2021 Sector Sustainability Update

Squid cleaning in the South China Sea (Viet Nam) © Lucas Jans

SQUID

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Loligo vulgaris ©BioDivLibrary

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SUMMARY

Production and trade

- **All production is from wild capture**, with relatively slow growth rates for annual landings in the last two decades (~2.6 percent/year), reaching historical maximum volumes in 2014 and 2015, close to **4 million t**.
- Reported squid landings are mostly from the Pacific region (73 percent), specifically from the **Southeast Pacific** (36 percent). The two top producing countries harvesting in this region are **Peru** with its domestic fleet and **China** with its distant-water fishing fleet.
- The top ten destination markets for squid represented 71 percent of total imports in 2019, with a wide distribution worldwide for this commodity. **Asia was the strongest market** for squid (44 percent), representing close to USD 3.7 billion, followed by Europe (22 percent) with USD 1.8 billion.
- The top ten exporters in the last decade for this commodity present a **positive trend in annual exports**. Both Morocco and Peru grew their export values by two percentage points from the previous year, while export values from the remaining top exporters grew less or even contracted.
- Catch reporting and traceability is still a problem in this sector, with some countries (e.g., Viet Nam) reporting squid pooled with other cephalopods (e.g., as Cephalopods nei).

T75 status and current strategy priorities

- **About 20 percent** (c. 500,000 t) of global squid production is considered **sustainable or improving**. This is mostly coming from fisheries involved in active fishery improvement projects (FIPs), specifically a single FIP from **Peru** that accounts for 86 percent of the total improving volume.
- The **main strategic priorities** for improvement in squid fisheries are: reducing illegal fishing, ensuring better fishery management in both international and national waters, achieving better formal recognition for fishers, and achieving greater transparency and traceability in the supply chain.

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Swordtip squid (*Uroteuthis edulis*) in the Philippines ©Klaus Stiefel

THE TARGET 75 INITIATIVE

Sustainable Fisheries Partnership (SFP) applies a sectoral approach to its mission of making actionable information available to the supply chain, in order to leverage market forces to achieve improvements in fisheries. Seafood sectors may be defined in terms of the shared biological characteristics of harvested species, as well as their role in defined markets.

In 2017, SFP launched the Target 75 (T75) initiative, as a dedicated and concrete benchmark on the way to our ultimate goal of 100-percent sustainable seafood. **T75 aims to ensure that 75 percent of seafood (by volume) in 13 key sectors is either sustainable or making regular, verifiable improvements**. Together, these T75 sectors cover most of the main types of seafood consumed in North America and Europe, and a significant portion of what is consumed in Japan and Oceania.

SQUID
SECTOR

This sector comprises **all squid species** (families: Gonatidae, Loliginidae, Ommastrephidae, Onychoteuthidae).

Squids are mostly traded **fresh/chilled or frozen**, with southern Europe (Spain, Italy, Portugal, and France), Japan, and China as the most important end markets.

Some small volumes of squid are also traded dried, prepared, or preserved, mostly to Japan, the United States, the United Kingdom, and Germany

The two most relevant reported species by production volume in 2019 were **Jumbo flying squid** (*Dosidicus gigas*) and **Argentine shortfin squid** (*Illex argentinus*).

More information on the definition and scope of this and other **Target 75 sectors** is available here.

Jumbo flying squid fishery in Peru ©SFP

Sun-dried squid in South Korea ©Mike Rowe

2 SCOPE AND OBJECTIVES

This report provides a quick summary update on progress so far for the **squid sector** against the 75-percent goal, in terms of volume of production that is already considered as either sustainable or improving. The update also includes highlights on which sources of production had the most relevant changes, as well as the most recent trends in production and trade.

For the purposes of this analysis, we define a fishery as "sustainable" if it is Marine Stewardship Council (MSC)-certified or green-listed in SFP's **Metrics** tool. We define a fishery as "improving" if it is certified by one of the following programs: MarinTrust, ASMI RFM, Iceland Responsible Fisheries, Fair Trade USA; if it is under full assessment in the MSC program; or if it is in a fishery improvement project (FIP) that is making good progress (i.e., with a progress rating of A, B, or C, or formed within the last 12 months but still unrated), using SFP's **FIP Evaluation Tool**.

Data on production refers to 2019 production and is from the FAO FishstatJ database. Status in terms of certifications and fishery, and FIPs refers to September 2021.

Squid jigger with electric lamps ©Bluedawe

Squid in market ©Shutterstock – Mikito Shirai

3 PRODUCTION

Squid is a relatively small seafood sector within the scope of T75, with average global production of 2.8 million tonnes in the last five years (FAO 2021). Most years have seen a small but consistent growth in production, balanced by some years of strong retraction, most recently observed in 2015 (**Figure 1**). Globally the sector had a slow annual growth trend, averaging 2.6 percent in the past two decades, with a residual 0.2 percent growth from last year. The top ten producing countries account for 81 percent of total squid production.

Most of the world's production originates in the Pacific Ocean (73 percent), followed by the Atlantic Ocean with 16 percent. The SE Pacific, with 36 percent of total squid production, was the most relevant fishing area in 2019 (**Figure 2**). Asian countries (19) were the major contributors, accounting for about 60 percent of world squid landings in 2019. China alone represented 27 percent of world production, including its SE Pacific distant-water fleet (**Figures 2 and 3**). Countries in the Americas together accounted for 32 percent of total squid production, led by Peru, with 20 percent of global squid catches.

The most relevant squid species are jumbo flying squid (*Dosidicus gigas*; 35.6 percent of total catches) and Argentine shortfin squid (*Illex argentinus*; 9.4 percent) (**Appendix I**). Catch reporting and traceability is still a problem in this sector, with some countries (e.g., Viet Nam) reporting squid pooled with other cephalopods (e.g., as Cephalopods nei).

Figure 1 | Time series of global squid production and annual export values (bars)

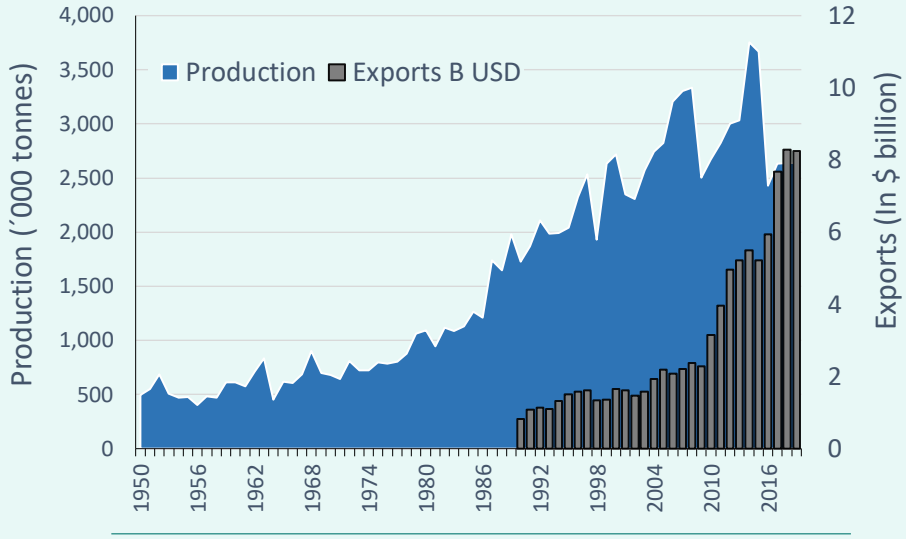


Figure 2 | Squid production by FAO major fishing areas in 2019

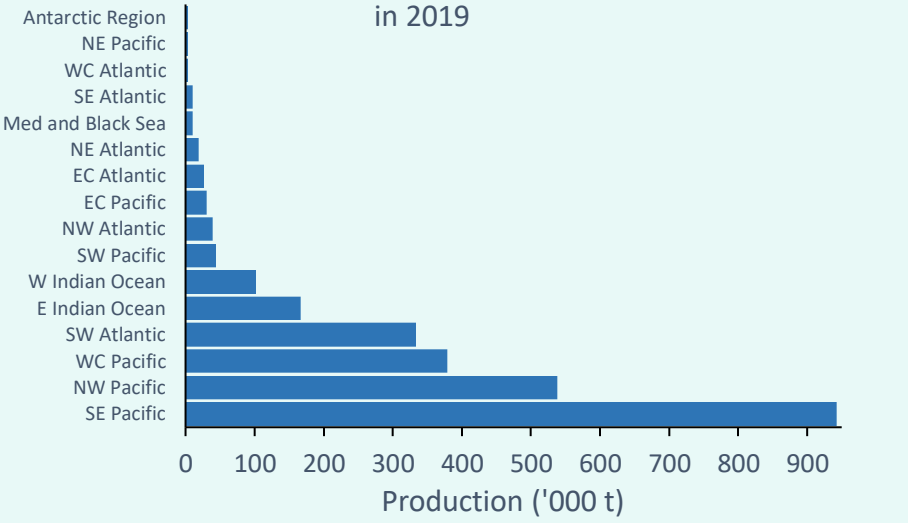
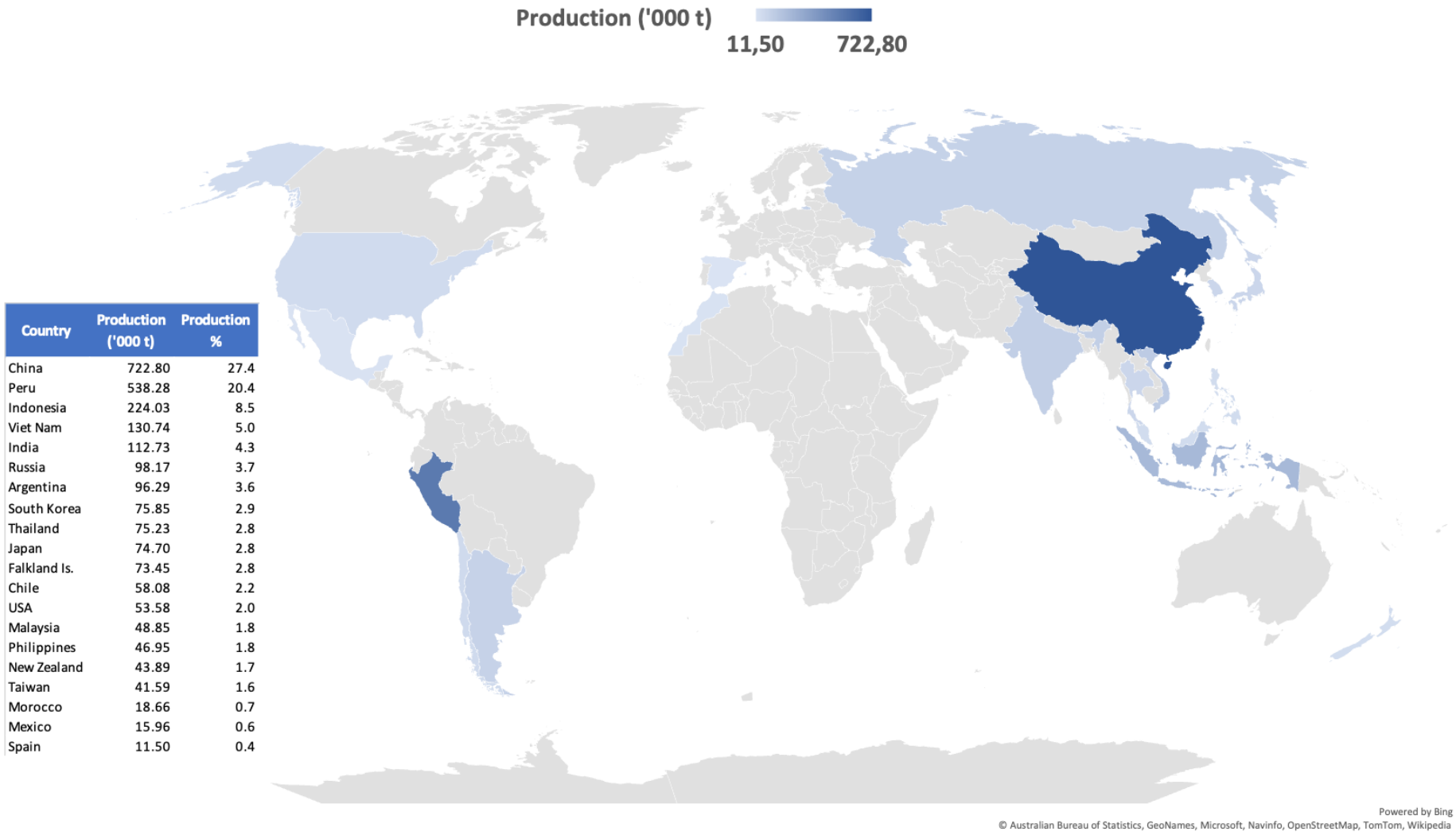


Figure 3 | The top 20 squid producing countries in 2019 (97 percent of total catches)



Country	Production ('000 t)	Production %
China	722.80	27.4
Peru	538.28	20.4
Indonesia	224.03	8.5
Viet Nam	130.74	5.0
India	112.73	4.3
Russia	98.17	3.7
Argentina	96.29	3.6
South Korea	75.85	2.9
Thailand	75.23	2.8
Japan	74.70	2.8
Falkland Is.	73.45	2.8
Chile	58.08	2.2
USA	53.58	2.0
Malaysia	48.85	1.8
Philippines	46.95	1.8
New Zealand	43.89	1.7
Taiwan	41.59	1.6
Morocco	18.66	0.7
Mexico	15.96	0.6
Spain	11.50	0.4

Source: FAO FishstatJ (2021)

4 TRADE STATISTICS

Like other sectors, squid is becoming an increasingly important commodity in terms of seafood trade. Trade represented about USD 8.2 billion by value in 2019, with a residual contraction of less than 1 percent from last year. In the past decade there was a 72-percent increase in gross economic growth of global trade for this commodity, from USD 2.3 billion in 2009 to the current USD 8.2 billion, an average of 12.8-percent annual growth (**Figure 1**) (FAO 2021b). Of the top 10 exporters, which represented 82 percent of global trade by value in 2019, Asia accounted for 58 percent, led by China with USD 3.13 billion in value. Next were the American exporter countries, representing 15 percent of total squid exports and led by Peru, which produced USD 0.84 billion in revenues. Interestingly, there is only a 7-percent difference between China and Peru in terms of production volume (**Figure 3**), but a 28-percent difference between them in terms total exports (**Table 1**). The top ten end markets for squid represented 71 percent of total imports in 2019. Asia is the strongest market (44 percent), representing close to USD 3.7 billion, followed by Europe (22 percent) with USD 1.8 billion and the US (5 percent) with about USD 0.4 billion (**Table 1**). Although the Falkland Islands do not report trade partners, more than 90 percent of the production is known to be exported to Europe, particularly to Spain.

Table 1 | Bilateral trade flows showing the main squid exporters in 2019 and their top trade partners, by percentage of each country's total exports and respective market shares.

Exporter \ Importer	EU / EEA / UK	China*	Japan	Thailand	South Korea	United States	Taiwan	Viet Nam	Philippines	Malasya	Other	Total 2019 exports (USD billion)	% Total Exports
China*	14%	0%	18%	15%	10%	9%	7%	1%	7%	3%	15%	3.13	38%
Peru	26%	30%	5%	7%	20%	1%	3%	0%	0%	0%	8%	0.84	10%
India	48%	11%	1%	16%	0%	5%	1%	11%	0%	3%	3%	0.65	8%
Spain	82%	6%	0%	0%	0%	3%	0%	0%	0%	0%	8%	0.57	7%
Indonesia	6%	50%	1%	3%	2%	1%	10%	25%	0%	0%	2%	0.45	5%
Thailand	38%	1%	32%	0%	2%	11%	1%	0%	0%	0%	14%	0.29	4%
Viet Nam	17%	7%	25%	19%	20%	2%	0%	0%	2%	3%	6%	0.28	3%
Argentina	19%	55%	4%	3%	7%	0%	0%	1%	0%	0%	10%	0.21	3%
Falkland Is.	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.20	2%
Morocco	98%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0.17	2%
% Total Imports	22%	9%	10%	9%	7%	5%	3%	3%	3%	2%	29%		

(*) Includes Hong Kong

Source: FAO 2021

A deeper analysis of bilateral trade flows shows that the top ten squid exporters in the last decade present a positive trend in gross growth, with Peru and Indonesia leading the sector (FAO 2021c). From the previous year (2018), both Morocco and Peru grew their export values, while the remaining top exporters registered low growth or even a contraction in gross growth (FAO 2021c).

5 PROGRESS AGAINST THE 75% TARGET

Currently, more than 500,000 tonnes, or 19.5 percent of global production, are considered sustainable or improving (**Figure 5 and Appendix II**). The top contributor to the improving category for this commodity is a single FIP covering the Peruvian jumbo flying squid fishery, estimated to account for about 17 percent of global squid production.

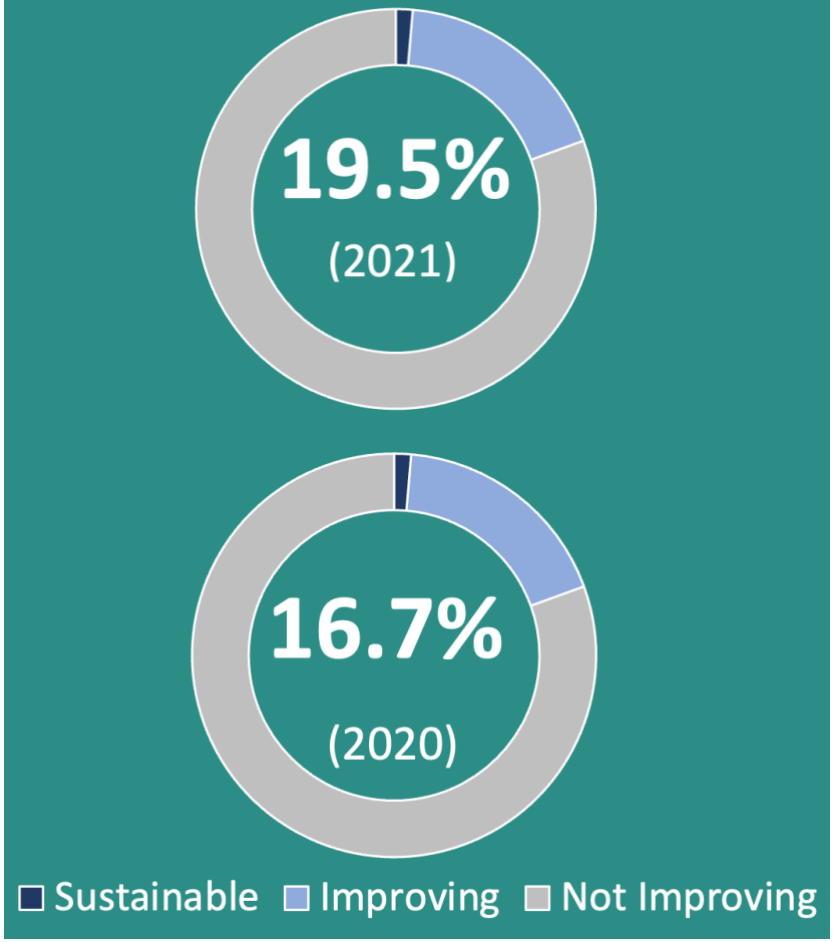
Compared to the same period in 2020, the squid sector saw an improvement of almost 3 percent of volume that is either sustainable or improving.

This sector includes both FIPs (7) and MSC-certified fisheries (3), distributed across eight countries from all continents except Europe. Peruvian fisheries account for most of the improving volume (86 percent), followed by US (7 percent) and Chinese (5 percent) fisheries (**Appendix II**). In addition, eight species are reported to be covered by sustainable and improving fisheries, and only two of those do not have official volume reported on annual basis by FAO (FAO 2021).

In terms of ongoing FIP catalyzation efforts, there is a reported prospective FIP in the Gulf of Thailand Mixed-Trawl Fishery.

Learn more about SFPs T75 strategy for 2022 and prioritized squid fisheries on the route to T75 here.

Figure 5 | Overall production (%) for the squid sector

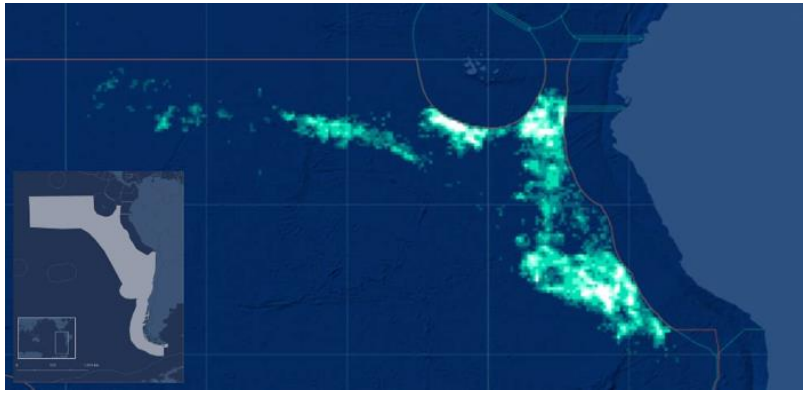


6 CHALLENGES TO SUSTAINABILITY

Squid fisheries face many sustainability challenges around the world, including:

- *A lack of effective management of high-seas squid stocks* – The South Pacific Regional Fisheries Management Organization has failed to agree on measures that can effectively limit fishing effort by distant-water fleets and ensure sustainable management.
- *The absence of international bodies to regulate high-seas squid stocks* – For instance, the international waters beyond the Argentinian exclusive economic zone (EEZ) are completely unregulated for squid fishing, with no rules at all.
- *Illegal fishing* – There are many reported instances of fishing vessels from distant-water fleets entering the national waters of coastal states and fishing without permits. Prominent targets of such illegal fishing include Peru, Chile, Argentina, and North Korea.
- *A lack of management in EEZs* – National regulation bodies for some countries have failed to set effective rules for sustainably managing squid stocks in their EEZs.
- *A lack of transparency in the squid supply chain* – This is partly fueled by the international movement of squid for processing. Squid may be caught in one country, processed in another, and then sold in a third, which means that material loses traceability back to the fishery. There are therefore risks that legally caught product may be mixed with illegally caught product without the knowledge of buyers and consumers.
- *A lack of recognition of fishers* – In some countries, fishers are not adequately recognized by their states or given full legal status. This has the effect of leaving many fishers as unregistered, reducing the effectiveness of fishery management measures and reducing the economic security of the fishers.

SFP is working with the squid industry across the supply chain to address these issues. Further information can be found on the SFP website: https://sustainablefish.org/roundtable/global-squid/



Automatic Identification System (AIS) showing squid fishing vessels distribution and activity in the Southeast Pacific Region in 2020 (adapted from © Global Fishing Watch 2021)

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8 GLOSSARY

ASMI	Alaska Seafood Marketing Institute
EEZ	Exclusive Economic Zone
FAO	Food and Agriculture Organization
FIP	Fishery Improvement Project
IRF	Iceland Responsible Fisheries MARINTRUST Global Standard for Responsible Supply of marine ingredients (Formerly IFFO RS)
MBAq	Monterey Bay Aquarium
MSC	Marine Stewardship Council
MSC C	Marine Stewardship Council Certified
MSC FA	Marine Stewardship Council Full Assessment
NEI	Not Elsewhere Included
NGO	Nongovernmental Organization
SFW	Seafood Watch
SR	Supplier Roundtable
T75	SFP Target 75 initiative
UoC	Unit of Certification (for a fishery under the MSC program)

Appendix I - Squid species and respective 2019 reported production

Common name	Scientific name	2019 production ('000 t)	% of total
Jumbo flying squid	*Dosidicus gigas*	939.24	35.56
Argentine shortfin squid	*Illex argentinus*	249.26	9.44
Japanese flying squid	*Todarodes pacificus*	104.0	3.94
Patagonian squid	*Doryteuthis gahi*	94.0	3.56
Schoolmaster gonate squid	*Berryteuthis magister*	88.29	3.34
Wellington flying squid	*Nototodarus sloanii*	43.80	1.66
Northern shortfin squid	*Illex illecebrosus*	28.56	1.08
Opalescent inshore squid	*Doryteuthis opalescens*	22.89	0.87
Longfin squid	*Loligo pealeii*	12.44	0.47
Cape Hope squid	*Loligo reynaudii*	7.31	0.28
Neon flying squid	*Ommastrephes bartramii*	7.10	0.27
Bigfin reef squid	*Sepioteuthis lessoniana*	5.84	0.22
Broadtail shortfin squid	*Illex coindetii*	4.75	0.18
European squid	*Loligo vulgaris*	1.84	0.08
European flying squid	*Todarodes sagittatus*	1.47	0.06
Veined squid	*Loligo forbesii*	1.33	0.05
Indian squid	*Uroteuthis duvaucelii*	0.44	0.02
Lesser flying squid	*Todaropsis eblanae*	0.32	0.01
African squid	*Alloteuthis africana*	0.12	0.01
Alloteuthis squids nei	*Alloteuthis spp*	0.05	0
Common bobtail squid	*Sepietta oweniana*	0.01	0
Midsize squid	*Loligo media*	0.01	0
Antarctic flying squid	*Todarodes filippovae*	0.01	0
Greater hooked squid	*Onykia ingens*	0.01	0
Sevenstar flying squid	*Martialia hyadesi*	0.00	0
Gonate squids nei	Gonatidae	0.00	0
Robust clubhook squid	*Onykia robusta*	0.00	0
Other	Squids nei	1028.10	38.93

Source: FAO Fishstat (FAO 2021)

Appendix II - Countries with fisheries reporting both improving and sustainable volume for several squid species, with respective percentage of the total improving and sustainable volume for 2019. Data obtained from the last T75 analysis (2021).

Country	Common name	Scientific name	% of total
Peru	Jumbo flying squid	*Dosidicus gigas*	85.96
United States	Longfin squid Northern shortfin squid	*Loligo pealeii* *Illex illecebrosus*	6.95
China	Mitre squid Japanese flying squid	*Uroteuthis chinensis* *Todarodes pacificus*	5.36
India	Indian squid	*Uroteuthis duvauceli*	1.54
Mexico	Jumbo flying squid	*Dosidicus gigas*	0.13
Indonesia	Mitre squid	*Uroteuthis chinensis*	0.07
Thailand	Indian squid	*Uroteuthis duvaucelii*	0
New Zealand	Gould's flying squid Wellington flying squid	*Nototodarus gouldi* *Nototodarus sloani*	0

Squid and cuttlefish purse seining on the central coast of Viet Nam **©WorldFish by David Mills**

Sustainable Fisheries PARTNERSHIP

14 LIFE BELOW WATER

FURTHER INFORMATION

http://www.sustainablefish.org/

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