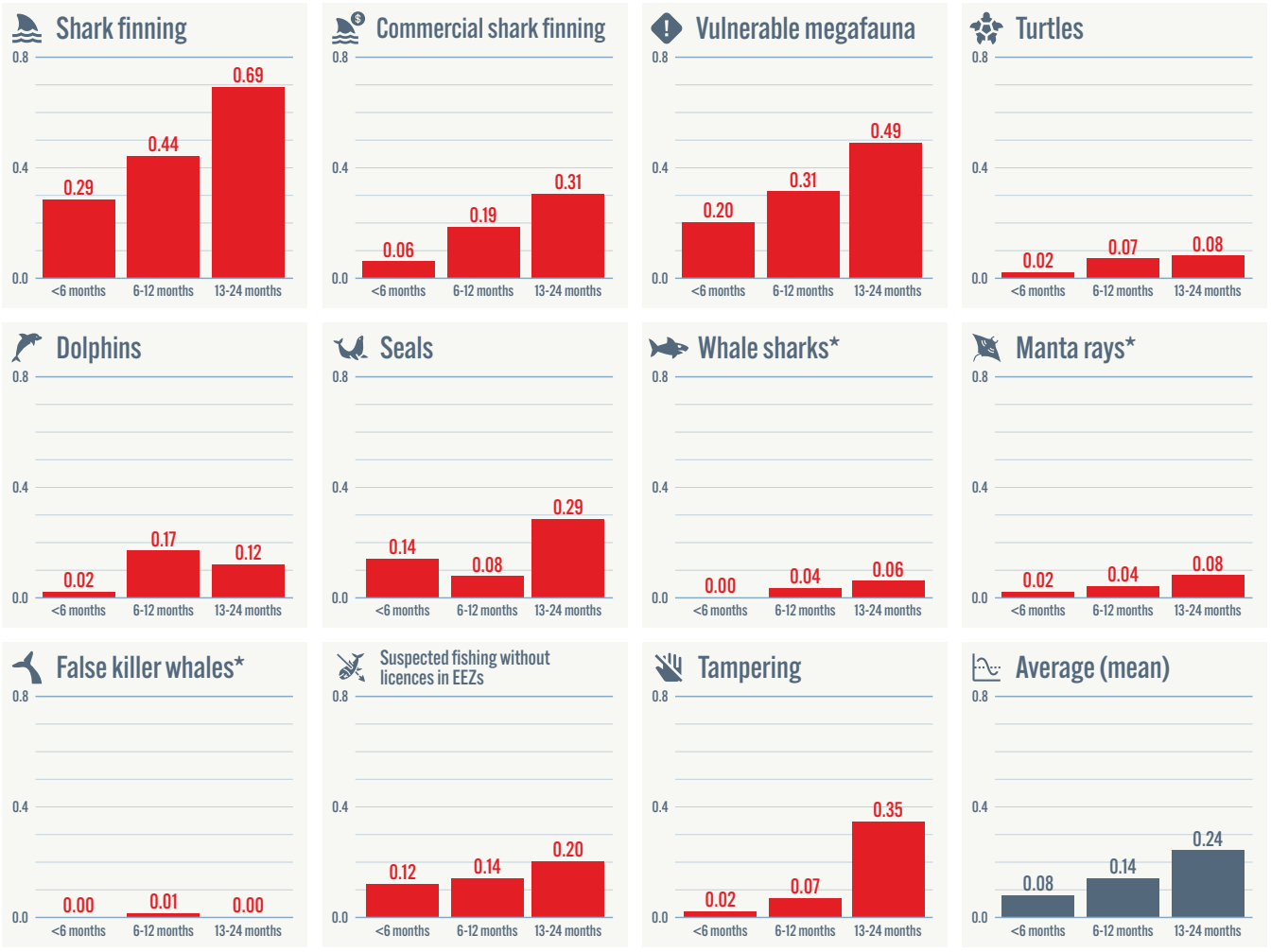
Longer trip length appears to be a key factor influencing this co-occurrence. EJF defines trip length as the length of time (in months) between port visits. EJF found that vessels at sea for more than one year were twice as likely to be involved in destructive fishing practices.[viii] Rates of shark finning - the largest sample set - increased by 143% based on whether a vessel was at sea for less than six months or if it was at sea for 13-24 months (Figure 5). The capture of any kind of vulnerable megafauna also increased by 140% based on these parameters.

[viii] Vessels under 1 year averaged 0.98 destructive fishing indicators vs. vessels over 1 year averaging 2.15 indicators of destructive fishing.

This replicable pattern also applies to indicators of labour abuse and forced labour with 80% of fishers reporting trips of less than 12 months averaging 8.2 forced labour indicators; and the remaining 20% reporting trips of more than 12 months averaging 9.4 indicators. The SEP and NWIO — both with average trip lengths above 11 months — record forced labour indicator rates of 77% and 76% respectively. The SWA, with shorter average trip lengths of 8.9 months, records 63%.



Crew pose with a whale shark caught onboard a light seiner operating in the NWIO.



*Low prevalence rates for some species may reflect rarity of encounters rather than absence of harm.

Figure 6: Average prevalence rates for destructive fishing indicators, grouped by fishing trip length. Vessels reported to have spent more than 24 months at sea (n=4) have been excluded from this figure: the sample is too small to support a reliable estimate.

Table 7: Average number of destructive fishing and forced labour indicators based on grouping vessels by fishing trip length. The total number of vessels adds up to 242 here because not all fishers interviewed by EJF for this report stated the length of their fishing trip.

Trip length	Avg number of destructive fishing indicators	Avg number of forced labour indicators	% of fishers experiencing physical abuse	n= (vessels/fishers)
<6 months	0.7	7.45	16.9%	49 vessels / 71 fishers
6-12 months	1.25	8.20	31.7%	140 / 259
13-24 months	2.15*	9.32	43.7%	49 / 71
>24 months	2.15*	9.58	66.7%	4 / 12

*Destructive fishing indicators: The 2.15 figure covers all vessels at sea for more than 12 months. This is because the underlying dataset only documented four vessels at over 24 months, so the destructive-fishing analysis groups 13–24 and >24 together. The forced labour analysis preserves the split because EJF interviewed 12 fishers who worked for more than 24 months and the >24-month physical violence rate is materially higher (66.7%) than the 13–24-month rate (43.7%) - merging would obscure this finding.

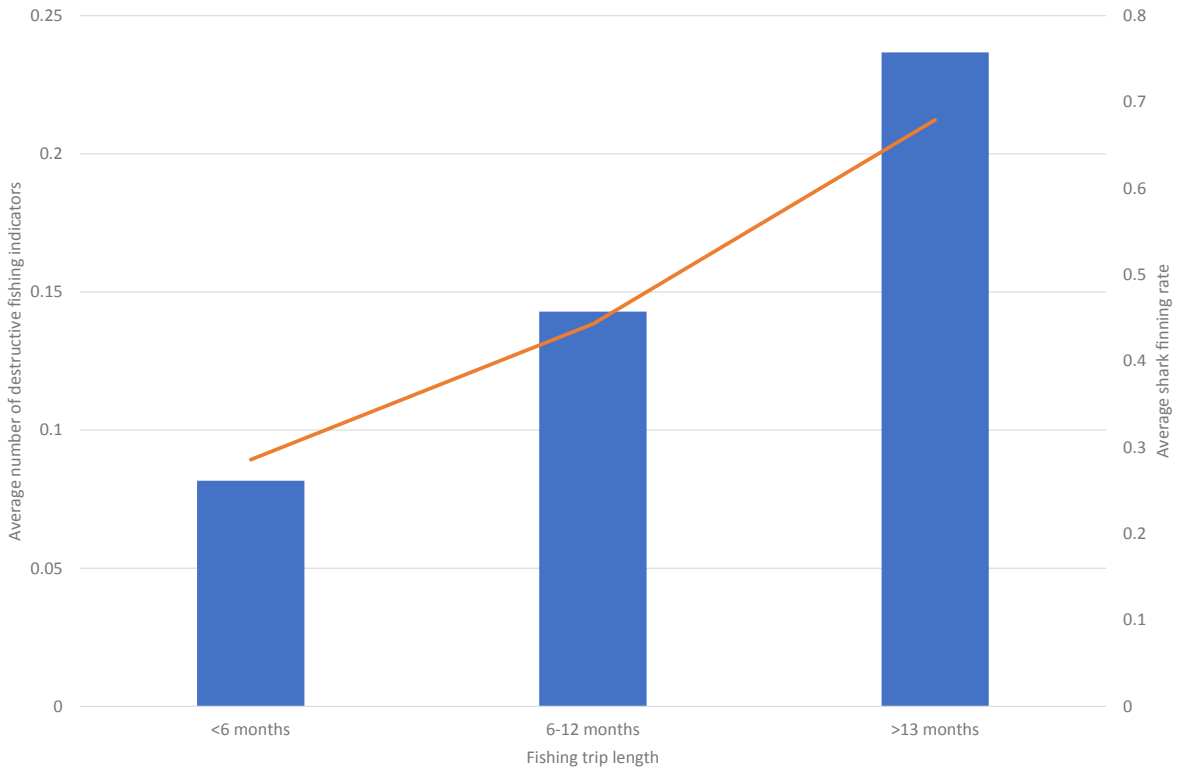


Figure 7: Relationship between destructive fishing indicators and fishing trip length. Note that the >24 months group is merged because the sample (n=4 vessels) is too small to report separately.

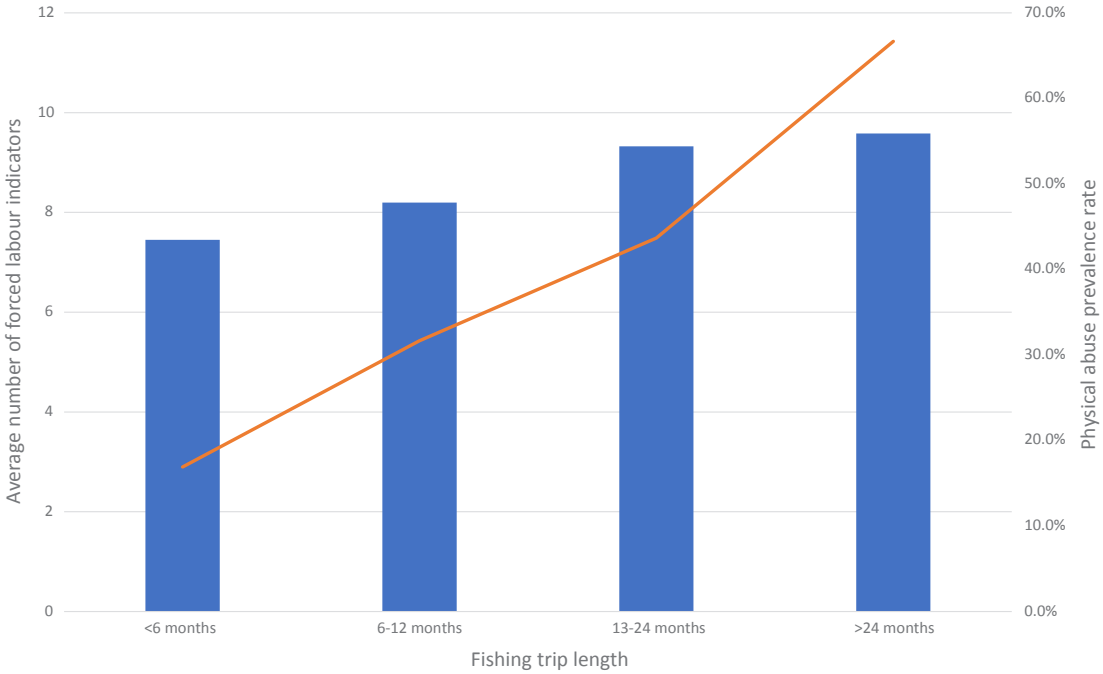
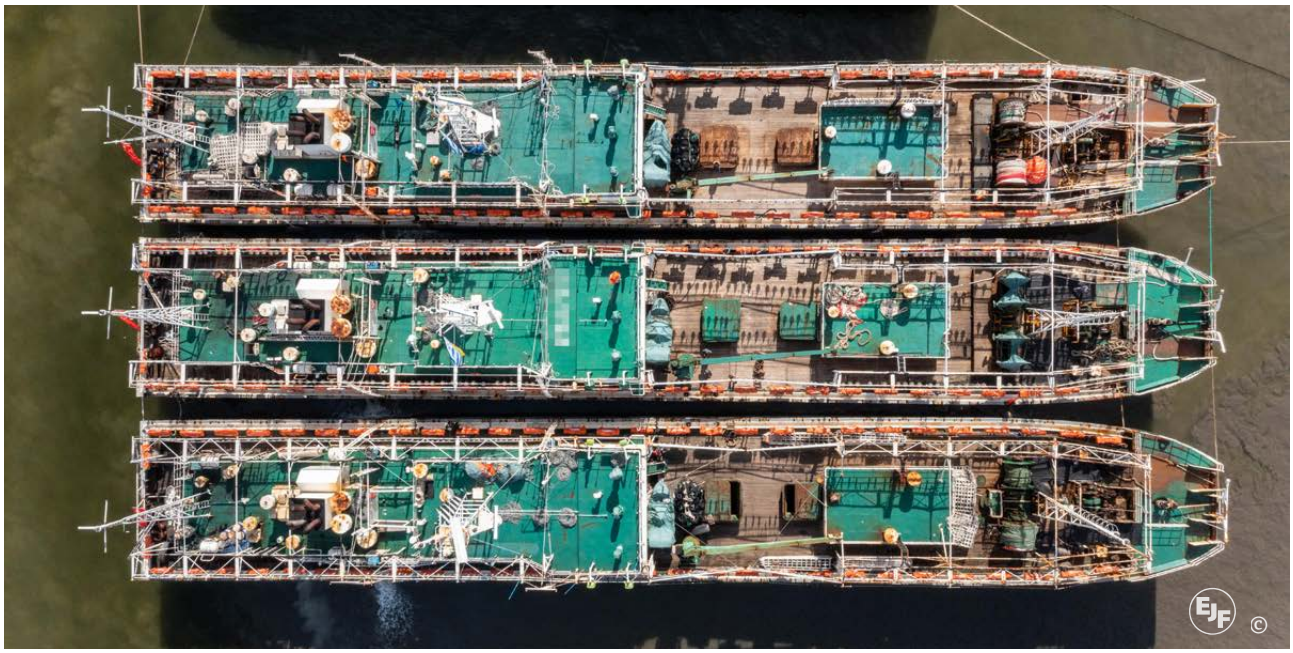


Figure 8: Relationship between forced labour indicators and fishing trip length. The >24 months group (n=12 fishers) is reported separately because the sample is large enough to do so.

"At the beginning, he kept saying he wanted to go home[...] But the captain kept lying to him, 'Yes, later, yes, later'. In the end, after over a year, he said for the last time, 'I want to go home'. The captain said, 'Yes, you will be going home soon.' Maybe in the end, he got stressed, too much on his mind [...] In the end, he stopped eating [...] He had trouble breathing in the end, and he became weak. In the end, that was it [...] he was sick for about two weeks [...] with only a few basic medicines [...] He refused to eat [...] And then, he passed away."

Interview with an Indonesian fisher working onboard a Chinese-flagged light seiner vessel operating in the NWIO, July 2022.



Three squid jiggers photographed in Montevideo port in 2021 - EJF interviews have linked the middle vessel to shark finning, catching of seals, covering the vessel name during fishing operations in the SEP.

Trip length, however, is not the whole story. The SWA records the shortest average trip lengths of the three fisheries (8.9 months) but its vessels rarely return to home ports for inspection. They call instead at Latin American ports — most prominently Montevideo, where in 2019 over 300 foreign vessels entered and only 34 were inspected.[215] The port has also been known for the unloading of deceased crew and for vessels that have a history of switching off their AIS whilst fishing.[216/217] Frequency of port returns alone does not translate into accountability where port-state inspection is weak.



A possible trans-shipment between a Chinese-flagged light seiner vessel operating in the NWIO and a reefer. The photo was reportedly taken in December 2022.

Independent analysis of satellite data from over 8.7 million fishing trips in 2022 found that time at sea was a less important predictor of labour abuse and IUU fishing risk than other vessel characteristics, including flag, gear type and the interaction between the two.[218] Chinese-flagged vessels, for example, were found to be associated with much higher risk profiles purely based on their flag. Trip length is therefore one of several mutually reinforcing enablers, alongside flag state compliance, at-sea trans-shipment, the absence of at-sea observers, and the lack of effective high-seas governance. Each compounds the others - and any intervention that introduced trip caps for DWF vessels would, by the same logic, act on the rest.

Prevalence of human rights abuses across the three squid fisheries – an industry built on exploitation

Interviewees reported an alarming consistency in labour abuses onboard squid vessels across our study. Out of 431 interviewees the median number of FL indicators was 9 out of 12 possible indicators. This evidence indicates that conditions of forced labour are the operating baseline for employment on DWF squid vessels rather than the exception. Forced labour indicators have been analysed per individual interviewee. This is because each fisher may experience different indicators of forced labour.

Table 8: Forced labour indicators identified from EJF's interviews with crew, separated by fishery. A methodology for how EJF deduced whether the criteria for each forced labour indicator was met is found in the Appendix.

	Number of fishers reporting this indicator...					
Forced labour indicator	**In the SWA (n=228)**	**In the SWA (%)**	**In the SEP (n=79)**	**In the SEP (%)**	**In the NWIO (n=153)**	**In the NWIO (%)**
Work with substandard or no wages	173	76%	68	94%	149	97%
Withholding of wages or other promised benefits	140	61%	68	94%	128	84%
Debt bondage or manipulation of debt	167	73%	65	90%	134	88%
Retention of identity documents	210	92%	67	93%	107	70%
Deception	131	57%	53	74%	133	87%
Isolation	203	89%	65	90%	141	92%
Intimidation and threats against workers or workers' relatives	25	11%	16	22%	28	18%
Physical and sexual violence	57	25%	31	43%	61	40%
Restriction of movement	200	88%	60	83%	145	95%
Excessive overtime	216	95%	65	90%	148	97%
Abuse of vulnerability	110	48%	45	63%	91	59%
Abusive working and living conditions	102	45%	58	81%	133	87%

Nearly all fishers working on NWIO vessels were subject to conditions that meet one or more of the ILO's indicators of forced labour. Just 10 of 153 NWIO interviewees experienced fewer than 7 out of 12 indicators during their employment. Light seiners recorded marginally lower rates than multi-gear or squid jigger vessels in the NWIO, while also recording shorter average trip lengths.

Table 9: Comparison of the three squid fisheries for prevalence of forced labour.

Fishery where EJF has conducted investigations	Median reported indicators of abuse out of 12 indicators	% of fishers reporting at least 7 indicators	% of fishers reporting physical violence on board (%, n=x)	Average trip length in months (based on interview testimony)
NWIO (All vessel types)	9/12	93.5%	40% (n=153)	11.9
NWIO light seiners	9/12	91%	37.7% (n=101)	8.7
Southeast Pacific	9.5/12	89.9%	44% (n=79)	14.2
Southwest Atlantic	8/12	64.9%	25% (n=228)	8.9

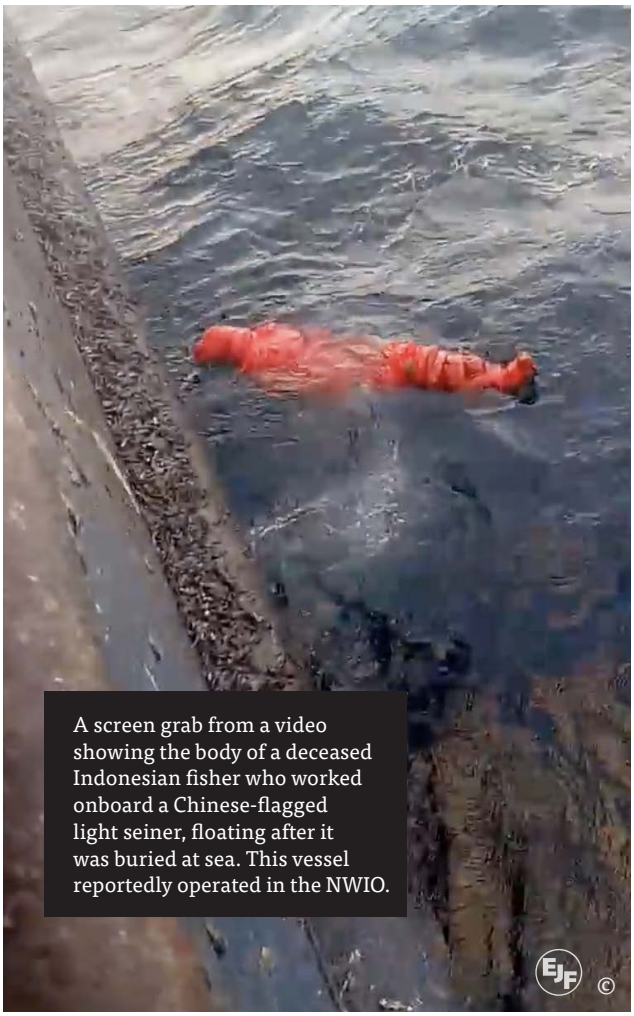
Despite the overall presence of abuse being more systematic on NWIO vessels, the SEP stands out as having the highest median number of indicators per fisher (9.5/12) and the highest prevalence of physical abuse across the study (44%). This coincides with vessels there having the longest average trip length of 14.2 months.

"Yes, I was hit. When I first started working on the vessel, I felt nauseous, and I rested, sitting down in the back [of the vessel]. The captain approached me and hit me."

Interview with an Indonesian fisher working onboard a Chinese-flagged squid vessel operating in the SEP, March 2023.

Although the NWIO fishery scores consistently appalling rates of abuse, only 70% of fishers reported retention of identity documents compared to rates of over 90% in the other two fisheries. This may be due to the composition of the NWIO fleet as mainly long-range Chinese-flagged vessels that rarely call into ports in the NWIO region. Instead, they rely on at-sea trans-shipment for transfers during the fishing season and then return to China. In contrast, vessels in the SWA and SEP call at Latin American ports (see below) making document retention a more relevant mechanism for restricting crew mobility.

Deaths at sea across one in twelve vessels studied



A screen grab from a video showing the body of a deceased Indonesian fisher who worked onboard a Chinese-flagged light seiner, floating after it was buried at sea. This vessel reportedly operated in the NWIO.

"After he passed away, as Muslims, we washed his body. I was the one who bathed him[...] I thought the coffin would be sent home[...] In fact, it was kept in the freezer first [...] mixed with the squid and other catches[...] After four months [...], the Indonesian crew members' cell phones were asked for by the foreman[...] After all the cell phones have been taken away [...] they just talked openly that they are going to throw him into the sea [...] What could we do? We couldn't defend it [...] He was buried at sea, thrown into the sea."

Interview with an Indonesian fisher working onboard a Chinese-flagged light seiner vessel operating in the NWIO, July 2022.



The deceased Indonesian crew member on a Chinese-flagged light seiner was put to rest inside a makeshift coffin. This vessel allegedly operated in the NWIO area.

EJF identified at least 25 deaths occurring on 20 different squid vessels analysed for this report. Every vessel was flagged to China at the time that the deceased fishers were working on board, and every vessel targeted squid: six were jiggers, seven were light seiners, four vessels used multiple gears (two deaths from Han Rong 368[219]), one squid/saury vessel, and two trawlers.

One interviewee described how a crewmember onboard a Chinese squid jigger was stabbed to death after an argument escalated into a physical fight. The fight allegedly arose after the second foreman forced the crew to continue unloading the catch after working to trans-ship squid to a reefer for three consecutive days. The victim died onboard before the vessel could dock for proper medical treatment.

"It started when the vessel transferred the squids to the collecting vessel for three days [consecutively] [...] An argument broke out between the second and the third foreman. The second foreman mentioned a Chinese crew member's name and this crew got offended. Then, the second foreman and the Chinese crew member fought [...] I saw the second foreman's ear was bleeding [...] Then, during the rest hours, an incident happened in the foreman's room. When the first foreman came to the room, the Chinese crew had been stabbed by the second foreman. The Chinese crew member had not died yet after he was stabbed. The vessel was about to dock to bring him to the hospital. But after the vessel sailed for a day, he died because his condition was severe."

Interview with an Indonesian fisher working onboard a Chinese-flagged squid jigger vessel operating in the SEP and SWA, September 2022.

OSINT research conducted by the Outlaw Ocean Project documents at least 22 crew members who died or went missing aboard Taiwanese-flagged squid vessels and at least 3 aboard South Korean-flagged squid vessels between 2019 and 2025.[220] Three of the 16 Taiwanese vessels Outlaw Ocean identified as having had a death or disappearance onboard are also covered in EJF's interview dataset, where fishers reported other indicators of forced labour.

Combined research between EJF and the Outlaw Ocean has identified at least 50 fishers who died or went missing aboard Chinese, Taiwanese and Korean vessels between 2019 and 2025.

Table 10: Suspected causes of death as described by interviewees.

Suspected cause of death	Deaths	% (n=25)
Suspected beriberi	9	36%
Violence/murder	1	4%
Suicide	1	4%
Untreated/under-treated medical conditions*	5	20%
Workplace accidents	3	12%
Unknown sickness	3	12%
Unknown reasons	3	12%
Total	**25**	-

* These included suspected cases of appendicitis, 'chest pain', food poisoning and heart attack.

Testimony shared by witnesses with EJF indicates that at least 9 of the 25 deaths were due to beriberi disease (thiamin or vitamin B1 deficiency). Beriberi can be caused by a lack of decent, nutritious food and safe drinking water.[221/222] Beriberi was a widespread killer aboard 19th-century naval and merchant vessels.[223] In 1884 it was discovered that the disease could be eliminated through dietary reforms on vessels. This resulted in beriberi being eradicated from the Japanese Navy within three years, more than thirty years before vitamin B1 itself was identified.[224]

Over half of the deaths identified by EJF were due to medical reasons that would likely not be fatal in a properly provisioned vessel with timely medical access.

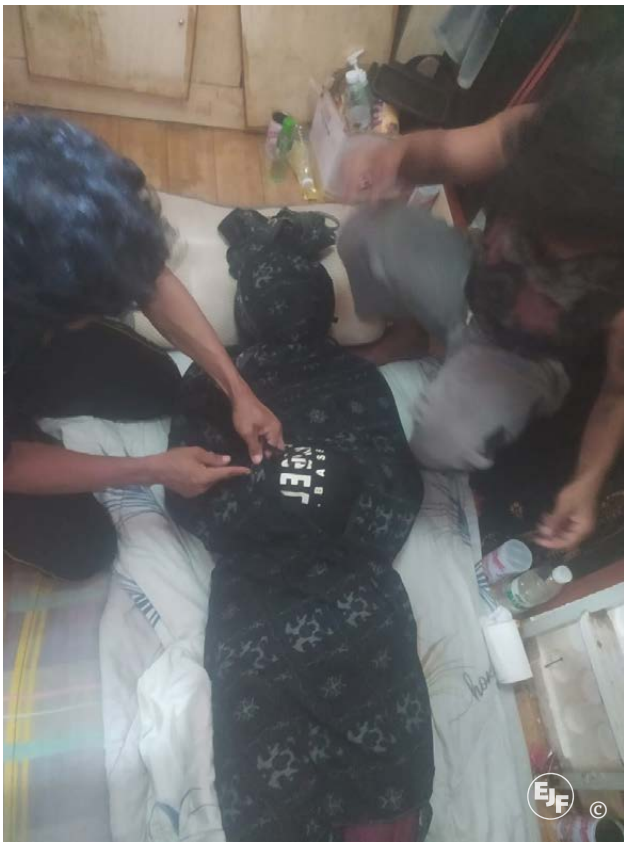


Photo of a deceased crew member who is suspected of having died from beriberi on a Chinese light seiner vessel operating in the NWIO.

The disease has been described as a "red flag for severe neglect"[225] and is still responsible for the deaths of untold numbers of fishers every year.[226] In the 21st century, even at sea, it is an entirely preventable and rapidly reversible disease, and patients can recover within 24 hours if treated correctly. Its suspected presence on seven DWF squid vessels, revealed in this study, is emblematic of a broader lack of accountability and scrutiny across DWF vessels as documented in other literature.[227]

> ***"He didn't realize that he got beriberi. Even after it became clear that he had that sickness, the captain still told him to work, he wasn't allowed to rest [...] Eight of us [the Indonesian crew members] tried to ask the captain for medicines, and he gave us some medicines. But the medicines were just whatever was there on the vessel [...] I mean, the sickness was beriberi, but the medicines given [to the deceased] were irrelevant medicines. It only made the swelling worse instead of healing him."***
>
> Interview with an Indonesian fisher working onboard a Chinese-flagged light seiner vessel operating in the NWIO, May 2025.

Prevalence of fisheries and labour abuses across the three flag states

The Chinese-flagged DWF squid fleet performed systematically worse than the Taiwanese and Korean fleets across virtually every indicator analysed in this report — both for destructive fishing and for indicators of forced labour. This is a reflection of China's current flag-state regulatory landscape which relies on voluntary measures and a patchwork of administrative notices designed to encourage compliance of China's tuna fleet, allowing squid vessels to operate in a near total governance vacuum. EJF's findings match those of Selig et al. (2022) which found that Chinese-flagged vessels were associated with a higher risk of both labour abuse and destructive fishing practices.[228]

Destructive fishing practices

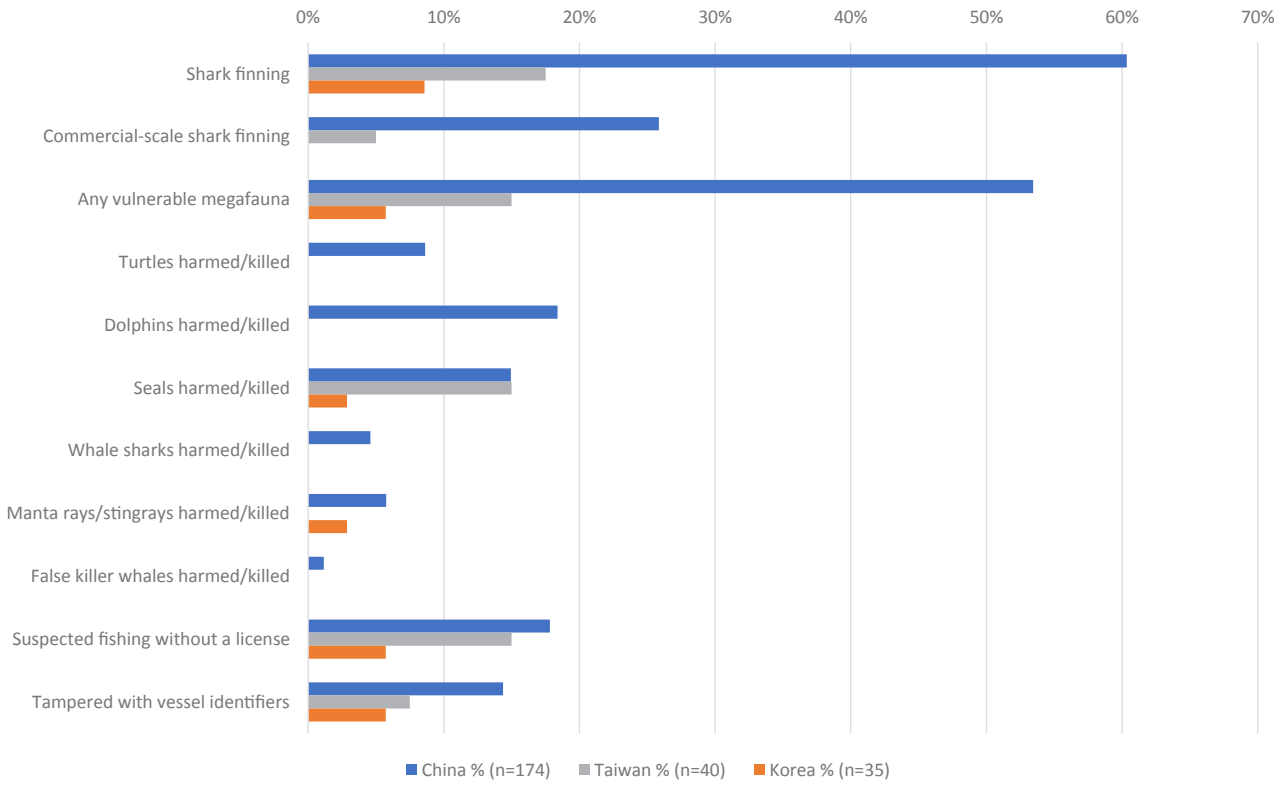


Figure 9: Prevalence of destructive fishing practices by flag state as identified per vessel.

Rates of shark finning were 7 times higher on Chinese vessels compared to Korean vessels and 3.4 times higher than Taiwanese vessels.

Shark finning was reported on 105 Chinese-flagged vessels (60.3% of Chinese vessels analysed for this report). This was 7 times higher than recorded on Korean vessels and 3.4 times higher than on Taiwanese vessels. Harming of megafauna was also 9.4 times higher and 3.6 times higher, respectively compared to the other two flag states.

Table 11: Reported rates of destructive fishing practices across the three flag states. The final two columns show how many times higher Chinese rates are than Korean or Taiwanese rates.

Destructive fishing indicator	% of vessels flagged to China (n=174)	Korea (n=35)	Taiwan (n=40)	China: Korea	China: Taiwan
Shark finning	60.3%	8.6%	17.5%	7.0×	3.4×
Commercial-scale shark finning	25.9%	0%	5.0%	—	5.2×
Any vulnerable megafauna capture	53.4%	5.7%	15.0%	9.4×	3.6×
Turtles harmed/killed	8.6%	0%	0%	—	—
Dolphins harmed/killed	18.4%	0%	0%	—	—
Intentional seal/sea lion capture	14.9%	2.9%	15.0%	5.2×	1.0×
Whale sharks harmed/killed	4.6%	0%	0%	—	—
Manta rays harmed/killed	5.7%	2.9%	0%	2.0×	—
Suspected EEZ fishing without licence	17.8%	5.7%	15.0%	3.1×	1.2×
Vessel identifier tampering	14.4%	5.7%	7.5%	2.5×	1.9×

Intentional capture of seals and sea lions presents the only exception, practiced by 15% of Taiwanese vessels and 14.9% of Chinese ones. Although this reflects the overlapping SWA operating areas of the smaller Taiwanese squid fleet with Chinese vessels, it is an alarming indictment on the current compliance levels of Taiwanese vessels, given Taiwan has had a comprehensive Wildlife Conservation Act in place since 1989.[229]

"The bosun ordered the crew members to harpoon seals[...]He ordered crew members to harpoon them [the seals], and only their teeth were taken[...]Their meat was thrown away[...] 11 seals [were caught] in 5 months, by the order of the bosun."

Interview with an Indonesian fisher working onboard a Taiwanese-flagged squid/saury vessel operating in the SWA, June 2023.

Forced labour indicators

For forced labour, the comparisons across flag states are narrower. China and Taiwan score relatively similar prevalence patterns for common indicators such as work for substandard wages and debt bondage. This convergence likely reflects the underlying economics of DWF squid fleets. Operators with thin margins have a direct financial incentive to suppress wages and bind workers to vessels through debt, and in the absence of binding flag-state or RFMO labour protections, nothing constrains them from doing so.[230] The manning agencies in Indonesia and the Philippines (The main labour-sending countries) also contribute to the prevalence of forced labour through exploitative practices and debt bondage.[231]

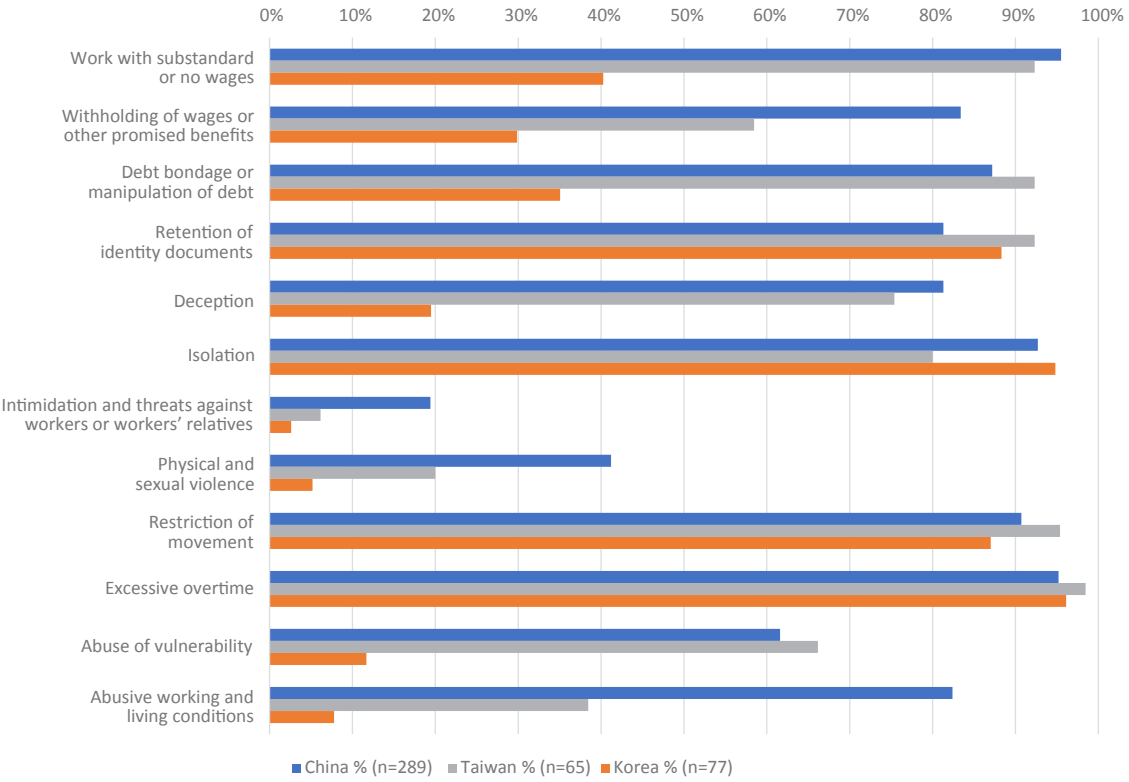


Figure 10: Prevalence of forced labour indicators by flag state as reported by interviewees.

Workers prepare to sort their squid catch onboard a light seiner in the NWIO.



Table 12: Forced labour indicators as identified through interviews by flag state.

	Number of fishers reporting this indicator on					
Forced labour indicator	**Chinese DWF squid vessels (n=289)**	**Chinese DWF squid vessels (%)**	**Korean DWF squid vessels (n=77)**	**Korean DWF squid vessels (%)**	**Taiwanese DWF squid vessels (n=65)**	**Taiwanese DWF squid vessels (%)**
Work with substandard or no wages	276	95.5%	31	40.3%	60	92.3%
Withholding of wages or other promised benefits	241	83.4%	23	29.9%	38	58.5%
Debt bondage or manipulation of debt	252	87.2%	27	35.1%	60	92.3%
Retention of identity documents	235	81.3%	68	88.3%	60	92.3%
Deception	235	81.3%	15	19.5%	49	75.4%
Isolation	268	92.7%	73	94.8%	52	80.0%
Intimidation and threats against workers or workers' relatives	56	19.4%	2	2.6%	4	6.2%
Physical and sexual violence	119	41.2%	4	5.2%	13	20.0%
Restriction of movement	262	90.7%	67	87.0%	62	95.4%
Excessive overtime	275	95.2%	74	96.1%	64	98.5%
Abuse of vulnerability	178	61.6%	9	11.7%	43	66.2%
Abusive working and living conditions	238	82.4%	6	7.8%	25	38.5%

Measuring forced labour frequency demonstrates just how much worse conditions on Chinese vessels are. 85.1% of Chinese-flagged vessels had eight or more indicators onboard compared to 70% of Taiwanese vessels and 25.7% of Korean vessels. Of the 68 vessels in our dataset on which EJF identified extreme cases of abuse (severe physical or sexual abuse, or deaths on board), 96% were flagged to China. Unlike Taiwan, which extended its labour protections to migrant fishers under the 2022 Action Plan for Fisheries and Human Rights, and South Korea, whose Seafarers Act formally prohibits forced labour and passport retention, China has no domestic labour legislation that extends meaningful protections to the migrant fishers working on its DWF squid vessels.

Table 13: Forced labour frequency across the three flag states.

Flag state	Vessels with 8 or more forced labour indicators	Total vessels in database	Percentage of total
China	152	174	87.4%
Taiwan	28	40	70.0%
South Korea	9	35	25.7%

Consistently high rates for isolation and restriction of movement across flag states could be attributed to long fishing trips and the denial of access to phones or WiFI. Excessive working hours, classified as present when fishers work more than 14 hours per day, are almost identical across the three fleets. This convergence likely reflects two factors. First, squid jigging and light-luring are highly labour-intensive fishing methods. Second, in the face of thin and falling margins, operators have a direct financial incentive to extract more hours from their crew.[232/233]

"WiFi was only for the head engineer and the captain [...] The Indonesian crew members weren't allowed to use it."

Interview with an Indonesian fisher working onboard a Chinese-flagged squid vessel operating in the SEP, June 2025.

Chinese vessels reportedly spent an average of six months longer at sea compared to Korean or Taiwanese vessels. Out of 53 vessels in our study that reportedly spent longer than 12 months at sea, all but one vessel was Chinese-flagged.

Indonesian fishers wave to their fishing vessel as they disembark.



Table 14: Trip length compared with forced labour rates across the three flag states by interviewee.

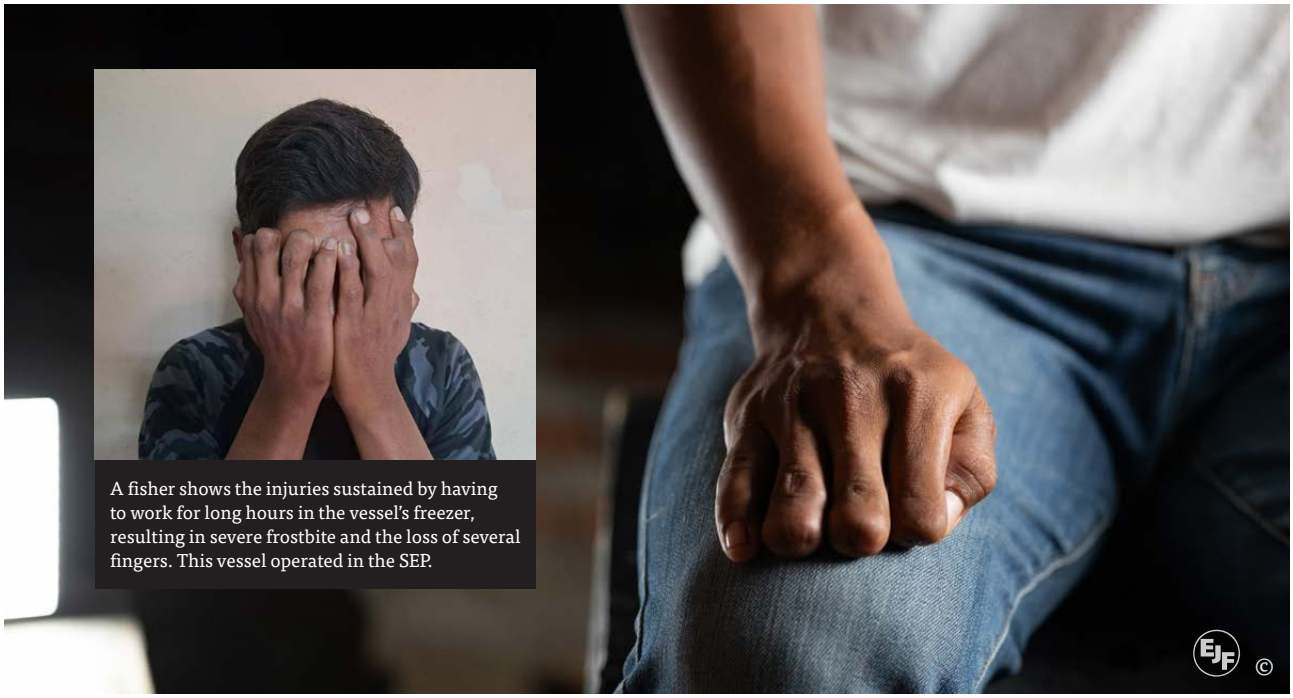
Flag state (n=number of interviewees)	Average trip length (months)	Median reported indicators of FL (out of 12 indicators)	% of fishers reporting at least 7 indicators	Physical violence rate (%)
China (n=289)	12.2	9	92.4%	41.2%
South Korea (n=77)	6.2	5	15.6%	5.2%
Taiwan (n=65)	5.7	9	81.5%	20.0%

Table 15: Trip length compared with destructive fishing rates across the three flag states by vessel.

Flag state (n=number of vessels)	Average trip length (months)*	Average number of destructive fishing practices reported on vessels
China (n=174)	12.6	1.72
South Korea (n=35)	6.27	0.26
Taiwan (n=40)	5.67	0.6

* Trip length varies slightly depending on interviewee vs. vessel reporting. This is because each interviewee's response is recorded individually, whereas each vessel's measure is the combined average of (sometimes multiple and varying) interviewee responses.

As set out on page 43, longer trips correlate with higher rates of both destructive fishing and forced labour, and the data above suggests that the Chinese-flagged fleet's worse outcomes on virtually every other indicator analysed in this report are not separable from the fact that its vessels stay at sea, on average, roughly twice as long as Taiwanese and Korean vessels.



A fisher shows the injuries sustained by having to work for long hours in the vessel's freezer, resulting in severe frostbite and the loss of several fingers. This vessel operated in the SEP.

An opportunity for multilateral coordination

Forming a coalition of affected coastal states to tackle regional fisheries concerns is not without precedent. For example, in 2021, Chile, Ecuador, Peru and Colombia issued a joint statement through the Permanent Commission for the South Pacific (CPPS) stating their commitment to facilitating information sharing efforts and taking joint action against IUU fishing in their EEZs.[234] 12 countries across the region also conduct joint naval and coast guard exercises on an annual basis, with the aim of better policing the ecologically important waters of these coastal countries.[235]

As this report has described, unregulated squid fishing often takes place just outside of countries' EEZs. This zone is even referred to colloquially as Mile 201 in the SWA given its close proximity to Argentina's EEZ boundary - extending 200 miles from the coastline.[236] Across the globe there are a number of other countries that face similar challenges from DWF squid fleets that engage in unregulated fishing on the high seas and conduct illegal intrusions into coastal state waters.[237] The absence of an existing RFMO in the SWA and NWIO, alongside an ineffective SPRFMO in the SEP, leaves these countries to fend for themselves.

EJF's own analysis puts the number of worldwide so-called Mile 201 countries at 24 (full table in the Appendix). The list includes several developing countries with limited capacity to monitor fishing activities along their coastlines or to respond to threats posed by so many industrial fishing vessels.

These countries were identified as vulnerable to DWF squid fleets for one of two reasons. Either these fleets operate for part of the year on the edge of their EEZs, and/or the national fishing industry of these countries relies on either the prevalent squid population or related species (tuna, tuna-like species) for food security and the livelihoods of local fishers.

Improved multilateral coordination efforts in Latin America should spur countries similarly affected by unregulated squid fishing to seek out coalition partners to instigate unified multilateral negotiations, aimed at resolving the concerns that these countries hold. For instance, this could involve NWIO countries establishing a joint diplomatic platform to advocate collectively at the IOTC and in relevant UN forums. Countries could also advocate for the inclusion of squid fisheries in the mandate of the BBNJ. Other options under this instrument could involve countries or groups of countries calling for an ABMT or environmental impact assessment (EIA) in order to spur multilateral efforts towards a solution.[238]

The Indian Ocean Rim Association's (IORA) own adopted guidelines (May 2025) formally recognise the RFMO gap for non-tuna species in the Indian Ocean and provide a framework for coordinated action, but these guidelines do not yet address the specific challenge of unregulated squid fishing, which is the most commercially significant example of the gap they identify.[239]

NWIO states share a compelling common interest in fighting the unregulated extraction of a keystone species from the waters adjacent to their EEZs by a fleet that is overwhelmingly from a single flag state. This fleet threatens to undermine globally important tuna fisheries, artisanal fishing livelihoods, and the marine ecosystems on which their citizens depend. The Latin American precedent shows that collective action is possible. It is also crucial to halt the progressive depletion of a shared resource in a governance vacuum that benefits no one except the fleet operators extracting from it.

A line of Peruvian artisanal squid fishing vessels. Credit: National Society of Artisanal Fishing of Peru (SONAPESCAL).





At-sea trans-shipment between a squid jigger and a reefer in the SWA. Credit: Argentine Coast Guard.

Market analysis, where does this squid all go?

How squid enters the global seafood supply chain

EJF analysed the onward port visits of reefer vessels that had collected catch from squid fishing vessels in the NWIO, SEP and SWA in order to understand where the squid was being landed and processed. The data shows a clear clustering pattern, with reefers servicing different fishing grounds tending to land at different Chinese ports. These landing preferences appear to track the squid species being caught rather than the origin fishery. Purpleback squid from the NWIO, for example, is landed more frequently in Fuzhou and Shidao, jumbo squid from the SEP is landed more in Zhoushan, and Argentine shortfin squid is more landed in Busan and Shidao.

This pattern is consistent with the broader specialisation of Chinese squid processing capacity by port: industry analysis confirms that municipal governments in Zhoushan, Fuzhou and Rongcheng have actively competed for DWF catch through differential subsidies and processing investment, with each port developing distinct species-handling and product-category strengths.[240] Securing processing capacity for raw squid material is one element of a wider race between Chinese coastal provinces to become the country's "strongest seaward province" (海洋强省) — a framing that has been formally adopted in provincial development plans across Zhejiang, Fujian and Shandong.[241]

Table 16: Percentage of reefer trips of each fishing ground visit important squid landing ports.

Port	SEP (n = 441) (%)	SWA (n = 260) (%)	NWIO (n = 338) (%)
Zhoushan	68.0	21.5	3.6
Busan[ix]	23.1	44.6	18.3
Ningbo	31.1	14.6	3.8
Shidao	23.4	49.6	28.4
Fuzhou	6.8	5.4	45.3
Taizhou	3.4	0.8	12.4

[ix] For the analysis of this table, reefer trips to Busan were excluded when Busan served as the first port of call. For details please see text.

Just over half of the 1,588 reefer trips analysed (50.4%) called at Busan directly after receiving trans-shipments at sea. However, 67% of those reefers spent less than a day at the port, compared to stays of up to 15 days at ports like Zhoushan in China. Cargo unloading is therefore unlikely to be taking place in Busan when it is the first port of call. Testimonies shared with EJF suggest that both Busan and Singapore are used by the Chinese fleet as third-country ports for crew rotations rather than for landing catch — vital logistics hubs that enable the global squid supply chain without ever appearing in it as processing destinations.

Busan is an important crew transfer hub for Chinese DWF vessels.





Crew members sorting through the various catches on the deck of a Chinese-flagged light seiner vessel operating in the NWIO.

> ***"I went back to Busan [port] from the high seas. Then, I had to stay overnight there. And then, in the next morning, I went to Busan Airport and then to Incheon. Then, I flew to Jakarta."***

Interview with an Indonesian fisher working onboard a Chinese-flagged squid jigger operating in the SEP, March 2025.

After trans-shipping in the SEP, 68% of reefer trips were destined for Zhoushan port and 31% for the close-by port of Ningbo in Zhejiang province. Despite slowly losing its importance as a squid processing hub due to rising labour costs,[242] Zhoushan remains the most favourable unloading port and trading hub for hundreds of squid fishing companies. Inside the Zhoushan National Distant Water Fisheries Base, where the China Distant Water Squid Trading Centre is located, different species of squid unloaded from reefers are auctioned off. In 2025, the Centre traded 325,500 tonnes of DWF seafood, accounted for about 60% of China's squid trade.[243] Zhoushan also retains a sizable traditional industry processing 40,000 tonnes of dried squid annually, generating revenues of approximately RMB 5 million (US$731 million).[244] Many of these traditional dried squid products are processed from jumbo squid originated from the SEP.[245]

Almost 50% of the reefer trips from the SWA ended at Shidao port, Shandong province, alongside 23% of reefer trips from the SEP and 28% of from the NWIO. Shidao now handles over 400,000 tonnes of raw squid material annually, generating revenue of approximately RMB 9 billion (US$1.32 billion).[246]

This growth raises further concerns. In 2023, the Outlaw Ocean Project revealed that at least two major processing subsidiaries owned by Chishan Group - based in Shidao - were reportedly using Uyghur forced labour in their processing plants.[247]

Vessel tracking data shows that Fuzhou port in Fujian province is an emerging hub for landing squid caught in the NWIO. Unlike reefers operating in the SEP and SWA, reefers operating in the NWIO rarely docked in Busan and rarely ventured to other fishing grounds (only 6% of them were recorded in other areas). This is likely due to route convenience and the fact that over half of the vessels operating in the NWIO are owned by companies based in Fujian province.

The Mawei Free Trade Zone in Fuzhou is not only the most important DWF seafood distribution centre in southern China but it also harbours China's most prominent shark raw material trading hub.[248] In fact, Pingtan Marine Enterprise (PME), the company that owns over 15% of the NWIO vessels investigated by EJF for this report, makes Fuzhou its home port (See PME box). PME was publicly implicated in the trans-shipment of thousands of sharks after a reefer under its ownership was seized inside the Galapagos National Park in 2017.[249] Sharks discovered onboard this reefer included whale sharks that were possibly caught by purse seiners[250] – a gear type that is widely deployed and operated by PME in the NWIO. The PME reefer was subsequently connected to the Mawei Fuzhou shark trading hub.[251]

Pingtan Marine Enterprise

Pingtan Marine Enterprise (PME) is one of the largest, privately-owned fishing conglomerates in China, although the company is not without state involvement. For instance, in 2015, state-owned China Agricultural Industry Development Fund Co., Ltd. completed a strategic investment of RMB 400 million (approximately US$ 65 million at the time) in PME's wholly-owned fishing subsidiary - Fujian Provincial Pingtan County Ocean Fishing Group Co., Ltd (Pingtan Fishing). Together with its affiliate Fuzhou Honglong Ocean Fishing (Honglong), Pingtan Fishing controls nearly 100 fishing vessels and reefers.[252] In the NWIO alone, PME operates at least 54 light seiners and six reefers. 17 of these (31.5%) are on our VOI list.

PME's history offers an unusually clear case study of how Chinese DWF capacity is built and rebuilt around regulatory constraints. In 2012, the Chinese government introduced controls limiting DWF vessel numbers, legislating that vessels could only be 'replaced' on the basis of existing company vessel quotas.[253] In 2014, Fuzhou Honglong used RMB 68.5 million (US$ 10 million) in government subsidies to replace 23 old vessels with new trawlers intended for the waters of Indonesia, India and the SEP.[254] However, when Indonesia issued a ban on foreign vessels fishing in their EEZ at the end of 2014, PME announced plans to replace these vessels with light seiners that would operate in the NWIO and Northwest Pacific Ocean instead.[255] By 2019, PME had registered 59 newly replaced squid jiggers and light seiners with the Fujian provincial government, alongside a further 10 vessels under Honglong's name[256] – at least 27 of which were deployed to the NWIO.[257]

The replacements represented a significant capacity upgrade. Annual catch capacity rose from an estimated 80,000 tonnes to 110,000 tonnes. Average engine power more than doubled from an average 705 kW to around 1620 kW.[258] Unit gross tonnage also increased from between 192 to 480 tonnes before to an average of 1140 tonnes for light seiners and 1100 tonnes for squid jiggers - a 130-470% increase.[259]

In December 2022, nine entities associated with PME's beneficial owner, Xinrong Zhuo, along with 125 vessels associated with the company were sanctioned by the U.S. Department of the Treasury's Office of Foreign Assets Control (OFAC) on the basis of the Global Magnitsky Human Rights Accountability Act.[260] It was the first time the US Treasury had sanctioned a NASDAQ-listed company. The human rights abuses that triggered the sanction — physical violence, excessive overtime, restriction of movement, abusive working and living conditions, withholding of wages, deception — match the ILO indicators of forced labour identified through EJF investigations.

According to C4ADS's recent investigation, the 2022 sanction did not materially constrain PME's operations. A new entity, Fujian Juchangtai Fishery Group Co., Ltd., was set up in 2021 and has been run by Xinrong Zhuo's family members since the sanction. Between 2024 and 2025, at least 22 fishing vessels were sold and transferred from Pingtan Fishing or Honglong to Juchangtai.[261]

Supply chain analysis conducted by the Outlaw Ocean Project in 2023 traced PME-caught squid through five Chinese processors to 61 importers — based principally in the United States (63.9%), Canada (14.7%) and Spain (14.7%) — and ultimately to 47 buyers in the United States (68%), Canada (17%), Spain (6.4%) and Australia (4.2%).[262] EJF's own analysis using TradeData Pro identified 178 unique importers or buyers purchasing approximately 22,620 tonnes of squid products from these five processors between 2020 and 2025: approximately 56.4% of the shipments entered the US market, 12% Spain, 7.6% Australia and 7% Morocco. These findings link PME squid to some of the most influential seafood markets whilst being credibly linked to large-scale shark trans-shipment, forced labour, and the use of unregulated fishing grounds.

How high-risk products reach major consumer markets

Between 2020 and 2024, China was the world's largest exporter of squid and cuttlefish, accounting for approximately 27% of global exports — roughly double the next largest exporter, Peru (14%), and ahead of the EU (11%), Indonesia, India, and Argentina (7% each).[263] Chinese exports flowed primarily to Japan (19%), Thailand (14%), South Korea (12%), the EU (10%), the Philippines and the United States (7% each), with further shipments reaching the UK, Canada, and Australia among other countries.[264]

On the import side, the EU was the world's largest market for squid and cuttlefish in the same period, accounting for approximately 29% of global imports, followed by China (21%), Thailand (11%), Japan (8%), South Korea (8%) and the United States (4%). Within the EU, Spain was responsible for half of all such imports - making it, when EU member states are counted individually, the world's second-largest squid importer after China.[265]

These trade flows demonstrate that major end markets—including the EU, UK, US, Japan and South Korea—are reliant on global squid supply chains in which Chinese processors and exporters play a dominant role. Where import controls are weak and transparency is limited, these same channels facilitate market access for squid associated with environmental crime, labour abuse and illegal fishing.

EJF's investigations have established credible supply chain links between high-risk squid vessels operating in the SWA, SEP and NWIO, and seafood buyers in key global market states including the EU, Japan, the United States, South Korea and the United Kingdom.

EJF has identified 187 importers and buyers of seafood caught in the SWA that is potentially from vessels implicated in either deaths or physical abuse of crew.[266] EJF's research identified 58 Chinese-flagged vessels operating in the SEP that are implicated in fisheries or labour abuses. Of these, 23 currently have approval to export their products to the EU, and 20 are authorised to export to the UK.[267]



Two Chinese-flagged vessels standing by at sea.

41% of Taiwanese FIP vessels implicated in either destructive fishing or labour abuses



An Indonesian fisher posing with a seabird on board a Taiwanese-flagged squid vessel operating in the SWA.

Out of 83 Taiwanese-flagged vessels listed on the Southwest Atlantic Argentine Shortfin Squid Fishery Improvement Project (FIP)[268], 41% of them were involved in either destructive fishing practices or labour abuses through EJF investigations. This FIP was initiated in 2022 with the aim of improving data collection and monitoring of the SWA squid fishery.[269/270]

FIPs are multi-stakeholder programmes - typically initiated by industry actors with NGO and seafood-buyer support - that publish a multi-year workplan for moving a fishery toward Marine Stewardship Council certification or equivalent sustainability standards.[271]

FIP membership is widely used by retailers, foodservice companies and processors as a way of verifying and promoting sustainability in global fisheries.

EJF's findings on Taiwan-flagged operations in the SWA are corroborated and extended by independent open-source research conducted by The Outlaw Ocean Project. Outlaw Ocean's investigation into Taiwanese and South Korean distant-water squid fleets, drawing on port records, news reporting, government bulletins, satellite data and crew social media, identified at least 22 crew members who died or went missing while working aboard Taiwanese-flagged squid vessels between 2019 and 2025, and at least 6 additional workers reported injured on six different ships.[272]

Outlaw Ocean identified at least two companies that are members of this FIP exporting squid products to the United States: Ammon International and Fue Shin Fishery. Between 2020 and 2025, Ammon International sent at least 4,000 tons of squid products to importers in the United States. This includes companies like Baywatch Seafood, Imaex Trading, and Sea Win.[273]

Taken together, these findings raise serious questions about the use of FIP membership as a market-facing sustainability signal: nearly half the participant fleet was reportedly linked to destructive fishing or labour abuses on EJF's evidence alone, and the products of these vessels are entering US foodservice supply chains under the framing of supporting fishery improvement.[274]

Two operators from the SEP stand out - the Zhoushan Distant Water Squid Professional Cooperative and the China National Agricultural Development Group (which owns the China National Fisheries Corporation (CNFC) – a state-owned conglomerate which plays one of the most influential roles in the entire Chinese squid value chain.[275] Out of 12 vessels under the Zhoushan Squid Cooperative implicated in either fisheries or physical abuse, three were authorised to export to the EU and one was authorised to export to the UK. Out of 10 vessels owned by the CNFC, three vessels were authorised to export to the EU and two were authorised to export to the UK.[276]

Import controls are hindered by structural weaknesses

Several leading markets, including the EU and the United States, have introduced traceability systems and import control mechanisms intended to prevent illegally caught seafood from entering domestic supply chains. However, a number of structural weaknesses limit what these regimes can do.

The lack of dedicated species-level trade codes for key squid species means that squid from both unregulated and well-managed fisheries can be aggregated under the same broad customs codes - creating a major transparency gap for seafood buyers.

Firstly, current trade data does not allow for the accurate measurement of how much high-risk squid enters major markets. This is due to the absence of species-level traceability within the Harmonized System (HS) coding framework - globally standardised trade codes do not distinguish between different squid species, making it impossible to reliably isolate imports of squid originating from the SWA, SEP or NWIO by identifying geographically distinct species.

This lack of granular information creates a major transparency gap. Squid from very different fisheries — some unregulated or poorly regulated, others with serious governance concerns, others well-managed — are all aggregated under the same broad HS customs codes.



Crew work to process jumbo squid on a Chinese squid jigger in the SEP.

Even where species could act as a partial proxy for catch location (Argentine shortfin squid, for example, is taken almost entirely in the SWA), the absence of species-level codes means that proxy is lost. The result is that official trade statistics cannot, on their own, distinguish products linked to environmental destruction, forced labour and human rights abuses from those that are not.

The situation worsens once products reach the end consumer. A November 2025 Oceana investigation found that 49% of 198 squid products sampled in Brussels and Milan provided no meaningful information on either the species or their catch locations.[277] Two of the species of focus for this report - Argentine shortfin squid and jumbo squid - were most likely to be in these unlabelled products. Poor due diligence on labelling requirements further erodes traceability and results in squid from unregulated fisheries ending up on consumer plates.

The second weakness arises from poor supply chain traceability at the flag state level. When vessel identities are concealed -when catches are mixed in bulk consignments, documentation is falsified, or due diligence obligations are poorly enforced- then chain-of-custody safeguards are significantly weakened. This is particularly concerning for the DWF squid fisheries discussed in this report, where trans-shipment is ubiquitous and at-sea logistics networks and complex corporate ownership structures make supply chain scrutiny difficult.

Conclusion

The leading squid fisheries expose the point at which global seafood governance simply stops functioning, despite squid being some of the world's most heavily traded and valuable seafood commodities consumed in every major market. Yet unlike tuna - managed by a network of five major RFMOs with vessel registries, catch documentation schemes, and observer programmes - the majority of the world's squid catch is taken from waters without regulation.



A fisher sleeps on the bare deck of a Chinese squid jigger operating in the SEP.

The three squid fisheries covered in this report - the Northwest Indian Ocean, the Southeast Pacific and the Southwest Atlantic - together represent approximately 60% of global squid supply. Two of these fisheries have no RFMO in place, and the third has an RFMO bogged down by unreachable consensus and the ulterior motives of states that benefit from blocking progress. The continued absence of labour provisions, robust monitoring, or trip-length regulations represent critical blind spots that DWF fleets exploit.

Unregulated fisheries such as these are spaces where the absence of governance and scrutiny becomes the operating model, and where fleets, flag states, and supply chains adapt to profit from the gaps. The longer a fishery remains unregulated, the more entrenched these practices become and the harder they are to dislodge. Flag states resist transparency measures because opacity serves their commercial interests, and each year of inaction deepens the structural advantages for those who benefit from the status quo. The abuses identified through EJF's investigations are the predictable consequences of a global seafood system in which this is now the case.

China's undeniable dominance of the global squid market is inseparable from this governance crisis. Its DWF squid fleet has grown rapidly over the past two decades, far outpacing the development of regulatory frameworks at every level, and many seafood markets are now dependent on squid coming from China's highly opaque and consolidated supply chains. Chinese squid vessels operate on the high seas for months or years at a time, maximising fishing time through ubiquitous trans-shipment. China continues to provide minimal public reporting of vessel catch data, has drastically underinvested in observer coverage, and has weak, inconsistent or non-existent enforcement of labour and environmental standards, and the standards themselves are often weak. The fact that Chinese-flagged vessels reported systematically worse outcomes on virtually every measure in EJF investigations is the direct product of these factors; for example, all 25 deaths recorded across EJF's dataset of 249 vessels occurred on Chinese-flagged vessels.

Underpinning every finding in this report is the fundamental lack of transparency in global squid fisheries. The fishers interviewed for this report are, in many cases, the only witnesses to what happens on these vessels other than their paymasters. EJF's research shows that squid fleets are operating with levels of secrecy that would be unacceptable in almost any other major global industry. Catch volumes, species composition, and bycatch reporting routinely go under- or unreported due to the lack of both flag state incentives and multilateral governance regimes, or pressure from seafood buyers. Without intervention, the boom-and-bust dynamics that have already driven population collapses in several squid fisheries are likely to repeat across other species and fishing grounds, with consequences for every market that has come to rely on squid as a stable commodity.

Although the geographical differences between the three fisheries in this report are vast, the consistency and prevalence of forced labour indicators shows that living and working conditions on squid vessels are almost always appalling. At least four forced labour indicators were recorded in over 90% of interviews conducted by EJF. These are the baseline conditions for employment on DWF squid vessels, and emblematic of an industry that now operates beyond accountability.

Changing this trajectory will require decisive action to curtail the reach of squid fleets and improve the transparency of operations across the board. One of the most effective ways to address the destructive fishing and forced labour on these fleets is to start regulating the waters in which they operate, and remove the competitive advantage that opacity brings. The market states driving demand should be calling in unison for greater controls on vessels and at ports to prevent, deter, investigate and prosecute destructive fishing and labour abuses.

This report has shown how the global squid fleet operates when no one is watching. If the international community cannot bring accountability to fisheries of this scale and commercial importance, it signals that unregulated fishing on the high seas is in their eyes not a problem to be solved but a condition to be accepted.

Recommendations

This report has established how a chronic lack of international attention to, and regulation of DWF squid operations has resulted in the proliferation of destructive fishing, human rights and labour abuses across our oceans. The findings reveal a set of interconnected failures: in flag state responsibility, in RFMO mandates, in underinvestment in transparency mechanisms, and in the basic rights of workers at sea.

To address these enabling factors, improve fisheries governance and help end human rights abuses at sea, EJF recommends that all governments fully support, adopt and implement the provisions of the Global Charter for Fisheries Transparency[278] and advance each of its 10 principles in a time-bound and proven manner.

The following sections provide specific recommendations for relevant stakeholders.



Fishers take photos of a large group of juvenile sharks caught by a Chinese-flagged light seiner operating in the NWIO.

Flag states:

To the principal DWF squid flag states around the world:

- Improve transparency and accountability of DWF squid fishing activities, including endorsing and implementing the Global Charter for Fisheries Transparency, with specific attention given to mandating at-sea monitoring and inspections of fishing vessels, eliminating at-sea trans-shipment of squid unless pre-authorised and closely monitored by human observers and/or remote electronic monitoring (REM).

- Actively advance multilateral negotiations to address unregulated DWF squid fishing, including by tabling and supporting substantive proposals at the COFI, under the BBNJ Agreement (in particular for the establishment of ABMTs covering the SWA and NWIO), and through compliant implementation of the WTO Agreement on Fisheries Subsidies.

- Impose a binding maximum trip length of 12 months on all DWF squid vessels, with mandatory port returns at the end of each trip to a home port or to a foreign port where the flag state has stationed competent officials with the authority to inspect. Require crew rotation at each port return, with no fisher kept at sea on consecutive trips without a documented period of shore leave.

- Ratify and implement ILO Convention No. 188 on Work in Fishing (C188)[279] and the Cape Town Agreement[280], which will enter into force in February 2027. Ensure that the protections C188 sets out — including minimum wage, working-hour limits, mandatory rest periods, and protection against passport retention — are extended through domestic law to all foreign nationals working on DWF squid vessels, on the same terms as nationals of the flag state.

- Reform relevant legislation to ensure that commonly occurring destructive fishing practices such as shark finning at sea and the capture of marine mammals and other vulnerable megafauna, are prohibited. Ensure that violations are prosecuted with financial and punitive penalties sufficient to remove the commercial incentive to offend. Where incidental capture of vulnerable megafauna is a known risk, support the use of mitigation methods such as underwater acoustic devices (pingers).[281/282]

- China should consolidate its current non-binding regulatory documents — including the various "red titled documents" governing high seas fishing — into substantive, legally binding amendments to the Distant Water Fishery Management Regulation and the Fisheries Law of the People's Republic of China. These amendments must close the loopholes that currently exempt the squid fleet (including light seiners operating in the NWIO) from the standards applied to China's tuna fleet, and must carry corresponding penalties for non-compliance.

- Mandate disclosure of beneficial ownership down to the natural person for all vessels flagged to the state and operating in DWF squid fisheries, with this information made publicly accessible through the national vessel registry.

- Require that all foreign crew on DWF squid vessels be recruited through licensed manning agencies, subject to flag-state and labour-sending country oversight, with direct contracts in a language the fisher fully understands. Contracts must include full disclosure of pay, deductions, duration and grievance procedures before departure.

- Prohibit the use of unlicensed or unregistered agencies or intermediaries, debt bondage arrangements and the withholding of identity documents at any point during employment.

- China should impose a moratorium on light seine fishing given the method's disproportionate and indiscriminate impacts on marine ecosystems. This moratorium should remain in place until measures are introduced which can effectively mitigate these impacts.

Existing RFMOs:

To RFMOs with mandates relevant to the squid fisheries covered in this report:

- All RFMOs: should adopt binding trip-length limits of no more than 12 months for vessels operating in RFMO convention areas, with mandatory returns to a designated port at the end of each trip and inspection by flag state or port state authorities.
- All RFMOs whose convention areas overlap with significant DWF squid activity: should monitor for interactions with squid fisheries and potential compliance gaps, and seek to establish information exchanges where possible.
- All RFMOs: should impose a moratorium on light seine fishing given the method's disproportionate and indiscriminate impacts on marine ecosystems. This moratorium should remain in place until measures are introduced which can effectively mitigate these impacts.
- All RFMOs: should develop conservation and management measures modelled on WCPFC CMM 2024-04[283] which sets standards to protect crew welfare, including requirements for written contracts, repatriation support, medical care, and grievance mechanisms.
- The SPRFMO and its member states: must move beyond the consensus paralysis that has prevented progress on port state measures, observer coverage, trip-length regulations and labour provisions for the jumbo squid fishery. The submission of nine progressive proposals to the SPRFMO annual meeting in early 2026[284] demonstrates that there is broad support for a dedicated CMM for squid, alongside binding minimum standards on transparency and labour conditions.
- The IOTC: should adopt a Resolution recognising that non-tuna fisheries operating in its AOC interact with IOTC-managed species and should be subject to minimum data reporting requirements (Regardless of their declared target species or whether actors are bound by the IOTC agreement), consistent with the IOTC's obligations under the UN Fish Stocks Agreement and the FAO Code of Conduct for Responsible Fisheries. This should be conducted in close cooperation with the SIOFA.
- The SIOFA: should initiate a formal and expedited process to amend the Agreement's area of competence to include the high seas waters of the NWIO which currently fall outside both the SIOFA and IOTC's effective management jurisdiction.
- The SIOFA: should adopt data reporting requirements for squid fisheries that include mandatory reporting (including retroactive) of all catch (target and bycatch) including sharks, turtles, cetaceans and seabirds.

Fishers pose with a captured seabird on a Chinese-flagged squid jigger operating in the SEP.



Market states and seafood buyers:

To the authorities and major seafood buyers of the EU, the UK, the US, Japan, South Korea and other significant squid-importing economies:

- Designate squid originating from China as a high-risk product within import control regimes that flag forced labour and IUU risk, including the EU Forced Labour Regulation, the US Seafood Import Monitoring Program, and equivalent national measures. The findings of this report establish a clear evidentiary basis for doing so.
- Call on the leading flag states — China, Taiwan and South Korea — to close the compliance and traceability gaps that currently allow unregulated and abusive fishing to persist in their DWF squid fleets.
- Call on the leading flag states to impose fishing trip limits of no more than one year on fishing vessels, mandate port-side inspections by competent officials from their respective national fisheries and labour agencies, and heavily restrict the practice of at-sea trans-shipment unless monitored through both human observers and electronic systems.
- Use multilateral processes — including FAO COFI, existing RFMOs processes, the BBNJ Agreement, and the WTO Agreement on Fisheries Subsidies (Article 5 obligations) — to advance binding measures against unregulated DWF squid fishing.
- Strengthen end-market transparency by closing labelling exemptions that allow prepared, preserved and food-service squid products to be sold without species or catch-area information, ensuring that consumers can make informed choices and that supply-chain due diligence has the data to be meaningful.
- Seafood buyers - including retailers, importers and foodservice companies - should publicly endorse the Global Charter for Fisheries Transparency and align their sourcing practices with its principles, with particular attention to Principle 7 on traceable supply chains.
- Seafood buyers that source from FIP-participating fisheries should not treat FIP membership as a substitute for human rights due diligence. Buyers should treat FIP-sourced product with the same level of due diligence as non-FIP-sourced product.

Coastal states affected by unregulated squid fishing:

To coastal states whose EEZs or nearshore waters are adjacent to areas of unregulated DWF squid fishing:

- Form coalitions of similarly affected countries to pursue multilateral solutions to unregulated DWF squid fishing through the FAO, the BBNJ Agreement, and the WTO Agreement on Fisheries Subsidies.
- Foster and encourage information sharing on fleets or vessels of concern that have a track record of engaging in illegal fishing intrusions into coastal state waters. Encourage similar exchanges for vessels requesting access into ports with a known history of engaging in fisheries or labour abuses.
- Collectively explore opportunities for multilateral cooperation including through the BBNJ and WTO's Fisheries Subsidy Agreement.
- Engage with market-side mechanisms such as the Global Squid Supply Chain Roundtable to push for transparency mechanisms and sustainability standards to be improved across squid fisheries.

Parties to the WTO Agreement on Fisheries Subsidies:

To parties to the WTO Agreement on Fisheries Subsidies — and in particular China, as the dominant DWF flag state in the fisheries covered by this report:

- Cease the provision of subsidies to DWF fleets operating in unregulated high seas areas in line with the Agreement.
- Ensure that any reduction in subsidies is accompanied by improved transparency on vessels previously operating in unregulated waters, so that the change does not simply translate into more aggressive cost-cutting at sea.
- Where new area-based management arrangements or RFMOs are proposed for previously unregulated high seas areas, support their establishment through participatory and transparent processes that are science-led and grounded in the precautionary principle.

Appendix

Appendix 1: Full methodology

Study areas:

Three unregulated high-seas squid fishing grounds were defined for the analysis, using FAO sub-areas trimmed to the areas of densest fishing activity to minimise data noise. A vector layer was generated in QGIS (v3.44) covering each study area.

- **Southeast Pacific:** FAO sub-areas 87.1.4 and 87.2.6 north of 25°S, excluding EEZs
- **Southwest Atlantic:** FAO sub-areas 41.2.3 and 41.3.1, excluding EEZs
- **Northwest Indian Ocean:** FAO sub-areas 51.3 and 51.4 north of 10°N, and 57.1 and 57.2 north of 6°S, excluding EEZs.

Interviews with fishers:

As part of its investigations, EJF conducted interviews with 351 Indonesian and 80 Filipino fishers. These fishers had worked on 249 unique DWF squid vessels (flagged to China (174 vessels), Taiwan (40 vessels) and S. Korea (35 vessels) between 2020 and 2025. EJF routinely conducts open-ended semi-structured interviews with crew who have worked on board industrial fishing vessels to collate evidence of potential illegal, unreported and unregulated (IUU) fishing and forced labour. Questions cover all aspects of the fishers' employment including their recruitment process, fishing operations, living and working conditions onboard, and repatriation process. All crew were asked for their informed consent before interviews took place.

To detect forced labour, EJF has designed its questionnaire and analytical framework based largely on the ILO's forced labour indicators, and developed a series of sub-indicators drawing on various ILO guidelines and EJF's extensive experience engaging fishers on the subject.[285] EJF's analysis combines abusive working and living conditions into a single indicator.[286]

Wherever possible, EJF has attempted to corroborate testimonies with additional evidence, such as additional interviewees from the same vessel, photo or video evidence of IUU fishing infractions, their contracts, travel documents, and payslips.

EJF utilises both GFW and Starboard Maritime Intelligence[287] to verify vessel AIS transmissions. This is used to corroborate crew testimonies even further. EJF also uses these platforms to identify potential vessel encounters whilst at sea.

Social media investigations in the form of searches for photos, videos, or other materials connected to the vessels were also undertaken. For vessels where social media analysis has been conducted, raw videos and photos are available upon request. Links for videos have not been included in this report to protect the identity of the fishers who uploaded these materials.

Defining destructive fishing and shark finning:

Destructive fishing indicators have been calculated and grouped by the vessel on which the abuse was reported, while forced labour indicators have been analysed by individual interviewee. This is because each fisher may experience different indicators of forced labour. Trip length calculations vary slightly depending on whether they are analysed by fisher or by vessel. Each fisher's average trip length is recorded individually; each vessel's trip length is the average of the (sometimes multiple, sometimes varying) trip lengths reported by fishers who worked on that vessel.

The report uses the term "destructive fishing practices" rather than "IUU fishing" because the same conduct (shark finning, deliberate harm to vulnerable megafauna) is classified as IUU under Taiwanese and Korean DWF regulations but falls outside China's narrower definition and outside the mandate of relevant RFMOs. EJF defines shark finning as the practice of removing the fins from a shark—often while it is still alive—and discarding its body back into the ocean.

Fisheries and trade data:

Fisheries data were extracted from FAO FishStat J (v.3)[288] and trade data from UN Comtrade and Eurostat. Fishing companies, their processors and clients were identified via the Outlaw Ocean Project Bait-to-Plate database, TradeData Pro and other open-source intelligence (OSINT) sources.[289]

Vessels of Interest:

Vessels of interest (VOIs) were compiled from EJF's interview dataset and several secondary datasets, including the Outlaw Ocean Project Bait-to-Plate database (vessels with alleged IUU fishing or human rights abuses),[290] the dataset behind C4ADS's Pier Pressure report[291] and information on force majeure arrivals into Peruvian ports.[292]

Trans-shipment analysis:

VOI encounter and reefer port visit events for the study period (1st January 2020 to 31st December 2025) were extracted from GFW using GFW's API via the R package 'gfwr' (v. 3.0).

Analysis of encounters involving VOIs was restricted to events with support vessels (carriers or bunkers). Port visit and encounter events for reefers were aggregated by trip. A 'reefer trip' was defined as the period of time beginning with the end timestamp of the last port visit event recorded before an encounter event involving the reefer, including all subsequent encounter events and port visits, and ending with the start timestamp of the last port visit event recorded before a new encounter event. Events outside the study regions and trips beginning or ending before or after the study period were excluded.

Vessel identification:

Vessel identifiers and technical characteristics were extracted from GFW's vessel registry database. Where no registry information was available, the vessel's self-reported AIS information was used. Unique vessels were identified using a custom-made algorithm which compares available vessel identifiers (name, IMO number, IRCS, MMSI) to assign a similarity score to all possible pairs of vessels in the dataset.

Vessels with a similarity score above a specified threshold were considered to correspond to the same hull and assigned a unique vessel ID.

To maximise data coverage and avoid potential false negatives due to, for instance, new gear types which could not yet be distinguished by GFW's current algorithms, the analysis included vessels identified as 'squid jiggers' as well as vessels for which gear type was undetermined (gear types 'inconclusive' and 'fishing').

Gear types were then verified using IHS Sea-web[293] and open-source intelligence (OSINT) methods, including video footage on Douyin[294] and government-issued vessel replacement approval documents. In the NWIO study area, large numbers of Iranian and Pakistani drift-gillnet vessels targeting pelagic species were excluded from the analysis, as they belong to a pelagic fishery distinct from the distant-water squid fleet examined in this report.[295]

Fishing effort calculations:

Apparent fishing effort for vessels of interest was obtained from GFW via zonal analysis for each fishing ground, for each year from 1 January 2020 to 31 December 2025.

A squid jigger illuminates the sea in the SWA.



Appendix 2: Table of 24 Mile 201 countries

Table 17: The term "Mile 201 countries" is used to refer to coastal states whose EEZ or nearshore waters are adjacent to areas of unregulated DWF squid fishing activity.

Country	Region	Fleet of concern	Reason for inclusion
France	Northwest Indian	China	Unregulated squid & tuna fishing
India	Northwest Indian	China	IUU intrusions/Unregulated squid & tuna fishing
Kenya	Northwest Indian	China	Unregulated squid & tuna fishing
Maldives	Northwest Indian	China	Unregulated squid & tuna fishing
Oman	Northwest Indian	China	IUU intrusions/Unregulated squid & tuna fishing
Pakistan	Northwest Indian	China	IUU intrusions/Unregulated squid & tuna fishing
Somalia	Northwest Indian	China	Unregulated squid & tuna fishing
Yemen	Northwest Indian	China	IUU intrusions/Unregulated squid & tuna fishing
Madagascar	Western Indian	China	Unregulated squid & tuna fishing
Mauritius	Western Indian	China	Unregulated squid & tuna fishing
Mozambique	Western Indian	China	Unregulated squid & tuna fishing
Seychelles	Western Indian	China	Unregulated squid & tuna fishing
Tanzania	Western Indian	China	Unregulated squid & tuna fishing
Chile	Southeast Pacific	China	IUU intrusions/unregulated squid fishing
Colombia	Southeast Pacific	China	Unregulated squid fishing
Costa Rica	Southeast Pacific	China	Unregulated squid fishing
Ecuador	Southeast Pacific	China	IUU intrusions/unregulated squid fishing
Peru	Southeast Pacific	China	IUU intrusions/unregulated squid fishing
United States	Southeast Pacific	China	Unregulated squid fishing
Argentina	Southwest Atlantic	China/ Taiwan/S. Korea	IUU intrusions/unregulated squid fishing
Brazil	Southwest Atlantic	China/ Taiwan/S. Korea	Unregulated squid fishing
The Falklands	Southwest Atlantic	China/ Taiwan/S. Korea	IUU intrusions/unregulated squid fishing
United Kingdom	Southwest Atlantic	China/ Taiwan/S. Korea	IUU intrusions/unregulated squid fishing
Uruguay	Southwest Atlantic	China/ Taiwan/S. Korea	Unregulated squid fishing


NO SMOKING
安全生产

1 Hawk, A. (2006) The Great Disease Enemy, Kak'ke (Beriberi) and the Imperial Japanese Army, https://www.researchgate.net/publication/7106648_The_Great_Disease_Enemy_Kak'ke_Beriberi_and_the_Imperial_Japanese_Army
2 FAO (2024) FishstatJ - Software for Fishery and Aquaculture Statistical Time Series, https://www.fao.org/fishery/en/knowledgebase/150
3 UN Comtrade (2024) Available trade data for squid & cuttlefish imports (2023-2024), https://comtradeplus.un.org/
4 FMI (2025) Squid market size and share forecast outlook 2025 to 2035, https://www.futuremarketinsights.com/reports/squid-market
5 UN Comtrade (2024) Available trade data for squid & cuttlefish imports (2023-2024), https://comtradeplus.un.org/
6 Arkhipkin, A.I., et al (2015) World Squid Fisheries, https://www.tandfonline.com/doi/full/10.1080/23308249.2015.1026226
7 Seto, K.L. et al, (10th March 2023) Fishing through the cracks: The unregulated nature of global squid fisheries, Science Advances, Volume 9, Issue 10, https://www.science.org/doi/10.1126/sciadv.add8125
8 SPRFMO (2026) SPRFMO Conservation and Management Measures, https://www.sprfmo.int/fisheries/conservation-and-management-measures
9 FAO (2024) FishstatJ - Software for Fishery and Aquaculture Statistical Time Series, https://www.fao.org/fishery/en/knowledgebase/150
10 FAO (2016) FAO Species Catalogue for Fishery Purposes No. 4, Vol. 2: Family OMMASTREPHIDAE, https://www.fao.org/4/i1920e/i1920e07.pdf
11 FAO (2026) What is IUU fishing? https://www.fao.org/iuu-fishing/background/what-is-iuu-fishing/en/
12 Coalition for Global Fisheries Transparency (2024) Global Charter for Fisheries Transparency, https://fisheriestransparency.net/wp-content/uploads/2024/10/Coalition-for-Fisheries-Transparency-Global-Charter-2024-EN.pdf
13 Doubleday, Z.A., et al (2016) Global proliferation of cephalopods, https://www.vliz.be/imisdocs/publications/291215.pdf
14 FAO (2025) FAO releases the most detailed global assessment of marine fish stocks to date, https://www.fao.org/newsroom/detail/fao-releases-the-most-detailed-global-assessment-of-marine-fish-stocks-to-date/en
15 Pauly, D. et al (1998) Fishing Down Marine Food Webs, https://www.science.org/doi/10.1126/science.279.5352.860
16 Pauly, D. et al (1998) Fishing Down Marine Food Webs, https://www.science.org/doi/10.1126/science.279.5352.860
17 FAO (2024) FishstatJ - Software for Fishery and Aquaculture Statistical Time Series, https://www.fao.org/fishery/en/knowledgebase/150
18 FAO (2024) FishstatJ - Software for Fishery and Aquaculture Statistical Time Series, https://www.fao.org/fishery/en/knowledgebase/150
19 FAO (2005) Review of the state of world marine fishery resources, C2: World squid resources https://www.fao.org/4/y5852e/Y5852E19.pdf
20 FMI (2025) Squid market size and share forecast outlook 2025 to 2035, https://www.futuremarketinsights.com/reports/squid-market
21 Imarc (2025) Tuna Market Size, Share, Trends and Forecast by Species, Type and Region 2026-2034, https://www.imarcgroup.com/tuna-market
22 Market Research Future (2026) Tuna market, https://www.marketresearchfuture.com/reports/tuna-market-40496
23 Market Research Future (2026) Canned sardine market, https://www.marketresearchfuture.com/reports/canned-sardine-market-28286
24 FMI (2026) Canned anchovy market, https://www.futuremarketinsights.com/reports/canned-anchovy-market
25 Mordor Intelligence (2026) Mackerel market size, https://www.mordorintelligence.com/industry-reports/mackerel-market
26 ReAnIn (2026) Squids market size and share analysis, https://www.reanin.com/reports/squids-market
27 FMI (2025) Squid market size and share forecast outlook 2025 to 2035, https://www.futuremarketinsights.com/reports/squid-market
28 Irwin, N. (12th August 2014) Special Sauce for Measuring Food Trends: The Fried Calamari Index, https://www.nytimes.com/2014/08/12/upshot/special-sauce-for-measuring-food-trends-the-fried-calamari-index.html
29 Massa, J. (20th August 2014) Not all food trends are created equal, https://www.nrn.com/food-trends/not-all-food-trends-are-created-equal
30 UN Comtrade (2024) Available trade data for squid & cuttlefish imports (2023-2024), https://comtradeplus.un.org/
31 Business Research Insights (2026) Fresh Squid Market Size, Trends Report 2025–2033, https://www.businessresearchinsights.com/market-reports/fresh-squid-market-115746
32 UN Comtrade (2024) Available trade data for squid & cuttlefish imports (2023-2024), https://comtradeplus.un.org/
33 Seto, K.L. et al, (10th March 2023) Fishing through the cracks: The unregulated nature of global squid fisheries, Science Advances, Volume 9, Issue 10, https://www.science.org/doi/10.1126/sciadv.add8125
34 FAO (2024) GLOBEFISH Highlights No. 2–2024: International markets for fisheries and aquaculture products, with January–December 2023 statistics, https://doi.org/10.4060/cd1265en
35 Yale Environment 360 / NBC News (2020) How China's Expanding Fishing Fleet Is Depleting the World's Oceans, https://e360.yale.edu/features/how-chinas-expanding-fishing-fleet-is-depleting-worlds-oceans
36 Seto, K.L. et al, (10th March 2023) Fishing through the cracks: The unregulated nature of global squid fisheries, Science Advances, Volume 9, Issue 10, https://www.science.org/doi/10.1126/sciadv.add8125
37 Campling, L. (2025) Pelagic Imperialism in the 21st Century? A Geopolitical Economy of China's Distant Water Fishing Industry, https://onlinelibrary.wiley.com/doi/10.1111/joac.70005
38 Pauly, D. et al (2013) China's distant-water fisheries in the 21st century, https://onlinelibrary.wiley.com/doi/full/10.1111/faf.12032
39 Seto, K.L. et al, (10th March 2023) Fishing through the cracks: The unregulated nature of global squid fisheries, Science Advances, Volume 9, Issue 10, https://www.science.org/doi/10.1126/sciadv.add8125
40 Squid Price Index (n.d.) https://www.china-squid.com/data.html
41 Squid Price Index (n.d.) https://www.china-squid.com/data.html
42 Giusti, A., et al (2026) Labelling assessment and molecular authentication of squid-based products from two major European cities, Food Control, https://www.sciencedirect.com/science/article/abs/pii/S0956713526001143
43 Fu, M., et al (2020) Analysis of sour substances in the muscles of Ryukyu squid (*Symplectoteuthis oualaniensis*), https://www.cabidigitallibrary.org/doi/full/10.5555/20203431691
44 Zhu, K., et al (2024) Discrimination of different forms and oceanic regions of purpleback flying squid (Sthenoteuthis oualaniensis) based on stable isotopes and fatty acid composition, https://www.frontiersin.org/journals/marine-science/articles/10.3389/fmars.2024.1415976/full
45 Wang, J., et al (2024) Improving the texture attributes of squid meat (Sthenoteuthis oualaniensis) with slight oxidative and phosphate curing treatments, https://www.sciencedirect.com/science/article/abs/pii/S0963996923013777
46 Zhu, J., et al (2012) Effects of thermal processing and various chemical substances on formaldehyde and dimethylamine formation in squid Dosidicus gigas. Journal of the Science of Food and Agriculture 92(12), https://pubmed.ncbi.nlm.nih.gov/22488511/
47 Hu, Y. et al. (2014) Analysis of the tenderisation of jumbo squid (Dosidicus gigas) meat by ultrasonic treatment using response surface methodology. Food Chemistry 160: 219–225, https://pubmed.ncbi.nlm.nih.gov/24799231/
48 Zhu, J., et al (2012) Effects of thermal processing and various chemical substances on formaldehyde and dimethylamine formation in squid Dosidicus gigas. Journal of the Science of Food and Agriculture 92(12), https://pubmed.ncbi.nlm.nih.gov/22488511/

49 Tang, Y. et al (2022) Development of a bifunctional edible coating for formaldehyde scavenging and preservation of aquatic products. Journal of the Science of Food and Agriculture, https://pubmed.ncbi.nlm.nih.gov/34516665/
50 Chinese patent CN1788618A: Method for controlling formaldehyde yield during squid processing, https://patents.google.com/patent/CN1788618A/en
51 Haimovici, H., et al (1998) Chapter 3: *Illex argentinus*, https://www.fao.org/4/w9000e/w9000e03.pdf
52 Doubleday, Z.A., et al (2016) Global proliferation of cephalopods, https://www.vliz.be/imisdocs/publications/291215.pdf
53 Frawley, T.H. et al (18th July 2019) Impacts of a shift to a warm-water regime in the Gulf of California on jumbo squid (*Dosidicus gigas)*, ICES Journal of Marine Science, Volume 76, Issue 7, December 2019, https://academic.oup.com/icesjms/article/76/7/2413/5533276
54 SPRFMO (2007) Information describing *Dosidicus gigas* fisheries relating to the South Pacific Fisheries Management Organisation, https://www.sprfmo.int/assets/Fisheries/Species-ProFiles/d-gigas-species-profile-040507-Science-IV-v2.pdf
55 Rodhouse, P.G.; Dawe, E.G.; O'Dor, R.K. (eds.) Squid recruitment dynamics. The genus *Illex* as a model. The commercial *Illex* species. Influences on variability *FAO Fisheries Technical Paper*. No. 376. Rome, FAO. 1998. 273p.
56 O'Dor, R. K., & Dawe, E. G. (2013). *Illex illecebrosus, northern short-finned squid*. In Advances in Squid Biology, Ecology and Fisheries. Part II - Oegopsid squids.
57 Frawley, T.H. et al (18th July 2019) Impacts of a shift to a warm-water regime in the Gulf of California on jumbo squid (*Dosidicus gigas)*, ICES Journal of Marine Science, Volume 76, Issue 7, December 2019, https://academic.oup.com/icesjms/article/76/7/2413/5533276
58 FAO (2024) FishstatJ - Software for Fishery and Aquaculture Statistical Time Series, https://www.fao.org/fishery/en/knowledgebase/150
59 FAO (2024) FishstatJ - Software for Fishery and Aquaculture Statistical Time Series, https://www.fao.org/fishery/en/knowledgebase/150
60 FAO (October 2016) Squid landings low and prices skyrocket, https://www.fao.org/in-action/globefish/news-events/news/news-detail/Squid-landings-low-and-prices-skyrocketing/en
61 Merco Press (5th September 2025) Falklands Fisheries Generate a Gross Value of Over US$2.7 Billion in a Decade, https://www.seafood.media/fis/worldnews/worldnews.asp?monthyear=&day=5&id=135701&l=e&special=0&ndb=0
62 Lozano, A.G., et al (2024) Elevating labor concerns in small-scale fisheries: challenges to decent work in Peru's jumbo flying squid fishery, https://link.springer.com/article/10.1007/s40152-024-00368-y
63 EJF (2015) Pirates and slaves: How overfishing in Thailand fuels human trafficking and the plundering of our oceans, https://ejfoundation.org/reports/pirates-and-slaves-how-overfishing-in-thailand-fuels-human-trafficking-and-the-plundering-of-our-oceans
64 Blood and water: Human rights abuse in the global seafood industry, https://ejfoundation.org/reports/blood-and-water-human-rights-abuse-in-the-global-seafood-industry
65 CMFRI (2023) Marine Fish Stock Status of India, 2022. CMFRI Booklet Series No. 32/2023, https://eprints.cmfri.org.in/17173/1/Marine%20Fish%20Stock%20Status%20of%20India%202022_2023_CMFRI.pdf
66 McWhinnie, S. (2007) The Tragedy of the Commons in International Fisheries; An Empirical Examination, https://media.adelaide.edu.au/economics/papers/doc/wp2007-05.pdf
67 Arkhipkin, A.I., et al (2015) World Squid Fisheries, https://www.tandfonline.com/doi/full/10.1080/23308249.2015.1026226
68 Seto, K.L. et al, (10th March 2023) Fishing through the cracks: The unregulated nature of global squid fisheries, Science Advances, Volume 9, Issue 10, https://www.science.org/doi/10.1126/sciadv.add8125
69 Seto, K.L. et al, (10th March 2023) Fishing through the cracks: The unregulated nature of global squid fisheries, Science Advances, Volume 9, Issue 10, https://www.science.org/doi/10.1126/sciadv.add8125
70 Seto, K.L. et al, (10th March 2023) Fishing through the cracks: The unregulated nature of global squid fisheries, Science Advances, Volume 9, Issue 10, https://www.science.org/doi/10.1126/sciadv.add8125
71 Yuan W., et al (2025) Transformative pathways towards good governance in high seas fisheries, https://www.frontiersin.org/journals/marine-science/articles/10.3389/fmars.2025.1655535/full
72 EJF (2024) Tide of injustice: Exploitation and illegal fishing on Chinese vessels in the Southwest Indian Ocean, https://ejfoundation.org/reports/tide-of-injustice-exploitation-and-illegal-fishing-on-chinese-vessels-in-the-southwest-indian-ocean
73 EJF (2025) Trapped at sea: Exposing North Korean forced labour on China's Indian Ocean tuna fleet, https://ejfoundation.org/resources/downloads/North-Korean-labour-Chinese-vessels-briefing-2025.pdf
74 Coalition for Global Fisheries Transparency (2024) Global Charter for Fisheries Transparency, https://fisheriestransparency.net/wp-content/uploads/2024/10/Coalition-for-Fisheries-Transparency-Global-Charter-2024-EN.pdf
75 GFW (2024) Sustainable fisheries management begins with vessel tracking, https://globalfishingwatch.org/fact-sheet/sustainable-fisheries-management-begins-with-vessel-tracking/
76 FAO (2025) Improving information of high seas fisheries outside the competence of regional fisheries management organizations or arrangements, https://openknowledge.fao.org/handle/20.500.14283/cd8075en
77 FAO (2025) Improving information of high seas fisheries outside the competence of regional fisheries management organizations or arrangements, https://openknowledge.fao.org/handle/20.500.14283/cd8075en
78 EJF (2025) Bright lights, dim prospects: The urgent need to address unregulated squid fishing in the Southwest Atlantic to avert a looming environmental crisis, https://ejfoundation.org/reports/bright-lights-dim-prospects-southwest-atlantic-squid
79 FAO (2025) Improving information of high seas fisheries outside the competence of regional fisheries management organizations or arrangements, https://openknowledge.fao.org/handle/20.500.14283/cd8075en
80 FAO (2025) Improving information of high seas fisheries outside the competence of regional fisheries management organizations or arrangements, https://openknowledge.fao.org/handle/20.500.14283/cd8075en
81 FAO (2010) Cephalopods of the world: An annotated and illustrated catalogue of cephalopod species known to date, Volume 2, Myopsid and Oegopsid Squids, https://oceanrep.geomar.de/id/eprint/54055/1/4305.pdf
82 FAO (2025) Improving information of high seas fisheries outside the competence of regional fisheries management organizations or arrangements, https://openknowledge.fao.org/handle/20.500.14283/cd8075en
83 Seto, K.L. et al, (10th March 2023) Fishing through the cracks: The unregulated nature of global squid fisheries, Science Advances, Volume 9, Issue 10, https://www.science.org/doi/10.1126/sciadv.add8125
84 EJF (2026) Unseen and unaccountable: The growing threat of China's squid fleet in the South Pacific, https://ejfoundation.org/reports/unseen-and-unaccountable-the-growing-threat-of-chinas-squid-fleet-in-the-south-pacific
85 SPRFMO (2026) SPRFMO Conservation and Management Measures, https://www.sprfmo.int/fisheries/conservation-and-management-measures
86 FAO (2024) FishstatJ - Software for Fishery and Aquaculture Statistical Time Series, https://www.fao.org/fishery/en/knowledgebase/150
87 EJF (2026) Unseen and unaccountable: The growing threat of China's squid fleet in the South Pacific, https://ejfoundation.org/reports/unseen-and-unaccountable-the-growing-threat-of-chinas-squid-fleet-in-the-south-pacific

88 SPRFMO (2025) SC13 - Doc 20: Annual Report of China to the Scientific Committee - Squid, https://www.sprfmo.int/assets/Meetings/02-SC/13th-SC-2025/Plenary/SC13-Doc20-Annual-report-China-Squid.pdf
89 SPRFMO (2025) SC13 - SQ 06: Update on the Stochastic Production model in Continuous Time (SPiCT) applied to *Dosidicus gigas* in the FAO area 87, https://www.sprfmo.int/assets/Meetings/02-SC/13th-SC-2025/Squid/SC13-SQ06-Update-of-the-SPiCT-applied-to-Dosidicus-gigasin-FAO-area-87.pdf
90 Standing Committee of the National People's Congress (2013) Fisheries Law of the People's Republic of China, https://www.mee.gov.cn/ywgz/fgbz/fl/200802/t20080201_117912.shtml
91 Ministry of Agriculture and Rural Affairs (2020) Regulations on the Management of Distant Water Fisheries, https://www.moj.gov.cn/pub/sfbgw/flfggz/flfggzbmgz/202101/t20210105_146468.html
92 Korean Law Information Center, *Distant Water Fisheries Development Act Enforcement Regulations* Article 22, https://www.law.go.kr/법령/원양산업발전법시행규칙
93 Korean Law Information Center, *Distant Water Fisheries Development Act*, Article 12 and 13 https://www.law.go.kr/법령/원양산업발전법
94 Ocean Conservation Administration of Taiwan (2025),About Protected Marine Wildlife, https://www.oca.gov.tw/en/home.jsp?id=33&parentpath=0,6 (accessed 05 May 2026); Act for Distant Water Fisheries 2024 (as amended); Act on Wildlife Conservation 2025(as amended)
95 Standing Committee of the National People's Congress (2013) Fisheries Law of the People's Republic of China, https://www.mee.gov.cn/ywgz/fgbz/fl/200802/t20080201_117912.shtml
96 Ministry of Agriculture and Rural Affairs (2020) Regulations on the Management of Distant Water Fisheries, https://www.moj.gov.cn/pub/sfbgw/flfggz/flfggzbmgz/202101/t20210105_146468.html
97 EJF (2022) Murky waters: Analysis of the regulatory framework governing the distant water fishing fleet of the People's Republic of China, https://ejfoundation.org/resources/downloads/EJF-Murky-Waters-2022.pdf
98 The Chinese government published such documents in 2013, 2018, 2019 and 2020. For instance, the 2020 one can be found here: MARA (2020) Notice on Further Strengthening the Safety Management of Distant Water Fisheries. https://www.moa.gov.cn/gk/tzgg_1/tfw/202004/t20200421_6342002.htm
99 Ministry of Agriculture and Rural Affairs (2021) Notice on Strengthening the Management of Distant Water Squid Jigging Vessels. https://faolex.fao.org/docs/pdf/chn206123.pdf
100 Ministry of Agriculture and Rural Affairs (2020) Notice on Strengthening the Conservation of Squid Stocks in the High Seas and Promoting the Sustainable Development of China's Distant-water Fisheries. https://policy.mofcom.gov.cn/claw/clawContent.shtml?id=70486
101 Xu Wang (2015) Court oversight of 'regulatory documents' marks a significant step forward for the rule of law. http://calaw.ruc.edu.cn/fzpl/fxsb/67d4aa01b68f4459b918b7e5c9735272.htm
102 Ministry of Agriculture and Rural Affairs (2022) Notice on Ensuring Compliance with International Obligations in the Tuna Fishing Industry. Available at: https://faolex.fao.org/docs/pdf/chn208246.pdf
103 Ministry of Agriculture and Rural Affairs (2024) Key Points for Compliance with the Eastern Pacific Tuna Fisheries (2024 Edition). Available at: https://www.abeedata.com/home/article/detail/id/25964
104 Godfrey, M. (4th August 2025) China's latest proposal for better global squid management greeted with skepticism, https://www.seafoodsource.com/news/supply-trade/china-s-latest-proposal-for-better-global-squid-conservation-greeted-with-skepticism
105 FIS (7th March 2025) Scientists Convene in Shanghai to Discuss Giant Squid Conservation and Management, https://seafood.media/fis/techno/newtechno.asp?l=e&id=135064&ndb=1
106 Undisclosed source (2025) Declaration of interest in establishing a global squid alliance for fisheries sustainable development. Leaked document obtained by EJF.
107 Ministry of Agriculture and Rural Affairs, China (2022) *China Implements Voluntary Fishing Moratorium*, http://english.moa.gov.cn/news_522/202205/t20220527_300869.html
108 Ministry of Agriculture and Rural Affairs, China (2020) *China Starts First Fishing Moratorium on High Seas*, http://english.moa.gov.cn/news_522/202007/t20200707_300493.html
109 Oceana (2023) China engages in fishing ban PR stunt, Oceana, https://oceana.org/press-releases/china-engages-in-fishing-ban-pr-stunt/
110 Oceana (2023) China engages in fishing ban PR stunt, Oceana, https://oceana.org/press-releases/china-engages-in-fishing-ban-pr-stunt/
111 Changazo, J.C., (2025) Breaking the Commons: China's Distant-Water Moratorium as a Game-Changer for High Seas Sustainability, https://www.researchgate.net/publication/390527205_Breaking_the_Commons_China's_Distant-Water_Moratorium_as_a_Game-Changer_for_High_Seas_Sustainability
112 Changazo, J.C., (2025) Breaking the Commons: China's Distant-Water Moratorium as a Game-Changer for High Seas Sustainability, https://www.researchgate.net/publication/390527205_Breaking_the_Commons_China's_Distant-Water_Moratorium_as_a_Game-Changer_for_High_Seas_Sustainability
113 Changazo, J.C., (2025) Breaking the Commons: China's Distant-Water Moratorium as a Game-Changer for High Seas Sustainability, https://www.researchgate.net/publication/390527205_Breaking_the_Commons_China's_Distant-Water_Moratorium_as_a_Game-Changer_for_High_Seas_Sustainability
114 Kang, R. (2016) China's distant water fishing fleet growing unsustainably, https://dialogue.earth/en/uncategorized/594-china-distant-water-fishing-fleet/
115 SCIO (2026) SCIO briefing on the draft Outline of the 15th Five-Year Plan, http://english.scio.gov.cn/pressroom/2026-03/27/content_118409291_11.html
116 AgTechNavigator (2026) China 2026 fisheries agenda: MARA prioritises safety, enforcement to drive sector modernisation, https://www.agtechnavigator.com/Article/2026/02/23/china-fisheries-agenda-prioritises-safety-enforcement-to-drive-sector-modernisation/
117 Ministry of Agriculture (2002), 公告修正赴西南大西洋海域魷釣漁船及運搬船請領作業證明書相關規定, https://www.moa.gov.tw/ws.php?id=4022 (accessed 25 November 2025); Taiwan Squid and Saury Association (n.d.), 公會成立緣由, http://www.squid.org.tw/index.php/about-us/reg (accessed 12 March 2026)
118 FIsheries Agency of Taiwan, 2026, 農業部核准我國魷釣漁船作業漁船名單 (List of authorised squid fishing vessels), https://www.fa.gov.tw/view.php?theme=TCOAATLOCFBTOITTO&subtheme=&id=2 (accessed 21 April 2026)
119 Act for Distant Water Fisheries 2024 (as amended); Regulations for Fishing Vessels Conducting Squid Jigging Fishery 2024 (as amended)
120 Regulations for Fishing Vessels Conducting Squid Jigging Fishery 2024 (as amended)
121 Ministry of Agriculture, 2024, 遠洋漁業永續發展-落實責任漁業消除非法漁撈計畫（114年-117年）, Ministry of Agriculture, https://wm.moa.gov.tw/preview_fa/view.php?theme=CBAROIPWAGP&subtheme=&id=16
122 EJF (2025) EJF and EAST commend the Taiwanese government for adopting fisheries management policies aligned with the Global Charter for Fisheries Transparency, https://ejfoundation.org/news-media/ejf-and-east-commend-the-taiwanese-government-for-adopting-fisheries-management-policies-aligned-with-the-global-charter-for-fisheries-transparency (accessed 12 November 2025)
123 Ministry of Agriculture, 2024, 遠洋漁業永續發展-落實責任漁業消除非法漁撈計畫（114年-117年）, Ministry of Agriculture, https://wm.moa.gov.tw/preview_fa/view.php?theme=CBAROIPWAGP&subtheme=&id=16
124 TFA (2024), '公海漁業登檢成果統計表', https://www.fa.gov.tw/view.php?theme=FRC_LER&subtheme=&id=4#1_8 (accessed 12 March 2026)
125 Korea DWF yearbook (2025) Korea squid vessels statistics,

https://www.ofis.or.kr/boards/view/board_stats/19739 (accessed 20 April 2026)
126 Korea Legal Information Centre, Distant Water Fisheries Development Act, https://law.go.kr/engLsSc.do?menuId=1&subMenuId=21&tabMenuId=117&query=%EC%9B%90%EC%96%91%EC%82%B0%EC%97%85%EB%B0%9C%EC%A0%84%EB%B2%95# (accessed 20 April 2026)
127 Korea Legal Information Centre, Seafarers Act, https://www.law.go.kr/영문법령/선원법 (accessed 20 April 2026)
128 Statistics on Korean Seafarers Yearbook (as at 31 December 2024), p314, https://www.koswec.or.kr/koswec/information/sailorshipstatistics/detailSailorShipStaticsPage.do (accessed 20 April 2026)
129 Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction, Status of Treaties, https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXI-10&chapter=21&clang=_en&_gl=1*44xm18*_ga*ODk3MTk2OTQuMTc1MjQ1MjY5Nw..*_ga_TK9BQL5X7Z*czE3NzY4MTgxMjUkbzgkZzEkdDE3NzY4MTgxNDYkajM5JGwwJGgw (accessed on 20 April 2026)
130 SPRFMO (2026) COMM14 2026 documents, https://www.sprfmo.int/meetings/comm/14th-commission-meeting
131 Korea Ministry of Oceans and Fisheries Press release (29.03.2024), https://www.mof.go.kr/doc/en/selectDoc.do?docSeq=56395&menuSeq=485&bbsSeq=90
132 SPRFMO (2026) 14th Meeting of the SPRFMO Commission, https://www.sprfmo.int/meetings/comm/14th-commission-meeting
133 UNCLOS (1982) United Nations Convention on the Law of the Sea, https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf
134 UNFSA (1982) UN Fish Stocks Agreement, https://www.un.org/oceancapacity/unfsa
135 SIOFA (n.d.) Southern Indian Ocean Fisheries Agreement (SIOFA), https://siofa.org/
136 SPRFMO (2025) SPRFMO Conservation and Management Measures, https://www.sprfmo.int/fisheries/conservation-and-management-measures
137 Prairie, E. (17th June 2022) RFMOs- What are they and are they enough to protect high-seas fish stocks? https://www.seafoodsource.com/news/environment-sustainability/rfmos-what-are-they-and-are-they-enough-to-protect-high-seas-fish-stocks
138 Carver, E. (31st January 2024) Critics push for more transparency at RFMOs that govern high seas fishing, https://news.mongabay.com/2024/01/critics-push-for-more-transparency-at-rfmos-that-govern-high-seas-fishing/
139 Prairie, E. (17th June 2022) RFMOs- What are they and are they enough to protect high-seas fish stocks? https://www.seafoodsource.com/news/environment-sustainability/rfmos-what-are-they-and-are-they-enough-to-protect-high-seas-fish-stocks
140 Augustinis, F.D. (12th March 2026) Modest controls put on freewheeling squid fleet at South Pacific fisheries meeting, https://news.mongabay.com/2026/03/modest-controls-put-on-freewheeling-squid-fleet-at-south-pacific-fisheries-meeting/
141 SIOFA (n.d.) Southern Indian Ocean Fisheries Agreement (SIOFA), https://siofa.org/
142 SIOFA (n.d.) Authorised vessels, https://siofa.org/mcs/authorised-vessels/vessels?sort_by=field_vess_flag_value&sort_order=ASC
143 Urrutia S. et al (2025) Untangling squid: Regulatory gaps and opportunities to improve high seas squid fisheries management, https://www.tandfonline.com/doi/abs/10.1080/00908320.2025.2458664
144 Seto, K.L. et al, (10th March 2023) Fishing through the cracks: The unregulated nature of global squid fisheries, Science Advances, Volume 9, Issue 10, https://www.science.org/doi/10.1126/sciadv.add8125
145 Trygg Mat Tracking (2021) Squid fishing in the Northwest Indian Ocean - Clear as ink, https://1ae03060-3f06-4a5c-9ac6-b5c1b4a62664.usrfiles.com/ugd/1ae030_45e0fa195f4f43fa9f0da3da2b78d8c3.pdf
146 SCFS (2022) An investigation of large-size light falling net fishing vessels operating in the South China Sea based on VMS data, https://www.schinafish.cn/cn/article/id/75a1e0b3-4eb7-4f86-8710-37c46477221d
147 Stop Illegal Fishing, Trygg Mat Tracking, and NFDS (2017) Squid capture in the Northwest Indian Ocean: Unregulated fishing on the high seas, https://1ae03060-3f06-4a5c-9ac6-b5c1b4a62664.usrfiles.com/ugd/1ae030_85d2f860ba8e4dda850ec83080571f69.pdf
148 Trygg Mat Tracking (2021) Squid fishing in the Northwest Indian Ocean - Clear as ink, https://1ae03060-3f06-4a5c-9ac6-b5c1b4a62664.usrfiles.com/ugd/1ae030_45e0fa195f4f43fa9f0da3da2b78d8c3.pdf
149 EJF (2026) Fishing effort calculations conducted by EJF researchers using Global Fishing Watch data.
150 Marangoni, L.F.B, et al. (2022) Impacts of artificial light at night in marine ecosystems — A review. Global Change Biology, https://doi.org/10.1111/gcb.16264.)
151 WCFPC (2012) Study on the methods to mitigate the bycatch of juvenile bigeye tuna by introducing Double-FADs with light stimulus for tuna purse seine fishery in the Western and Central Pacific Ocean, https://meetings.wcpfc.int/node/7836
152 Nguyen, K.Q. et al (2018) Artificial light in commercial industrialised fishing applications: A review, https://www.tandfonline.com/doi/full/10.1080/23308249.2018.1496065
153 FAO (1976) Fishing manuals: Fishing with light, https://www.fao.org/4/ah827e/ah827e03.pdf
154 Afonso, A.S. et al (2021) The effect of light attractor color in pelagic longline fisheries, https://www.sciencedirect.com/science/article/abs/pii/S0165783620303398
155 Jauharee A.R, et al, 2021) Tuna behaviour at anchored FADs inferred from Local Ecological Knowledge (LEK) of pole-and-line tuna fishers in the Maldives, https://pmc.ncbi.nlm.nih.gov/articles/PMC8321119/
156 Xie Yongqing (n.d.) Analysis of Safety Hazards on Light Seiners vessels. Available at: https://www.jessn.com/cn/productsnewsd.php?nid=997
157 Stop Illegal Fishing, Trygg Mat Tracking, and NFDS (2017) Squid capture in the Northwest Indian Ocean: Unregulated fishing on the high seas, https://1ae03060-3f06-4a5c-9ac6-b5c1b4a62664.usrfiles.com/ugd/1ae030_85d2f860ba8e4dda850ec83080571f69.pdf
158 Trygg Mat Tracking (2021) Squid fishing in the Northwest Indian Ocean - Clear as ink, https://1ae03060-3f06-4a5c-9ac6-b5c1b4a62664.usrfiles.com/ugd/1ae030_45e0fa195f4f43fa9f0da3da2b78d8c3.pdf
159 IOTC (2022) Report of the 18th working party on ecosystems and bycatch, https://iotc.org/documents/report-18th-working-party-ecosystems-and-bycatch
160 SIOFA (2025) Overview of SIOFA Fisheries 2025, https://siofa.org/sites/default/files/files/SIOFA-Fisheries-Overview-2025_redacted.pdf
161 Coll, M. et al (15th October 2013) Assessing the trophic position and ecological role of squids in marine ecosystems by means of food-web models, Deep Sea Research Part II: Topical studies in oceanography, Volume 95, https://www.sciencedirect.com/science/article/abs/pii/S0967064512001609
162 Lennon, C. (15th January 2026) Game-changing international ocean treaty comes into force, https://news.un.org/en/story/2026/01/1166762
163 WTO (n.d.) Fisheries subsidies, https://www.wto.org/english/tratop_e/rulesneg_e/fish_e/fish_e.htm
164 Godfrey, M. (28th October 2025) UK-Argentina territorial dispute blocking progress on establishing a Southwest Atlantic RFMO, https://www.seafoodsource.com/news/environment-sustainability/uk-argentina-territorial-dispute-blocking-progress-on-a-southwest-atlantic-rfmo
165 Quotation edited for clarify. White, C. (23rd April 2024) Falklands fisheries rep calls for creation of Southern Atlantic RFMO, https://www.seafoodsource.com/news/environment-sustainability/falklands-fisheries-rep-calls-for-creation-of-southern-atlantic-rfmo
166 UNEP (2025) Agreement on Marine Biological Diversity of Areas Beyond National Jurisdiction (BBNJ Agreement),

https://www.unep.org/resources/agreement-marine-biological-diversity-areas-beyond-national-jurisdiction-bbnj-agreement
167 High Seas Alliance (2023) High Seas Treaty - Frequently asked questions, https://highseasalliance.org/wp-content/uploads/2023/07/HIGH-SEAS-TREATY-QA.pdf
168 Carver, E. (23rd September 2025) 'Super big deal': High seas treaty reaches enough ratifications to become law, https://news.mongabay.com/2025/09/super-big-deal-high-seas-treaty-reaches-enough-ratifications-to-become-law/
169 Lennon, C. (15th January 2026) Game-changing international ocean treaty comes into force, https://news.un.org/en/story/2026/01/1166762
170 Sala, E., et al (2018) The economics of fishing the high seas. *Science Advances*, https://www.science.org/doi/10.1126/sciadv.aat2504
171 Oceana (2021) China's fisheries subsidies propel distant-water fleet, https://oceana.org/reports/chinas-fisheries-subsidies-propel-distant-water-fleet/
172 Planet Tracker (2024) Fishful Thinking, https://planet-tracker.org/wp-content/uploads/2024/07/Fishful-Thinking.pdf
173 WTO (2022) Agreement on fisheries subsidies, https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/MIN22/33.pdf&Open=True
174 Sala, E., et al (2018) The economics of fishing the high seas. *Science Advances*, https://www.science.org/doi/10.1126/sciadv.aat2504
175 Planet Tracker (2024) Fishful Thinking, https://planet-tracker.org/wp-content/uploads/2024/07/Fishful-Thinking.pdf
176 EJF (2025) Bright lights, dim prospects: The urgent need to address unregulated squid fishing in the Southwest Atlantic to avert a looming environmental crisis, https://ejfoundation.org/reports/bright-lights-dim-prospects-southwest-atlantic-squid
177 EJF (2026) Unseen and unaccountable: The growing threat of China's squid fleet in the South Pacific, https://ejfoundation.org/reports/unseen-and-unaccountable-the-growing-threat-of-chinas-squid-fleet-in-the-south-pacific
178 TMT (2021) New analysis: Squid fishing Northwest Indian Ocean: Clear as Ink, https://www.tm-tracking.org/post/new-analysis-squid-fishing-north-west-indian-ocean-clear-as-ink
179 EJF (2026) Fishing vessel calculations conducted by EJF researchers using Global Fishing Watch data.
180 EJF (2026) Fishing vessel calculations conducted by EJF researchers using Global Fishing Watch data.
181 FAO (2024) FishstatJ - Software for Fishery and Aquaculture Statistical Time Series, https://www.fao.org/fishery/en/knowledgebase/150
182 Han, H., et al (2023) Response of the Northwest Indian Ocean purpleback flying squid (Sthenoteuthis oualaniensis) fishing grounds to marine environmental changes, https://www.sciencedirect.com/science/article/pii/S1470160X23009512
183 Yu, W., et al, (2021) Synchronous Variations in Abundance and Distribution of Ommastrephes bartramii and Dosidicus gigas in the Pacific Ocean, https://link.springer.com/article/10.1007/s11802-021-4644-0
184 Chen, J.-L. et al. (2026) The temporal and spatial distribution characteristics of Symlectoteuthis oualaniensis in high seas fishing ground of northwest Indian Ocean. Journal of Fisheries of China, 50(2): 029306. DOI: 10.11964/jfc.20220813652
185 Sea Around Us (n.d.) Industrial fleets operating in the Indian Ocean turn off satellite monitoring systems, fail reporting obligations, https://www.seaaroundus-io.org/sea-around-us-indian-ocean-news/catch-from-space
186 Global Fishing Watch (2026) Global Fishing Watch Map, https://globalfishingwatch.org/map/fishing-activity/
187 FAO (2022) Draft voluntary guidelines for transshipment, https://www.fao.org/3/cb9956en/cb9956en.pdf
188 EJF (2023) The Weakest Link: How at-sea trans-shipment fuels illegal fishing and human rights abuses in global fisheries, https://ejfoundation.org/reports/the-weakest-link-how-at-sea-trans-shipment-fuels-illegal-fishing-and-human-rights-abuses-in-global-fisheries
189 Zhoushan Municipal Development and Reform Commission and Zhoushan Municipal Bureau of Ocean and Fisheries (2021) Zhoushan City's High-Quality Development Plan for Fisheries during the 14th Five-Year Plan Period, http://210.14.65.66/_d3/c55901/20240925/i258024.phtml
190 Hangchi Zhou, Zhejiang Daily (2025) Witness the journey of a squid at Zhoushan National Deep-sea Fishing Base. Over 11,000 tonnes – your deep-sea delivery has arrived. Available at: https://zjnews.zjol.com.cn/zjnews/202502/t20250220_30836974.shtml
191 Hangchi Zhou, Zhejiang Daily (2025) Witness the journey of a squid at Zhoushan National Deep-sea Fishing Base. Over 11,000 tonnes – your deep-sea delivery has arrived. Available at: https://zjnews.zjol.com.cn/zjnews/202502/t20250220_30836974.shtml
192 Shuliangtec, China Squid Index (2023) Research Report on the Performance of the China Distant Water Squid Price Index in 2022, https://www.china-squid.com/article.html?type=comment&id=53973
193 Shuliangtec, China Squid Index (2025) Research Report on the Performance of the China Distant Water Squid Price Index in 2024, https://www.china-squid.com/article.html?type=comment&id=73347
194 Shuliangtec, China Squid Index (2023) Research Report on the Performance of the China Distant Water Squid Price Index in 2022, https://www.china-squid.com/article.html?type=comment&id=53973
195 EJF (2019) Blood and Water: Human rights abuses in the global seafood industry, https://ejfoundation.org/reports/blood-and-water-human-rights-abuse-in-the-global-seafood-industry
196 Associated Press (2015) AP Investigation: Slaves may have caught the fish you bought, https://www.ap.org/explore/seafood-from-slaves/ap-investigation-slaves-may-have-caught-the-fish-you-bought.html
197 Greenpeace (2020) Choppy Waters: Forced labour and illegal fishing in Taiwan's distant water fisheries, https://www.greenpeace.org/southeastasia/publication/3690/choppy-waters-forced-labour-and-illegal-fishing-in-taiwans-distant-water-fisheries/
198 EJF (2020) Illegal fishing and human rights abuses in the Korean fishing fleet, https://ejfoundation.org/resources/downloads/IllegalfishinghumanrightsKorea.pdf
199 EJF (2020) Cetacean slaughter, shark finning and human rights abuse in Taiwan's fishing fleet, https://ejfoundation.org/resources/downloads/EJF-Taiwan-dolphin-briefing-2020.pdf
200 EJF 2022) The ever-widening net: Mapping the scale, nature and corporate structures of illegal, unreported and unregulated fishing by the Chinese distant-water fleet, https://ejfoundation.org/reports/the-ever-widening-net-mapping-the-scale-nature-and-corporate-structures-of-illegal-unreported-and-unregulated-fishing-by-the-chinese-distant-water-fleet
201 Journal of Shanghai Ocean University (2021) Spatial and temporal distribution differences of squid fishing grounds in the northern Indian Ocean under different fishing methods, https://www.shhydxxb.com/html/shhy/2021/6/20210103264.htm
202 EJF (2026) Analysis of fishing effort data from Global Fishing Watch.
203 IOTC (n.d.) Competence: Area & Species, https://iotc.org/about-iotc/competence
204 IOTC (n.d.) Competence: Area & Species, https://iotc.org/about-iotc/competence
205 IOTC (2024) Catch and effort data - surface fisheries, https://iotc.org/WPEB/2001/Data/05-CESurface
206 EJF (2026) EJF corroborated this comparison with a representative from the IO tuna purse seine fleet.
207 CNR (26th June 2024) The first batch of deep-sea fish caught this year is landed at Fuzhou Port, https://www.cnr.cn/fj/jdt/20240626/t20240626_526765596.shtml
208 Fuzhou Customs (10th June 2025) Pingtan customs facilitates effective customs clearance for distant-water fish catches, http://manzhouli.customs.gov.cn/fuzhou_customs/484123/484124/6564010/index.html
209 EJF (2026) Fishing effort calculations conducted by EJF researchers using Global Fishing Watch data.

210 Moaazam, M. (2019) Depredation of purpleback flying squid (Sthenoteuthis oualaniensis) on tuna caught by gillnet fisheries in the Northern Arabian Sea, https://iotc.org/sites/default/files/documents/2019/08/IOTC-2019-WPEB15-35.pdf
211 SPRFMO (2026) Record of Vessels, https://sprfmo.org/rov/registry
212 EJF (2015) Pirates and slaves: How overfishing in Thailand fuels human trafficking and the plundering of our oceans, https://ejfoundation.org/reports/pirates-and-slaves-how-overfishing-in-thailand-fuels-human-trafficking-and-the-plundering-of-our-oceans
213 Tickler, D., et al (2018) Modern slavery and the race to fish. *Nature Communications*, https://doi.org/10.1038/s41467-018-07118-9
214 Belhabib, D. & Le Billon, P. (2022) Fish crimes in the global oceans. *Science Advances*, https://doi.org/10.1126/sciadv.abj1927
215 Fernandez, K. (2020) DINARA speaks about deceased crew arriving in Montevideo and illegal fishing, https://revistapuerto.com.ar/2020/11/dinara-hablo-sobre-los-fallecidos-que-llegan-a-montevideo-y-la-pesca-ilegal/
216 Alberts, E.C. (3rd June 2021) 'Dark' ships off Argentina ring alarms over possible illegal fishing, https://news.mongabay.com/2021/06/dark-ships-off-argentina-ring-alarms-over-possible-illegal-fishing/
217 Robbins, S. (3rd August 2022) At Uruguay's port of Montevideo, a deadly circle of fishing and labor abuse, https://insightcrime.org/investigations/uruguay-port-montevideo-deadly-circle-iuu-fishing-labor-abuse/
218 Selig, E.R., Nakayama, S., Wabnitz, C.C.C. et al, (2022) Revealing global risks of labor abuse and illegal, unreported, and unregulated fishing. *Nat Commun* 13, 1612 https://doi.org/10.1038/s41467-022-28916-2.
219 Stringer, C. & Yea, S. (27th January 2026) Death and disposability of Indonesian migrant fishers at sea, https://link.springer.com/article/10.1007/s40152-025-00469-2
220 Outlaw Ocean Project (2026) Research findings shared with EJF.
221 Yea, S. (2025) Worker Protections at Sea: Climate change and life aboard distant water fishing vessels, https://antitraffickingreview.org/index.php/atrjournal/article/view/895/623
222 ODS (2023) Thiamin, https://ods.od.nih.gov/factsheets/Thiamin-HealthProfessional/
223 Hawk, A. (2006) The Great Disease Enemy, Kak'ke (Beriberi) and the Imperial Japanese Army, https://www.researchgate.net/publication/7106648_The_Great_Disease_Enemy_Kak'ke_Beriberi_and_the_Imperial_Japanese_Army
224 Sugiyama, Y. et al (2013) Kanehiro Takaki and the control of beriberi in the Japanese Navy, https://journals.sagepub.com/doi/full/10.1177/0141076813497889
225 LA Times (7th November 2023) They catch squid for the world's table. But the deckhands on Chinese ships pay a deadly price, https://www.latimes.com/world-nation/story/2023-11-07/chinese-squid-ships-deckhands-pay-deadly-price
226 Outlaw Ocean Project (2023) China: The superpower of seafood, https://theoutlawocean.com/investigations/china-the-superpower-of-seafood/findings/
227 Stringer, C., et al (2026) Death and disposability of Indonesian migrant fishers at sea. *Maritime Studies*. https://doi.org/10.1007/s40152-025-00469-2
228 Selig, E.R., Nakayama, S., Wabnitz, C.C.C. et al, (2022) Revealing global risks of labor abuse and illegal, unreported, and unregulated fishing. *Nat Commun* 13, 1612 https://doi.org/10.1038/s41467-022-28916-2.
229 Laws and Regulations Database of the Republic of China (Taiwan) 2025, History of the Act on Wildlife Conservation, https://law.moj.gov.tw/ENG/LawClass/LawHistory.aspx?pcode=M0120001 (accessed 27 April 2026); Lien-Siang Chou (2007), 台灣鯨豚保育的歷程 (The History of Taiwan's Cetaceans Conservation), Quarterly of Taiwan Academy of Ecology, 200704 (15), p.14-20, https://lawdata.com.tw/tw/detail.aspx?no=518747
230 Sala, E., Mayorga, J., Costello, C., Kroodsma, D., Palomares, M.L.D., Pauly, D., Sumaila, U.R. & Zeller, D. (2018) The economics of fishing the high seas. *Science Advances*, https://www.science.org/doi/10.1126/sciadv.aat2504
231 ILO (2020) Study on the recruitment and placement of migrant fishers from Indonesia, International Labour Organization, https://www.ilo.org/media/394001/download
232 National Human Rights Commission (Taiwan), 2022, '海上人權路' (Road to Migrant Fishers' Rights), https://nhrc-ws.cy.gov.tw/Download.ashx?u=LzAwMS9VcGxvYWQvNDM1L3JlbGZpbGUvMTIoMTUvNjc5MS81YTBjZWE5YioyNTYzLTQ5ZTUtYmVmOS1lYTE4OGJkNjkzNDYucGRm&n=5rW35LiK5Lq65qyK6LevLeS4reaWh%2beJiC5wZGY%3d (accessed 04 May 2026)
233 EJF & APIL (2020) Illegal fishing and human rights abuses in the Korean fishing fleet. https://ejfoundation.org/resources/downloads/IllegalfishinghumanrightsKorea.pdf
234 MINREL (2020) Joint declaration concerning fishing by foreign vessels in areas adjacent to waters under the national jurisdiction of each country, https://www.minrel.gob.cl/sala-de-prensa/declaracion-conjunta-respecto-a-la-pesca-de-naves-extranjeras-en-las-zonas
235 IORIS (2023) Galapex 2023: Working together to address illegal, unreported and unregulated fishing, https://ioris.org/galapex-2023-working-together-to-address-illegal-unreported-and-unregulated-fishing
236 Barber, H. (6th January 2026) 'Mad fishing': the super-size fleet of squid catchers plundering the high seas, https://www.theguardian.com/environment/2026/jan/06/squid-argentina-coast-guard-overfishing-ecosystems-animal-cruelty-human-rights-china
237 Seto, K.L. et al, (10th March 2023) Fishing through the cracks: The unregulated nature of global squid fisheries, Science Advances, Volume 9, Issue 10, https://www.science.org/doi/10.1126/sciadv.add8125
238 High Seas Alliance (2023) High Seas Treaty - Frequently asked questions, https://highseasalliance.org/wp-content/uploads/2023/07/HIGH-SEAS-TREATY-QA.pdf
239 IORA (May 2025) Indian Ocean Rim Association Principle Guidelines on Combating Illegal, unreported and unregulated (IUU) fishing, https://www.iora.int/sites/default/files/2026-03/IORA%20Principle%20Guidelines%20on%20Combating%20IUU%20Fishing.pdf
240 Godfrey, M. (23rd February 2024) As China's squid catch soars, conservationists worry about scale of distant-water fleet, https://www.seafoodsource.com/news/supply-trade/china-squid-catch-soaring-as-conservationists-worry-about-fleet-s-scale
241 Fujian Provincial Bureau of Oceans and Fisheries (2021) Fujian Province's Special Plan for Building a Marine Powerhouse during the 14th Five-Year Plan Period, https://hyyyj.fujian.gov.cn/xxgk/ghjh/202112/P020211209594310145690.pdf
242 China Squid Index (2025) The relay race of the processing industry in the 'Squid Capital of China': Zhoushan passes the baton to Rongcheng, https://china-squid.com/article.html?type=info&id=73436
243 Hangchi Zhou, Tide News (2025) Digital Technologies Open Up New Horizons! Zhoushan's 'Ocean Cloud+' Sees Trade Volume Soar by 52% in Six Months, https://tidenews.com.cn/news.html?id=3195385
244 China Squid Index (2025) The relay race of the processing industry in the 'Squid Capital of China': Zhoushan passes the baton to Rongcheng, https://china-squid.com/article.html?type=info&id=73436
245 https://haijinfood.com/news/16.html
246 https://china-squid.com/article.html?type=info&id=73436
247 Urbina, I. (9th October 2023) The crimes behind the seafood you eat, The New Yorker, https://www.newyorker.com/magazine/2023/10/16/the-crimes-behind-the-seafood-you-eat
248 Poseidon (2022) Blue Shark: Economic valuation of the global market for blue shark products and interdependent policy analysis for sustainable management and trade, https://oceana.org/wp-content/uploads/sites/18/2022/11/Oceana_BlueShark_Final_DEC2022.pdf
249 Sea Shepherd (2017) Fishing fleet caught red-handed in a dawn raid by Sea Shepherd and East Timor National Police, https://www.seashepherdscandinavia.org/latest-news/dawn-raid-east-timor/

250 Bonaccorso, E., et al (2021) International fisheries threaten globally endangered sharks in the Eastern Tropical Pacific Ocean: the case of the Fu Yuan Yu Leng 999 reefer vessel seized within the Galápagos Marine Reserve, https://www.nature.com/articles/s41598-021-94126-3
251 Poseidon (2022) Blue Shark: Economic valuation of the global market for blue shark products and interdependent policy analysis for sustainable management and trade, https://oceana.org/wp-content/uploads/sites/18/2022/11/Oceana_BlueShark_Final_DEC2022.pdf
252 US Department of the Treasury (9 December 2022) Treasury Targets Serious Human Rights Abuse Aboard Distant Water Fishing Vessels Based in the People's Republic of China, https://home.treasury.gov/news/press-releases/jy1154
253 Ministry of Agriculture and Rural Affairs (2012) Notice on Strengthening the Management of the Modernisation and Replacement of Marine Fishing Vessels. https://policy.mofcom.gov.cn/claw/clawContent.shtml?id=4163
254 Data collected by EJF and shareable upon request.
255 PR Newswire (2020) Twenty fishing vessels from Pingtan Marine will resume operations at a new location following refurbishment. https://finance.sina.com.cn/roll/2020-12-29/doc-iiznctke9230651.shtml
256 Data collected by EJF and shareable upon request.
257 Data collected by EJF and shareable upon request.
258 Data collected by EJF and shareable upon request. The vessel engine power was referenced from the vessels' S&P Maritime Portal pages.
259 Pingtan Marine Enterprise (2018) Pingtan Marine Enterprise expects to significantly increase its current production capacity, https://en.prnasia.com/releases/global/pingtan-marine-enterprise-expects-to-significantly-increase-its-current-production-capacity-207044.shtml
260 US Department of the Treasury (9 December 2022) Treasury Targets Serious Human Rights Abuse Aboard Distant Water Fishing Vessels Based in the People's Republic of China, https://home.treasury.gov/news/press-releases/jy1154
261 C4ADS (September 2025) Off the NASDAQ, Still on the High Seas, https://c4ads.org/commentary/off-the-nasdaq/
262 The Outlaw Ocean Project (2023) China: The Superpower of Seafood, https://www.theoutlawocean.com/investigations/china-the-superpower-of-seafood/
263 UN Comtrade (2024) Available trade data for squid & cuttlefish imports (2023-2024), https://comtradeplus.un.org/
264 UN Comtrade (2024) Available trade data for squid & cuttlefish imports (2023-2024), https://comtradeplus.un.org/
265 UN Comtrade (2024) Available trade data for squid & cuttlefish imports (2023-2024), https://comtradeplus.un.org/
266 EJF (2025) Bright lights, dim prospects: The urgent need to address unregulated squid fishing in the Southwest Atlantic to avert a looming environmental crisis, https://ejfoundation.org/reports/bright-lights-dim-prospects-southwest-atlantic-squid
267 EJF (2026) Unseen and unaccountable: The growing threat of China's squid fleet in the South Pacific, https://ejfoundation.org/reports/unseen-and-unaccountable-the-growing-threat-of-chinas-squid-fleet-in-the-south-pacific
268 Taiwan FIP (2024) Southwest Atlantic Argentine Shortfin Squid Fishery Improvement Project vessel list, http://www.taiwanfip.tw/FIP%20vessels%20participate%20list(20241231).pdf
269 TSSFA n.d.) The promotion of South Atlantic squid fishery improvement project, http://www.taiwanfip.tw/SWASquidFIPcurrentENG.html
270 Fish Source (2025) Southwest Atlantic Argentine shortfin squid - jig (TSSFA) (FIP), https://www.fishsource.org/fip_page/1347
271 Fish Source (2026) Improvement projects, https://www.fishsource.org/improvement-project
272 Outlaw Ocean Project (2026) Research findings shared with EJF.
273 Outlaw Ocean Project (2026) Research findings shared with EJF.
274 Outlaw Ocean Project (2026) Research findings shared with EJF.
275 CNFC Overseas Fisheries (2025) 2024 Annual Report, https://vip.stock.finance.sina.com.cn/corp/view/vCB_AllBulletinDetail.php?stockid=000798&id=10908460
276 EJF (2026) Unseen and unaccountable: The growing threat of China's squid fleet in the South Pacific, https://ejfoundation.org/reports/unseen-and-unaccountable-the-growing-threat-of-chinas-squid-fleet-in-the-south-pacific
277 Oceana (2025) The hidden cost of unlabelled seafood: the risk of consuming unethical and unsustainable seafood in Europe, https://europe.oceana.org/reports/the-hidden-cost-of-unlabelled-seafood/
278 Coalition for Global Fisheries Transparency (2024), 'Global Charter for Fisheries Transparency', https://fisheriestransparency.net/wp-content/uploads/2024/10/Coalition-for-Fisheries-Transparency-Global-Charter-2024-EN.pdf
279 ILO (2026) Ratifications of C188 - Work in Fishing Convention, 2007 (No. 188), https://normlex.ilo.org/dyn/nrmlx_en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312333
280 IMO (2012) Cape Town Agreement, https://wwwcdn.imo.org/localresources/en/About/Conventions/Documents/Consolidated%20text%20of%20the%20Agreement.pdf
281 FAO 2026) Technical measures to prevent and reduce bycatch of marine mammals in capture fisheries, https://www.fao.org/fishery/en/bycatch-mitigation-mammals/5/en
282 Johnston, E. (16th March 2026) Ministry turns to acoustic devices to stop seals from stealing fishing in Hokkaido, https://www.japantimes.co.jp/news/2026/03/16/japan/kuril-harbor-hokkaido/
283 WCFPC 2024) Conservation and Management Measure for Crew Labour Standards (CMM 2024-04), https://cmm.wcpfc.int/sites/default/files/cmm_attachments/Att%2020_CMM%202024-04%20Crew%20Labour%20Standards%20CMM.pdf?_dl=1
284 SPRFMO (2026) 14th Meeting of the SPRFMO Commission, https://www.sprfmo.int/meetings/comm/14th-commission-meeting
285 ILO (2023) Towards freedom at sea: Handbook for the detection of forced labour in commercial fishing, https://www.ilo.org/publications/towards-freedom-sea-handbook-detection-forced-labour-commercial-fishing
286 ILO (2023) Towards freedom at sea: Handbook for the detection of forced labour in commercial fishing, https://www.ilo.org/publications/towards-freedom-sea-handbook-detection-forced-labour-commercial-fishing
287 Starboard (2026) Starboard Maritime Intelligence, https://www.starboardintelligence.com/
288 FAO (2024) FishstatJ - Software for Fishery and Aquaculture Statistical Time Series, https://www.fao.org/fishery/en/knowledgebase/150
289 TradeData Pro (2026) TradeData Pro platform, https://tradedata.pro/
290 The Outlaw Ocean Project (2024) Bait-to-Plate database. https://b2p.theoutlawocean.com/
291 C4ADS (2025) Pier Pressure: Distant water squid fleet shifts to Chile, https://c4ads.org/commentary/pier-pressure/
292 EJF (2026) Information obtained from confidential source.
293 S&P Global (n.d.) Sea-web maritime ships database. Available at: https://www.spglobal.com/market-intelligence/en/solutions/products/
294 Douyin (n.d.) Douyin homepage, https://www.douyin.com/
295 Kilgour, C., Copeland, D. (29th June 2020) Illegal fishing hotspots identified in Northwest Indian Ocean, https://globalfishingwatch.org/impacts/illegal-fishing-northwest-indian-ocean/



©

"The [shark] bodies were sometimes thrown away, only the fins were taken[...]If they were all gathered, there would be a lot — probably around a ton. There really were quite a lot of them [fins]. They were put into sacks first before being stored in the freezer."

Interview with an Indonesian fisher working onboard a Taiwanese-flagged squid/saury vessel operating in the SWA, January 2023.

"A turtle was used as bait. It was only used once. The turtle was accidentally caught in the net, we wanted to help release it but the captain directed us to use it as bait. It was there for almost three months, the turtle was severely wounded. The turtle attracted many squids and fish, we had a great catch."

Interview with a Filipino fisher working on a Chinese-flagged light seiner operating in the NWIO, June 2023.

"Speaking of physical abuse[...]It was frequent. I almost saw it every day. A crew member who was still young, below 20 years old.[...]He was frequently hit. Even his pants were once pulled until they ripped."

Interview with an Indonesian fisher working onboard a Korean-flagged squid vessel operating in the SWA, January 2024.

"When we refused to fish, we got scolded and physically abused[...]We were kicked and hit[...]I experienced it often. It depended on us. If we were diligent, we would not be kicked[...]There was a moment when I was asked to fish, but I slept in the machine room. I was kicked by the captain."

Interview with an Indonesian fisher working onboard a Chinese-flagged light seiner vessel operating in the NWIO, July 2022.

"Without any warning, he was immediately beaten, choked, and kicked. He was beaten up from the work area all the way down to the hold. Yes, he was beaten up, and he was also being chased. The captain and the bosun acted like it was normal. One of them even laughed. They only watched. When we were punched or beaten up, they would just watch us."

Interview with an Indonesian fisher working on a Chinese-flagged light seiner operating in the NWIO, June 2025.

Environmental Justice Foundation (EJF)
Gensurco House, 3-5 Spafield Street
London, EC1R 4QB, UK
tel: +44 (0) 207 239 3310
info@ejfoundation.org, ejfoundation.org
Registered charity No. 1088128

ENVIRONMENTAL JUSTICE FOUNDATION
Protecting People and Planet