
**TECHNICAL REPORT NO. 7 – INTERNATIONAL TRADE STUDY – REVIEW OF FISH
TRADE IN THE IORA REGION**

**‘TECHNICAL ASSISTANCE TO IORA
FOR THE IMPLEMENTATION AND
COORDINATION OF IORA ACTION
PLAN ON FISHERIES,
AQUACULTURE AND MARINE
ENVIRONMENT’**

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ABBREVIATIONS AND ACRONYMS

ACP	African, Caribbean and Pacific Group of States
AfCFTA	African Continental Free Trade Area
AFD	Agence Française de Développement
AGRA	Alliance for Green Revolution in Africa
AGRF	African Green Revolution Forum
APTA	Asia-Pacific Trade Agreement
ASEAN	Association of Southeast Asian Nations
AU	Africa Union
CA	Competent Authority
CECPA	Comprehensive Economic Cooperation and Partnership Agreement
CO2	Carbon
COFI	Committee on Fisheries (FAO)
COFREPECHE	French International Consultancy Agency
COMESA	Common Market for Eastern and Southern Africa
COVID-19	Coronavirus
EAC	East African Community
EEZ	Exclusive Economic Zone
EIO	East Indian Ocean Region
ESA-IO	East, Southern Africa and Indian Ocean region
EU	European Union
EPA	Economic Partnership Agreement
EUR	Euro – the currency of the European Union
FAO	Food and Agriculture Organisation of the United Nations
FAO FishStat	FAO Fisheries Statistics
FIN	Fish Information Network (FAO)
FISHTRADE	Proposed Fish Trade Information Network Project
FTA	Free Trade Area
HS	Harmonized System (for statistics)
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GLOBEFISH	Information Agency on World Fish Trade (FAO)
GMP	Good Management Practices
IGAD	Intergovernmental Authority on Development
IMF	International Monetary Fund
INFOFISH	Intergovernmental Organisation for Marketing Information and Technical Advisory Services for Fishery Products in the Asia and Pacific Region
INFOSA	Marketing Information and Technical Advisory Services for the Fishery Industry in Southern Africa

INFOPÊCHE	Intergovernmental Organization for Marketing Information and Cooperation Service for Fishery Products in Africa
IO	Indian Ocean
IOC	Indian Ocean Commission
IORA	Indian Ocean Rim Association
IORA MS	Indian Ocean Rim Association Member States
IOT	Indian Ocean Tuna Ltd
IOTC	Indian Ocean Tuna Commission
ITC	International Trade Centre
ITC Trade Map	ITC database for Trade statistics for international business development
IUU	Illegal, Unreported and Unregulated Fishing
LDC	Least Developed Countries
MT	Metric tonnes = 1000 kg
NGO	Non-Governmental Organisation
NLO	National Liaison Officer
NMFS	National Marine Fisheries Service (USA)
NOAA	National Oceanic and Atmospheric Administration (USA)
PTA	Preferential Trade Agreement
RCEP	Regional Comprehensive Economic Partnership
SAARC	South Asian Association for Regional Cooperation
SACU+M	Southern Africa Customs Union plus Mozambique
SADC	Southern African Development Community
SIDS	Small Island Developing States
SIOFA	Southern Indian Ocean Fisheries Agreement
SMARTFISH	Regional Programme in East, Southern Africa and Indian Ocean Region
SME	Small and Medium sized Enterprises
SOFRECO	EU Consultancy company for sustainable economic and social development
SPS	Sanitary Phyto-Sanitary
SSA	Sub-Saharan Africa
SWIO	South West Indian Ocean
SWOT	Strengths, Weaknesses, Opportunities, Threats
TA	Technical Assistance
TAC	Technical Advisory Committee
TIC	Technical Information Centre
ToR	Terms of Reference
ToT	Terms of Trade
UAE	United Arab Emirates
USD	United States Dollar
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNCOMTRADE	United Nations International Trade Statistics Database

WIO	West Indian Ocean Region
WTO	World Trade Organisation

1. Executive Summary of International Trade Study

The Indian Ocean Rim Association includes 23 countries around and in the Indian Ocean. These countries vary greatly with regards to economies, development stages, infrastructure, fisheries and trade¹.

The total population of the IORA region is estimated to be above 2.27 billion (2017), occupying a land area of some 20.5 million km². Their combined Exclusive Economic Zone amounts to over 28 million km², and there are very rich fishery resources in this area.

Some of the largest fishing nations in the world are found in this region. The total capture volume in 2018 amounted to 21.8 million tonnes, or about 22 percent of the world's total catch. Aquaculture production in the region amounted to 16.7 million tonnes (excluding aquatic plants), valued at USD 39 billion.

Some of the countries of the region have advanced fish processing industries, while other countries have almost none. Shrimp and tuna are major commodities that are processed, either as frozen or canned products.

While consumption of seafood also varies a great deal from country to country, the average consumption per person per year in 2017 was estimated to be 14.8 kg within the region. This is lower than the world average of 20.3 kg (FAO, 2020).

The countries of the region as a group are major players on the international market for seafood products, and the region's exports and imports have risen markedly over the years. A distinct feature of this trade is that the region as a whole imports less than it exports, and import prices are lower than export prices. In other words, the region as a group has a positive trade balance, although this also varies from country to country.

The trade performance of the region is largely positive, indicating that most of the countries are performing well, while a few (Comoros, Maldives, Oman, Somalia and Yemen) are not performing so well.

Trade between IORA member states is relatively low, and could be enhanced with better access to market information and opportunities, including through inherent bilateral or multilateral trade arrangements. Imports by IORA member states from other IORA member states amount to about 27 percent of the region's total imports.

The major challenges facing the region include:

- Food security
- Trade facilitation deficiencies
- Infrastructure deficiencies
- Lack of marketing information
- The need to build a trading network in the region
- Other threats (IUU fishing, climate change, pandemics)

Based on the analysis of trade and the challenges facing the countries of the region, it is proposed that steps be taken to secure adequate supplies of healthy seafood at affordable prices to enhance food security. Practical initiatives that are expected to contribute to this include:

¹ Separate, short country reports have been compiled for all 23 countries. These are submitted separately.

- The proposed development of an IORA trade strategy and action plan for fish trade to ensure improved access of fish and fisheries product to domestic, regional and export markets.
- The establishment of a market information system, partly by entering into close collaboration with INFOFISH, which is such a service serving the Asian and Pacific region. An expansion of the INFOFISH geographical coverage would be necessary to serve also the African member states of IORA. Furthermore, it would be necessary to secure a permanent financing of such a service. In order to explore this proposal further, it is recommended that a Project Proposal be worked out and submitted to IORA.
- Trade and pandemics: The COVID-19 pandemic has affected the seafood trade all over the world. In general, supplies are expected to decline, and containment restrictions will affect logistics, especially air transport, as well as demand and prices. A specific result has been the emergence of a stronger retail sector and growth in home delivery services, while at the same time the foodservice sector is declining. Whether or not these changes will become permanent is uncertain. In the IORA region, there is reason to be concerned about the effect of the pandemic on food security and public health. A shortage in supplies may occur because of problems with logistics. The report gives some examples of these effects in various IORA member states.
- Capacity building, including training of fish trade actors (policymakers, fish trade business associations, civil society, etc.) to enhance their ability to negotiate (in general trade related debates and agreements) and to improve their capacities to implement trade reforms specifically for improved fish trade.
- Informal trade: while informal trade is quite common in African countries, no study of such trade in the IORA region as a whole has been undertaken. Consequently, it is difficult to say how this affects the total trade picture. It is assumed that informal trade is less prevalent in Asia, but uncertainties about it exist. It is therefore recommended that a study of informal trade in the IORA region be undertaken.

2. Introduction and methodology

The Indian Ocean Rim Association (IORA) and France through the Agence Française de Développement (French Development Agency) (AFD) signed a Memorandum of Understanding (MoU) on the 9th March 2020 for “Strengthening the Capacities of IORA in Promoting the Blue Economy and Fisheries Management”.

The partnership will support the implementation of the IORA Action Plan (2017-2021) with an allocation of EUR1 million over three years. It will offer expertise, training, networking and material resources to decision makers, officials and experts working to promote regional cooperation in blue economy and fisheries management issues. In addition, the project will strengthen the capacity of the IORA Secretariat.

The overall objective of the technical assistance (TA) is to “support IORA and its member states in the coordination and implementation of the Action Plan on Blue Economy and Work Plan of IORA CGFM, with a strong focus on fisheries, aquaculture and protection of marine environment.”

One of the specific objectives of this TA is “to promote and implement open market access to fish trade, including aquaculture”. In the context of this objective, the activity 4.1 “Enhance the knowledge of IORA member states on international trade and markets for fisheries and aquaculture products” is planned as part of the IORA Action plan. A fisheries and aquaculture value chain/market expert has been mobilised under the TA Study Fund to undertake this activity. He is supported by a senior fisheries economist.

The methodology adopted within that activity was to undertake a literature review and data gap analysis of information on international trade and markets for fisheries and aquaculture products in

the IORA region in a process of validation of the study scope with the IORA Secretariat. At the same time, a general review of fish trade, with strengths, weaknesses, opportunity, threats as well as gaps took place which also included country/regional profiles. Dependent on the international sanitary situation, it was anticipated that the fisheries and aquaculture value chain/market expert would visit the IORA Secretariat during this process to examine results of a questionnaire, communicate some of the findings of the study and prepare for a subsequent validation workshop/webinar of the review. This was not possible because the gravity of the Covid-19 situation remained high throughout the period of the review. Few responses were received from the questionnaire. Nevertheless, it is anticipated for the findings and validation workshop to take place in the second half of 2021, situation permitting.

This component of the TA to enhance the knowledge of IORA member states on international trade and markets for fisheries and aquaculture products was initiated in November 2020. The Project, in part, aimed to produce a **Fish Trade Study** following a review of the IORA member states' present situation (i.e. fish production, exports, imports, legislation, direction of trade, country memberships in trading blocks, trade agreements, fish trade data etc.). The study would also analyse countries' constraints and opportunities; and propose recommendations on how IORA can further support its MS in the field of international trade and markets of fish products, in a context of more sustainability value chains.

The present report consists of this study of international fish trade reviewing the situation in the IORA region. A set of country profiles capturing the situation of each IORA country, will be separately provided to the IORA Secretariat.

3. Literature review and sources of information

A detailed literature review and gap analysis of information on international trade and markets for fisheries and aquaculture products formed part of a separate previous report². A summary of parts of that report is provided below.

3.1. Literature review

Through the Internet, it was possible to identify recent studies of parts of the region, and these have been used to form an updated picture of the situation in the region. In addition, sources like the World Bank, The United Nations (UN), the Food and Agriculture Organization of the United Nations (FAO) and others have been used to obtain more general information about the countries (population, land area, EEZ area, GDP etc.).

The reports reviewed were of variable quality and coverage but provided valuable background information about the region and the individual countries. The review also revealed that the IORA member states vary widely in terms of technological level, type of fisheries, economic force, export and import performance, and potential.

² Mapfumo B., and Hempel E., 2021. *Literature review and gap analysis of information on international trade and markets for fisheries and aquaculture products*. IORA/AFD Technical Assistance Project – Technical Report No. 2, 22pp.

3.2. Desk study

Because of the COVID-19 pandemic, this study had to rely on desk study procedures, and it has not been possible to collect information in the field by visiting the countries.

In an attempt to collect information from individual countries, a survey questionnaire was sent out via the IORA secretariat. However, only three responses were received, so this exercise was not helpful.

3.3. Data collection and sources

Obtaining reliable statistics posed a problem. Many countries had very poor statistics collection and reporting routines, and methods of collection varied a great deal. All countries reported their statistics to the United Nations, but some UN agencies (like the FAO) evaluate and in some cases adjust the figures they receive. However, these evaluations and adjustments are done similarly over time, and therefore acquire some consistence.

In this report, we have used two main sources of statistical information:

- **FAO FishStat J**, which is a large database that includes landings from capture fisheries, aquaculture production, export and imports figures, and commodity production figures. The main drawback with the FAO statistics is that they are published quite late. For production statistics, the time lag is about 15 – 18 months, and for trade statistics it is currently over three years. A further drawback, which concerns the FAO trade statistics, is that they do not give the direction of trade, i.e. destination of exports from a country or the origin of imports into the country. The main advantage of the FAO statistics is that they are very easy to use and have a user-friendly software that allows the user to define specific groups of products or countries.
- **ITC Trade Map** is a net-based database with basically the same statistical raw material as the FAO statistics, but ITC has not evaluated or adjusted the national statistics registered by UN COMTRADE. Consequently, ITC are able to publish their figures much earlier. At the beginning of 2021, figures for 2020 were available for a number of countries, while for other countries, the most recent data included figures only up to 2015. The main drawback with ITC Trade Map is that the tables are sometimes incomplete (and uncorrected), and the software system is cumbersome and very time-consuming to use.

Because of the different practices of FAO and ITC, the trade figures are not exactly the same. Therefore, there are differences when comparing figures from the two sources.

We have not been able to obtain any national statistics or reports from the national authorities. With regard to national statistics, these are not always reliable, and very often they are more an expression of objectives and targets rather than actual historical figures. Because of this, the authors have chosen to rely on official UN/FAO statistics rather than the national statistics.

For general economic data, population statistics etc., figures from the World Bank, the International Monetary Fund (IMF) and FAO/UN have been used.

In addition to the statistical data, the team has undertaken a large amount of desk research, and to some extent team members have been able to use first-hand information collected during field visits in connection with previous assignments.

4. Description of the IORA region

As the third largest ocean in the world, the Indian Ocean remains an important lifeline to international trade and transport, as well as an important source of fish and other seafood.

Home to nearly 2.3 billion people (2017), IORA Member States are rich in cultural diversity and richness in languages, religions, traditions, arts and cuisines.

IORA member states vary considerably in terms of their areas, populations and levels of economic development. They may also be divided into a number of sub-regions (Australasia, Southeast Asia, South Asia, West Asia, Eastern and Southern Africa), each with their own strategic regional groupings (such as ASEAN, SAARC, GCC and SADC, to name a few). Despite such diversity and differences, these countries are bound together by the Indian Ocean.

Figure 1: Geographical map of the IORA region



While the official names of the member states are recognized by the study team, for purposes of brevity, we are using short names as follows:

Table 1: Member states official and short names

Short name	Official name
Australia	Commonwealth of Australia
Bangladesh	People's Republic of Bangladesh
Comoros	Union of Comoros
India	Republic of India
Indonesia	Republic of Indonesia
Iran	Islamic Republic of Iran
Kenya	Republic of Kenya
Madagascar	Republic of Madagascar
Malaysia	Malaysia
Maldives	Republic of Maldives
Mauritius	Republic of Mauritius
Mozambique	Republic of Mozambique
Oman	Sultanate of Oman
France (Réunion)	Réunion overseas department of France
Seychelles	Republic of Seychelles
Singapore	Republic of Singapore
Somalia	Federal Republic of Somalia
South Africa	Republic of South Africa
Sri Lanka	Democratic Socialist Republic of Sri Lanka
Tanzania	United Republic of Tanzania
Thailand	Kingdom of Thailand
UAE	United Arab Emirates
Yemen	Republic of Yemen

Réunion Island, in the Indian Ocean, is included in this study as an overseas department of France. France became the 23rd Member of IORA in December 2020. In this study, the authors have, in consultation with COFREPECHE and SOFRECO, focused on France (Réunion) information only.

5. The fisheries and aquaculture sector in the region

5.1. Basic economic information

The IORA includes 23 member states with a total population of about 2.3 billion. The combined land area of these countries amounts to 20.6 million km², while the combined EEZ is 27.8 million km². The GDP per capita varies enormously, from a highest of USD 65 233 per person in Singapore to the lowest, USD 127 in Somalia. Thus, the region includes some very rich countries (Singapore, Australia, United Arab Emirates), as well as some very poor nations within the category of LDCs (e.g. Somalia, Mozambique, Madagascar, Yemen)

Table 2: Land area, population, GDP and EEZ area (Source: FAO, World Bank)

Country	Land area (km ²)	Population (2017 ¹)	GDP/capita ² (USD – 2017)	World Bank classification	EEZ (km ²) ³
Australia	7 617 930	24 584 620	53 831	High income	8 505 000
Bangladesh	133 910	159 685 424	1 564	Lower Middle Income	86 000
Comoros	2 170	813 892	1 312	Lower Middle Income	163 000
India	2 973 190	1 338 676 785	1 980	Lower Middle Income	2 305 000
Indonesia	1 826 440	264 650 963	3 837	Upper Middle Income	6 159 000
Iran	1 636 000	80 673 883	5 628	Upper Middle Income	168 000
Kenya	569 250	50 221 142	1 578	Lower Middle Income	116 000
Madagascar	581 540	25 570 512	450	Low Income	1 225 000
Malaysia	328 550	31 104 646	10 118	Upper Middle Income	334 000
Maldives	300	496 402	9 802	Upper Middle Income	923 000
Mauritius	2 030	1 264 499	10 491	High Income	1 284 000
Mozambique	784 090	28 649 018	441	Low Income	578 000
Oman	212 460	4 665 928	15 170	High Income	533 000
France (Réunion)	2 511	859 959	25 900	High Income	315 000
Seychelles	455	96 418	15 536	High Income	1 336 000
Singapore	683	5 708 041	56 746	High Income	1 000
Somalia	627 337	14 589 000	127	Low Income	825 000
South Africa	1 219 912	57 009 756	6 120	Upper Middle Income	1 535 000
Sri Lanka	64 740	21 128 032	4 135	Lower Middle Income	532 000
Tanzania	886 037	54 660 339	975	Lower Middle Income	241 000
Thailand	511 770	69 209 810	6 579	Upper Middle Income	299 000
UAE	83 600	9 487 203	40 325	High Income	58 000
Yemen	527 970	27 834 819	1 123	Low Income	552 000
TOTAL	20 592 875	2 271 641 091	3 473		28 084 000

Source: FAO,

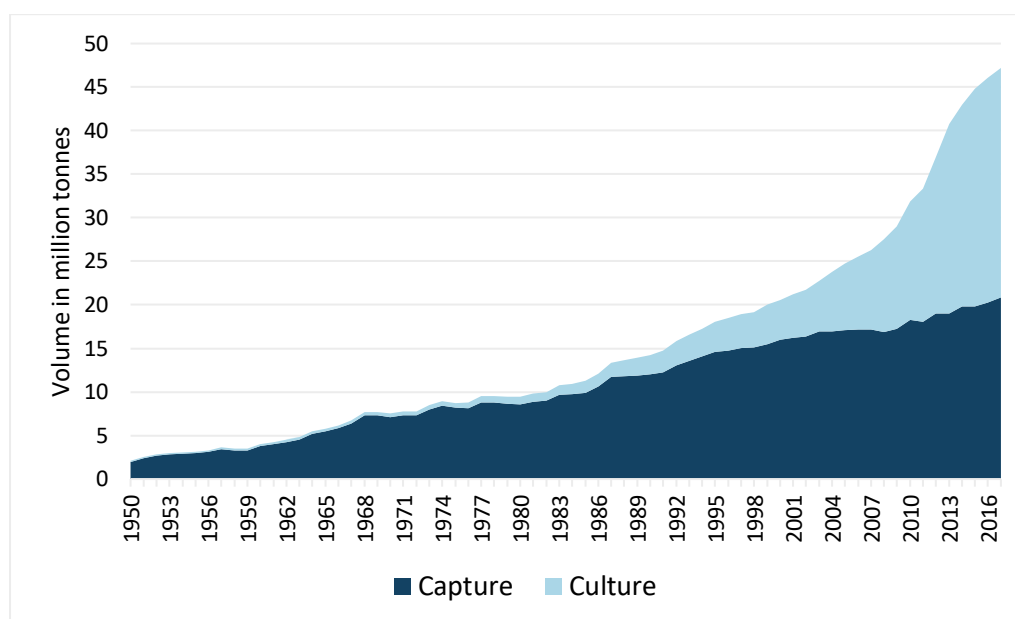
Source: World Bank

These figures are indicative only, based on information in Liqusearch.com. This report does not imply the expression of any opinion whatsoever concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

5.2. Fisheries production by capture fisheries and aquaculture

The total production of aquatic organisms (including aquatic plants and mammals) in IORA member countries in 2018 amounted to 48.0 million tonnes. Capture fisheries amounted to 21.8 million tonnes (22% of world total capture production), while the region's aquaculture production amounted to 26.2 million tonnes (17% of world total aquaculture production).

Figure 2: Landings and aquaculture production in IORA member countries



Source: FAO FishStat, 2020; NB: Aquaculture production figures include aquatic plants, which in some countries amounts to a large production.

Unlike the global development trend, which shows that capture landings have stagnated, the IORA member countries as a group still show some growth. Aquaculture production in the region has been extremely strong but now shows signs of levelling off.

While capture fisheries have been on a relatively steady growth curve, aquaculture production was moderate until the early 1980s, and then really took off from about 2008 – 2009. The potential for further growth in the region is considered good, especially for aquaculture production.

The largest fishing nations in the region are Indonesia (7.3 million tonnes landed in 2018), India (5.3 million tonnes), and Bangladesh (1.9 million tonnes). The same countries also dominate the list of the largest aquaculture producers: Indonesia (14.7 million tonnes), India (7.1 million tonnes), and Bangladesh (2.4 million tonnes). These figures include aquatic plants, which in the case of Indonesia constitute a large portion of the total.

However, it should be pointed out that an important part of the resources harvested in the Indian Ocean is not registered as landings by the countries of the region. This is particularly true for the SWIO and island states like Mauritius, Seychelles and Comoros. European and Asian fleets harvest large amounts of tuna in the Indian Ocean on the high seas as well as under licenced access to the EEZs of some IORA Members, and although some of this catch is landed or transhipped in the countries of the region, they are not registered as landings in the country. Smaller amounts of demersal fish are taken by non-IORA member countries on the high seas of the Indian Ocean. Catches of tuna and of high-seas demersal fish are regulated by IOTC and SIOFA, respectively.

Table 3: Capture fisheries production in IORA member countries (in tonnes)

Country	2011	2012	2013	2014	2015	2016	2017	2018
Australia	185 519	172 904	170 064	167 530	168 329	188 113	180 758	186 576
Bangladesh	1 600 918	1 535 715	1 550 446	1 591 190	1 623 837	1 674 770	1 801 084	1 871 225
Comoros	38 180	36 296	43 732	9 256	12 674	16 407	16 820	13 089
India	4 336 132	4 895 141	4 665 440	4 999 493	4 862 038	5 196 945	5 553 948	5 342 888
Indonesia	5 759 674	5 865 661	6 143 599	6 530 407	6 739 658	6 584 389	6 783 899	7 260 640

Country	2011	2012	2013	2014	2015	2016	2017	2018
Iran	487 633	537 271	553 776	620 427	631 122	689 722	782 480	828 872
Kenya	181 450	158 805	163 207	169 161	165 367	142 133	121 836	123 000
Madagascar	127 070	118 075	104 597	95 821	114 751	142 333	161 606	129 568
Malaysia	1 382 879	1 481 361	1 492 620	1 468 726	1 496 055	1 584 371	1 474 370	1 461 701
Maldives	120 835	120 000	130 217	128 695	127 381	129 331	142 378	151 013
Mauritius	7 306	6 352	7 913	14 655	15 796	18 211	24 987	28 314
Mozambique	195 280	210 696	222 101	253 023	286 717	299 753	329 561	328 276
Oman	158 566	191 563	206 169	211 037	257 022	279 606	347 539	553 445
France (Réunion)	3 037	2 512	2 767	2 512	2 804	3 127	2 247	2 298
Seychelles	75 481	68 687	74 127	75 116	104 984	127 128	142 765	145 614
Singapore	1 618	1 969	1 645	1 433	1 265	1 234	1 110	1 311
Somalia	30 000	30 000	30 000	30 000	30 000	30 000	30 000	30 000
South Africa	544 924	719 236	430 846	609 251	572 312	622 070	529 910	570 545
Sri Lanka	428 204	475 801	494 436	530 482	502 062	520 931	507 979	510 537
Tanzania	348 908	379 425	380 260	342 012	375 450	371 153	389 026	375 755
Thailand	1 835 126	1 719 628	1 824 829	1 670 035	1 501 370	1 530 544	1 500 447	1 707 136
UAE	75 147	72 728	73 000	73 203	73 000	73 000	73 000	73 000
Yemen	154 061	227 115	228 783	213 402	176 778	152 131	131 290	131 308
TOTAL	18 077 948	19 026 941	18 994 574	19 806 867	19 840 772	20 377 402	21 029 041	21 826 111

Source: FAO FishStat, 2020

In terms of aquaculture production in the IORA region, in 2018, the total aquaculture production of the IORA member States represented 26.3 million tonnes, or about 17 percent of the world volume; and accounting for 46 percent of total seafood production in the region. This includes aquatic plants. The value of aquaculture production was nearly US\$40 billion in 2018. Aquaculture production has shown rapid annual growth rates in the last decade, but is now growing modestly according to figures of the last five years (2014 – 2018) showed in Table 4 below.

Table 4: Total aquaculture production by IORA member countries (in tonnes - including aquatic plants)

Country	2011	2012	2013	2014	2015	2016	2017	2018
Australia	73 127	78 992	76 417	73 678	83 725	92 450	89 825	96 799
Bangladesh	1 523 759	1 726 066	1 859 808	1 956 925	2 060 408	2 203 554	2 333 352	2 405 416
Comoros	-	-	-	-	-	-	-	negligible
India	3 677 584	4 213 980	4 555 209	4 893 002	5 263 002	5 702 002	6 184 869	7 071 302
Indonesia	7 937 072	9 599 765	13 301 408	14 375 287	15 649 311	16 002 319	16 118 238	14 772 104
Iran	247 262	296 514	325 325	320 174	346 118	398 129	412 887	439 718
Kenya	22 295	21 888	23 901	24 498	19 058	15 357	12 760	15 524
Madagascar	10 544	9 988	12 549	15 440	22 694	25 998	28 335	12 758
Malaysia	526 693	634 876	530 702	521 014	506 965	407 887	427 516	391 977
Maldives	-	-	-	-	-	-	-	negligible
Mauritius	537	512	397	778	776	1 021	1 254	2 070
Mozambique	796	604	721	1 179	1 133	1 180	1 835	127
Oman	157	168	353	282	170	103	77	451
France (Réunion)	-	-	-	-	-	-	-	negligible

Country	2011	2012	2013	2014	2015	2016	2017	2018
Seychelles	-	-	-	-	-	-	-	negligible
Singapore	4 336	4 232	5 566	5 262	6 896	6 112	5 891	5 702
Somalia	-	-	-	-	-	-	-	negligible
South Africa	5 343	5 927	6 613	7 222	6 730	8 094	6 338	7 868
Sri Lanka	11 912	8 840	30 881	34 220	36 038	30 974	28 756	30 921
Tanzania*	137 649	160 803	120 611	143 348	183 236	123 699	129 415	120 086
Thailand	1 201 455	1 272 100	997 517	897 865	920 323	962 673	893 974	890 864
UAE	415	420	780	788	790	2 685	3 255	3 350
Yemen	150	100	-	-	-	-	-	negligible
TOTAL	15 381 085	18 035 774	21 848 758	23 270 962	25 107 374	25 984 238	26 678 577	26 267 038

Source: FAO FishStat, 2020

*Figures for Tanzania include seaweed (aquatic plants) from Zanzibar Island

The countries with the dominant production are Indonesia, India, Bangladesh, Thailand, Iran and Malaysia. They each represent production of above 350 000 MT per year. Two countries have production of above or equal to 100 000 MT per year (Tanzania and Australia). All other IORA members have production of less than 30 000 MT per year, with some such as Comoros, Maldives, Somalia, Yemen, Seychelles, France (Reunion) producing negligible volumes. According to a recent IORA report, this disparity has several root causes, from size of the country and its population, areas suitable for aquaculture, traditional social structure in rural areas, development approaches, market dynamisms and accessibility and experiences on aquaculture production³.

Of the total aquaculture production of the IORA countries, almost 58.5% comes from continental aquaculture, 41% from aquatic plants and the rest from marine aquaculture.

Note: Detailed narrative and analyses of aquaculture production in IORA region is provided in the Technical Report No.03 –“Review of Aquaculture Governance and Development of Small-Scale Aquaculture in the IORA region”.

5.3. Seafood processing – main product forms

The amount of processing done varies greatly from country to country. In Somalia, almost no processing is registered, while in Thailand, India and Indonesia, processed production amounts to over 2 million tonnes for each of the countries. Processed production of Mauritius, Seychelles, Singapore, Thailand (partly) and Yemen are higher than their own capture and aquaculture production as they accept significant amounts of product from other IORA members or high-seas fishing fleets. The total processed production of the region has increased steadily over the years, and in 2018 amounted to some 8.4 million tonnes (Table 5).

The largest processed product groups include fresh, chilled or frozen fish, prepared or preserved fish (includes canned), and dried, salted or smoked fish. In the cases of Mauritius and Seychelles, canned tuna makes up about half of the category prepared and preserved fish (HS 1604). The region is also an important producer of crustaceans, especially shrimp.

³ Technical Report No.03 –“Review of Aquaculture Governance and Development of Small-Scale Aquaculture in the IORA region”

Table 5: Processed production in IORA countries (in tonnes)

Country	2013	2014	2015	2016	2017	2018
Australia	31 263	34 875	30 653	38 698	27 923	26 225
Bangladesh	123 309	123 031	122 817	122 825	126 463	128 063
India	1 677 764	1 971 036	1 949 577	2 130 216	2 097 762	2 194 783
Indonesia	2 060 437	2 064 746	2 019 370	2 081 127	2 228 652	2 122 729
Iran	139 817	161 386	257 987	235 902	368 861	373 326
Kenya	43 502	44 758	44 089	32 990	23 428	24 330
Madagascar	56 586	51 162	71 161	56 750	35 240	42 272
Malaysia	205 918	217 520	183 850	172 025	147 860	150 456
Maldives	57 553	55 089	65 050	58 885	98 281	110 751
Mauritius	60 985	67 413	78 761	81 174	85 688	91 146
Mozambique	18 256	16 986	29 812	20 863	20 100	19 965
Oman	28 000	24 000	45 000	44 590	49 900	100 945
Seychelles	115 606	111 030	140 978	165 664	186 239	194 113
Singapore	46 104	46 130	46 112	46 771	49 419	47 167
Somalia	...	...	...	...	...	0
South Africa	163 561	229 304	211 159	234 308	200 434	200 977
Sri Lanka	107 120	98 768	75 390	84 020	87 700	89 931
Tanzania	38 574	43 354	41 164	38 187	12 622	38 097
Thailand	2 549 228	2 589 951	2 489 458	2 397 765	2 241 921	2 317 296
UAE	14 420	14 620	14 670	14 470	14 720	15 050
Yemen	191 530	182 022	183 340	159 888	152 275	142 445
TOTAL	7 729 533	8 147 181	8 100 398	8 217 118	8 255 488	8 430 067

Source: FAO FishStat, 2020

Table 6: IORA Processed production by major commodities (in tonnes)

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	1 095 389	1 147 274	1 243 723	1 099 397	1 152 410
Crustaceans and molluscs, prepared or preserved	182 207	190 929	203 266	175 223	175 170
Fish, dried, salted, or smoked	1 539 916	1 557 999	1 584 789	1 600 564	1 574 410
Fish, fresh, chilled or frozen	2 792 066	2 598 129	2 643 098	2 830 480	2 861 796
Fish, prepared or preserved	1 455 049	1 563 132	1 536 272	1 558 343	1 645 521
Meals	883 921	856 188	849 750	818 876	864 836
Oils	198 633	186 747	156 220	172 605	155 924
TOTAL	8 147 181	8 100 398	8 217 118	8 255 488	8 430 067

Source: FAO FishStat, 2020

5.4. Seafood supplies and consumption

Seafood consumption in IORA member states varies significantly. In Table 7, the total for the 23 countries is presented, showing that in 2017 (the latest year for which these figures are available), total supplies of food fish and seafood amounted to 33.6 million tonnes. This gave an estimated supply per person per year of 14.8 kg.

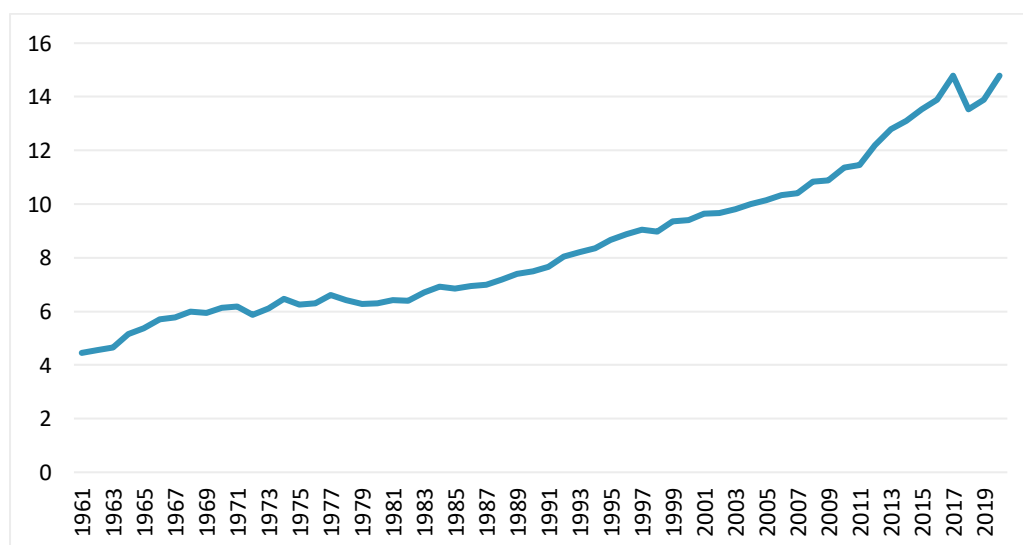
Table 7: Food balance sheets – IORA member countries (in tonnes)

	2013	2014	2015	2016	2017
Production	31 093 945	32 484 586	33 130 754	34 672 495	37 168 349
Food exports	6 039 439	6 132 246	5 689 779	5 940 206	5 919 312
Food imports	4 582 771	4 761 919	4 708 192	4 923 745	5 088 290
Non-food uses	2 029 886	2 432 661	2 193 748	2 508 433	2 767 848
Stock variations	12 233	-3 894	924	-4 822	12 762
Total food supply	27 619 624	28 677 704	29 956 343	31 142 778	33 582 241
Population	2 158 768	2 187 043	2 215 138	2 243 064	2 270 781
Supply kg/person/year	12.8	13.1	13.5	13.9	14.8

Source: FAO FishStat, 2020

According to preliminary data, the apparent consumption of seafood in the region has increased at a steady rate until 2018, when there was a sudden fall. But consumption bounced back in 2020. Over a longer period (1950 – 2017), consumption per person per year has increased steadily from 4.5 kg to 14.8 kg (Fig. 2). There are however disparities amongst the countries linked with their tradition, the availability of fish and the history. But in general, it can be noticed that all IORA countries with important aquaculture production have increased their consumption of fish per capita per year. At the overall national level, although capture fisheries production has stagnated or declined, per capita fish consumption has been increasing in most countries with active aquaculture development. The increase in fish consumption seems to have been supported by the annual increase in aquaculture production, according to a recent IORA assessment report⁴.

Figure 3: Apparent consumption/food supplies in IORA region (Kg per person per year)



⁴ Technical Report No.03 – “Review of Aquaculture Governance and Development of Small-Scale Aquaculture in the IORA region”

5.5. International trade trends

The region as a whole is an active seafood exporter, but also an important importer of seafood. The big producing countries, such as India, Thailand and Indonesia, are also the big exporters. In fact, these three countries all rank among the world’s 15 largest exporters.

Some of the countries of the region are also big importers of seafood, for example Thailand, Australia, Malaysia and Singapore. In the case of Thailand, much of imports consist of raw materials that are processed and then re-exported, while for example Singapore is an important trading hub with large imports as well as exports.

In terms of value, the IORA region is a net exporter of seafood. In 2018, total exports amounted to USD 24.1 billion, while imports amounted to USD 11.0 billion. The gap between exports and imports has been relatively stable, but in recent years it has widened somewhat (Fig.3).

When looking at the volume of this trade, we see that the region is still a net exporter, but the gap between exports and imports is much narrower. In 2018, the export volume was 5.6 million tonnes, while the import volume was 4.6 million tonnes.

Figure 4: IORA exports and imports of seafood by value (Value in USD billion)

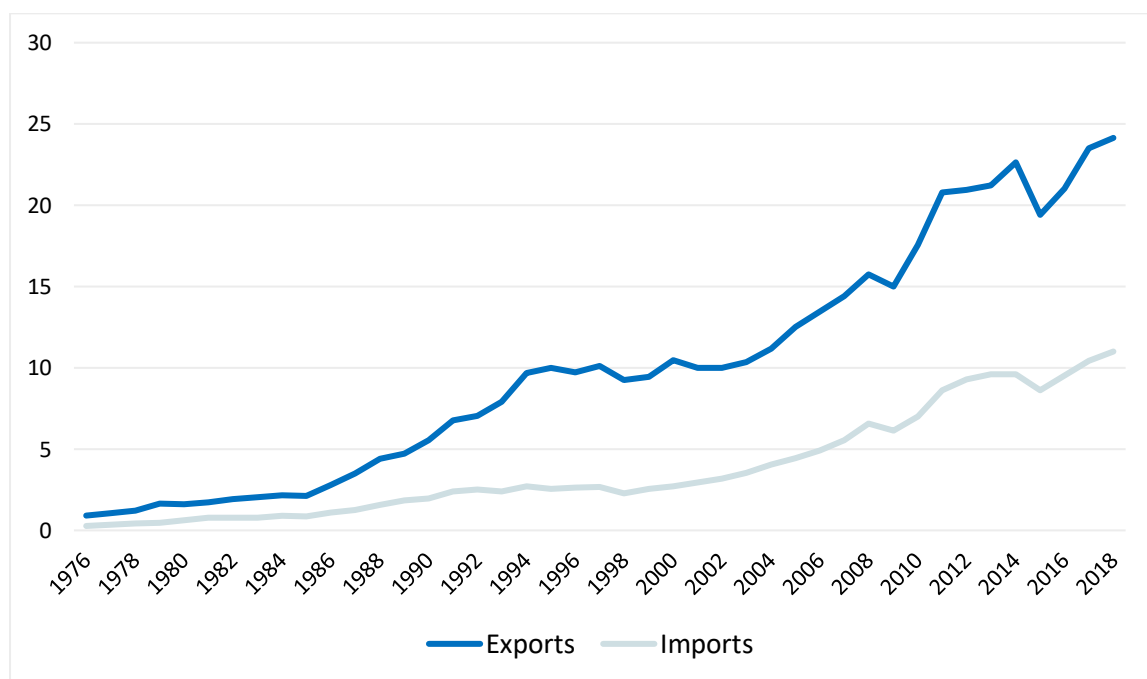
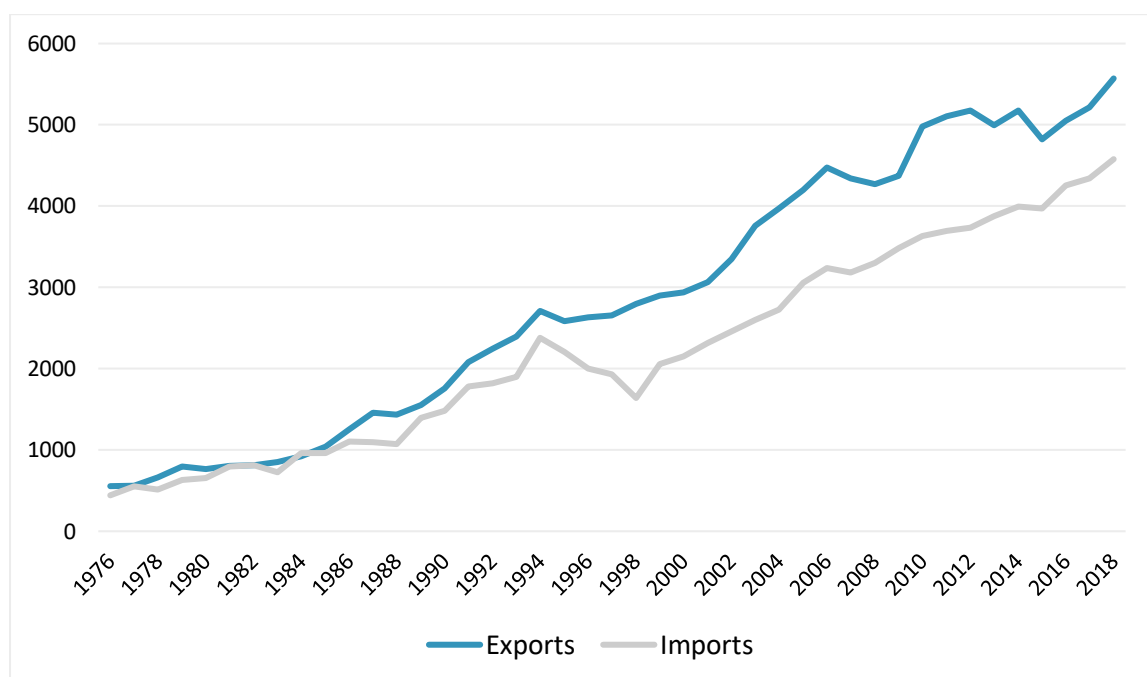


Figure 5: IORA exports and imports by volume (in x 1000 tonnes)



Source: FAO FishStat

5.5.1. Fisheries trade balance

As a region, there is a positive trade balance, i.e. the region exports more than it imports. However, this also varies a great deal from country to country.

Table 8: Seafood trade balance of IORA countries 2018

	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Australia	51 795	301 620	-249 825	1 120 939	1 632 407	-511 468
Bangladesh	66 442	142 051	-75 609	447 906	122 095	325 811
Comoros	0	1 722	-1 722	0	2 494	-2 494
India	1 436 108	54 873	1 381 235	6 940 493	153 008	6 787 485
Indonesia	1 106 086	273 093	832 993	4 703 142	423 664	4 279 478
Iran	119 881	34 751	85 130	386 484	89 879	296 605
Kenya	7 624	27 828	-20 204	31 653	29 846	1 807
Madagascar	24 261	8 255	16 006	151 313	16 393	134 920
Malaysia	262 745	422 473	-159 728	762 883	1 059 755	-296 872
Maldives	71 774	3 782	67 992	178 386	30 699	147 687
Mauritius	141 222	169 687	-28 465	473 387	327 032	146 355
Mozambique	14 520	40 604	-26 084	72 421	78 909	-6 488
Oman	283 034	32 284	250 750	324 278	66 645	257 633
France (Réunion)	0	0	0	0	0	0
Seychelles	166 657	78 834	87 823	496 801	163 825	332 976
Singapore	36 584	198 175	-161 591	357 504	1 162 525	-805 021

	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Somalia	4 225	2 893	1 332	7 956	13 811	-5 855
South Africa	193 696	276 770	-83 074	716 641	509 992	206 649
Sri Lanka	28 337	94 320	-65 983	286 658	213 416	73 242
Tanzania	54 308	12 110	42 198	213 131	10 423	202 708
Thailand	1 394 091	2 129 605	-735 514	6 077 436	4 068 859	2 008 577
UAE	54 243	257 768	-203 525	269 454	778 105	-508 651
Yemen	53 123	13 935	39 188	124 030	48 505	75 525
TOTAL	5 570 756	4 577 433	993 323	24 142 896	11 002 287	13 140 609

Source: FAO FishStat

Table 8 sums up the situation country by country in 2018. We see that some countries, like Thailand, are importing large volumes of low value fish and exporting high value products, whereas other countries, like Somalia, are exporting low-value products and importing more high-value ones.

The “normal” situation for most developing nations would be to import low-value products and export high-value ones. The reasoning behind this would be that by importing large amounts of low-value products, one is able to feed a larger part of the population, while at the same time exporting high-value products to pay for the imports of the cheap products.

5.5.2. Terms of trade

In economics and international trade, the Terms of Trade (ToT) coefficient is a simple measure of the trade performance of a country. The ToT is calculated by dividing the country’s average export price by its average import price.

ToT = Average export price/Average import price

Consequently, a high ToT coefficient indicates a high surplus in trade. Scores over 1.0 indicate a surplus, while scores of less than 1.0 indicate a deficit. The ToT coefficient is consequently a simple standard measure of trade performance.

Table 9: Terms of Trade

Country	Exports Tonnes	Exports USD 1000	Imports Tonnes	Imports USD 1000	Average export price	Average import price	ToT
Australia	51 795	1 120 939	301 620	1 632 407	21.64	5.41	4.00
Bangladesh	66 442	447 906	142 051	122 095	6.74	0.86	7.84
Comoros	0	0	1 722	2 494	0.0	1.45	0.00
India	1 436 108	6 940 493	54 873	153 008	4.83	2.79	1.73
Indonesia	1 106 086	4 703 142	273 093	423 664	4.25	1.55	2.74
Iran	119 881	386 484	34 751	89 879	3.22	2.59	1.25
Kenya	7 624	31 653	27 828	29 846	4.15	1.07	3.87
Madagascar	24 261	151 313	8 255	16 393	6.24	1.99	3.14
Malaysia	262 745	762 883	422 473	1 059 755	2.90	2.51	1.16
Maldives	71 774	178 386	3 782	30 699	2.49	8.12	0.31
Mauritius	141 222	473 387	169 687	327 032	3.35	1.93	1.74
Mozambique	14 520	72 421	40 604	78 909	4.99	1.94	2.57

Country	Exports Tonnes	Exports USD 1000	Imports Tonnes	Imports USD 1000	Average export price	Average import price	ToT
Oman	283 034	324 278	32 284	66 645	1.15	2.06	0.56
France (Réunion)	0	0	0	0	0	0	0
Seychelles	166 657	496 801	78 834	163 825	2.98	2.08	1.43
Singapore	36 584	357 504	198 175	1 162 525	9.77	5.87	1.67
Somalia	4 225	7 956	2 893	13 811	1.88	4.77	0.39
South Africa	193 696	716 641	276 770	509 992	3.70	1.84	2.01
Sri Lanka	28 337	286 658	94 320	213 416	10.12	2.26	4.47
Tanzania	54 308	213 131	12 110	10 423	3.92	0.86	4.56
Thailand	1 394 091	6 077 436	2 129 605	4 068 859	4.36	1.91	2.28
UAE	54 243	269 454	257 768	778 105	4.97	3.02	1.65
Yemen	53 123	124 030	13 935	48 505	2.33	3.48	0.67
TOTAL	5 570 756	24 142 896	4 577 433	11 002 287	4.33	2.40	1.80

Source: FAO FishStat, 2020

When the individual country figures are examined (Table 9), some major differences appear. Some countries have a substantial economic surplus in their foreign trade with fisheries products, while others run a significant deficit.

For most countries it would be desirable to achieve a high ToT. Thus, the ToT can be used as an indicator of *where* improvements in external trade performance should be sought.

For the region as a whole, the ToT is relatively low (at 1.80) but still positive (ToT > 1.0), indicating that on average, the region could be performing better. But there are notable variations from country to country.

Bangladesh, Tanzania, Sri Lanka and Australia have a ToT of between 7.84 and 4.00. This implies that they are exporting considerably more than they are importing in terms of value. However, in the case of Australia, there is a negative trade balance as measured in volume, i.e. the country imports a larger volume than it exports. But the average prices are in Australia's favour.

Bangladesh has a high ToT (7.84) as well as a positive trade balance measured by value. But the country has a negative tonnage trade balance. Importing low-value fish and exporting high-value products (shrimp) contributes to this.

Tanzania has a relatively high ToT at 4.56, and its trade balance is also positive. The same is to some extent true for Sri Lanka which has a high ToT (4.47), and a positive trade balance when measured in USD. But Sri Lanka imports more tonnage than it exports. This indicates that it exports high-value products while importing low-value products.

The largest exporter and importer of all the 23 countries is Thailand. But the ToT is just 2.28. Thailand imports 52 percent more by volume than it exports, but the *value* of exports is 49 percent higher than the value of its imports. This is because Thailand imports a lot of raw material which is processed and then re-exported, and it exports a lot of high-value products such as shrimp. By value, Thailand was the sixth largest exporting country in the world in 2018.

Countries with very low ToT scores are Maldives (0.31) and Comoros (0.0), which indicate very unfavourable trade performances. In the case of Comoros, the trade volumes are low and registered exports are nil, and accordingly the coefficient carries less meaning. In the case of France (Réunion), no exports or imports were recorded.

In the case of the Maldives, the high imports of valuable seafood products (Table 8) is a result of imports needed for their large tourist sector. Thus, the Maldives seafood balance is highly in their favour, but the ToT is low because of this fact.

5.5.3. Trade by commodities

While marine fish is the dominating commodity group in terms of volume (Table 10), crustaceans are dominating when it comes to trade value (Table 11).

Table 10: IORA imports by major commodity groups (in tonnes)

Commodity	2014	2015	2016	2017	2018
Aquatic plants	121 200	127 525	141 171	171 170	191 220
Crustaceans	1 797 662	1 395 994	1 439 708	1 569 094	1 641 557
Diadromous fishes	776 414	690 794	804 667	958 353	956 074
Freshwater fishes	338 081	342 180	341 258	354 681	403 561
Marine fishes	5 578 876	5 069 339	5 678 847	6 132 468	6 478 307
Misc. aquatic animal products	10 796	11 049	9 539	13 145	11 059
Misc. aquatic animals	57 709	57 873	48 753	61 466	61 514
Molluscs	939 920	937 269	1 069 599	1 167 021	1 258 847
Aquatic mammals	1 470	795	199	1 655	148
TOTAL	9 622 128	8 632 818	9 533 741	10 429 053	11 002 287

Source: FAO FishStat, 2020

Table 11: IORA exports by major commodity groups (Value in USD 1000)

Commodity	2014	2015	2016	2017	2018
Aquatic plants	267 842	196 417	159 306	198 877	253 771
Crustaceans	10 726 702	8 726 053	9 756 637	11 278 607	10 920 038
Diadromous fishes	466 954	502 018	385 636	439 999	395 872
Freshwater fishes	549 280	433 237	434 410	529 429	552 811
Marine fishes	8 729 233	7 716 700	8 140 799	8 680 064	9 403 958
Misc. aquatic animal products	26 957	25 169	26 316	29 781	26 106
Misc. aquatic animals	107 091	96 470	77 567	91 279	101 929
Molluscs	1 761 801	1 717 167	2 032 825	2 266 232	2 487 256
Aquatic mammals	1 560	4 626	171	1 139	1 155
TOTAL	22 637 420	19 417 857	21 013 667	23 515 407	24 142 896

Source: FAO FishStat, 2020

5.5.4. Exports by product and main destinations

Based on data from the ITC Trade Map database, Table 12 shows exports by IORA member states to the rest of the world by main commodity groups (HS 03, HS 1604, HS 1605, and HS 2301)

Well over two thirds (69%) of the value of exports include un-processed fish, crustaceans and molluscs (HS 03). The most active trading partners in terms of value are Asia and North America, which together account for 71.3% of the total value of the region's exports. By far the most active country in international trade is Thailand, which has a well-established fishing and fish processing industry, and ranks among the top six exporters of seafood in the world.

There are relatively little exports to Africa, the Middle East and South America and the Caribbean. Trade with Oceania is mostly with Australia and New Zealand, and less with the small island nations of the Pacific.

Exports to Europe are surprisingly modest, especially in view of the fact that several of the IORA member states are former colonies of European countries. However, one should point out that Table 12 shows the value of this trade, not the volume⁵. It is known, however, that several member states export quantities of raw materials which go into the processing industry in Europe. These raw materials tend to be less expensive by unit, and the table showing the value of exports consequently gives a somewhat incomplete picture.

Table 12: Exports by IORA member states by importing region (Value in USD 1000)

Importing region	HS 03	HS 1604	HS 1605	HS 2301	TOTAL	% share
Africa	163 328	195 782	7 351	5 985	372 446	1.6 %
North Africa	77 457	336 080	94 221	2 783	510 541	2.2 %
Middle East	861 885	539 319	34 860	11 835	1 447 899	6.2 %
Asia	6 375 509	702 655	535 323	246 812	7 860 299	33.7 %
South East Asia	1 917 136	263 599	89 075	152 688	2 422 498	10.4 %
Europe	2 439 643	892 178	157 150	38 002	3 526 973	15.1 %
North America	4 079 052	896 546	1 284 856	74 648	6 335 102	27.2 %
Latin America & Caribbean	33 387	65 773	7 516	0	106 676	0.5 %
South America	20 891	150 714	2 650	6 129	180 384	0.8 %
Oceania	167 485	328 482	51 791	13 902	561 660	2.4 %
Other	8 964	8	0	12	8 984	0.0 %
TOTAL	16 144 737	4 371 136	2 264 793	552 796	23 333 462	100.0 %

Source: ITC TradeMap

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 1605 = Crustaceans, molluscs and other aquatic invertebrates, prepared or preserved (excluding smoked)

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

5.5.5. Imports by products and main suppliers

Table 13 shows imports into IORA member states by major commodity groups and origin by region. Again, Asia is totally dominating this trade, accounting for no less than 59.5% of the total value of this trade. And again, Thailand is the most active trading partner.

The total value of imports amounts to less than half (44.8%) of the value of exports from the member states. This is consistent with what is shown in Table 13 and Table 14.

Most of the imports consist of round frozen fish, with some quantities of preserved or prepared products (much of this consists of canned tuna) for some of the countries. Imports of tuna into countries that have a tuna processing industry make up a lot of the trade.

⁵ Data on exported volumes is not readily available for all countries in the ITC Trade Map database, and have therefore not been included in the study.

Table 13: Imports by IORA member states (Value in USD 1000)

Exporting region	HS 03	HS 1604	HS 1605	HS 2301	TOTAL	% share
Africa	450 667	24 914	1 132	11 879	488 592	4.7 %
North Africa	95 822	12 182	76	117	108 197	1.0 %
Middle East	298 647	30 244	1 749	9 920	340 560	3.3 %
Asia	2 875 074	302 612	136 289	35 946	3 349 921	32.0 %
South East Asia	1 885 248	7766 73	141 822	71 321	2 875 064	27.5 %
Europe	1 183 888	64 427	7 928	208 298	1 464 541	14.0 %
North America	388 840	24 112	7 668	232 858	653 478	6.2 %
Latin America & Caribbean	26 884	0	818	1 292	28 994	0.3 %
South America	428 495	12 460	11 816	33 608	486 379	4.7 %
Oceania	541 247	19 069	10 040	82 403	652 759	6.2 %
Other	8 416	633	641	16	9 706	0.1 %
TOTAL	8 183 228	1 267 326	319 979	687 658	10 458 191	100.0 %

Source: ITC Trade Map

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 1605 = Crustaceans, molluscs and other aquatic invertebrates, prepared or preserved (excluding smoked)

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

5.5.6. Intra-regional trade trends

From an environmental point of view, intra-regional trade is thought to be desirable as it implies less travel and a smaller carbon footprint. At the macroeconomic level there are clear signs of a gradual change in Sub-Saharan Africa (SSA) and the Indian Ocean (IO) towards economic progress, increasing local supply of products and better market conditions for fish products. Markets in countries with growing economies exist for locally produced products. Imports of marine fish products from the Indian Ocean nations are quite limited, but growth trends are noted specifically for products with less demands on cold chains.

Present and future operators in the different fish value chains face a number of challenges that are more the less the same for all countries. Intra-regional trade is not seen as an end in itself, but rather as a source of contributory means to realize broader food security, economic development and socio-economic objectives. The focus is on how intra-regional trade can contribute towards solving the challenges.

Intra-regional trade in general appears to be little developed in the IORA region, except for the major trading countries among the IORA member states (Thailand, Australia, Malaysia, Singapore and UAE). These five countries together account for over 75% of the import value.

Table 14: Total imports by IORA member states by major commodity groups (Value in USD 1000)

Importing countries	HS 03	HS 1604	HS1605	HS2301	TOTAL	% share
Australia	143 986	283 955	42 233	7 259	477 433	16.8 %
Bangladesh	37 077	5 324	11	29 724	72 136	2.5 %
Comoros	240	984	0	0	1 224	0.0 %
India	14 621	1 467	199	5 902	22 189	0.8 %
Indonesia	41 434	19 916	2 282	5 821	69 453	2.5 %
Iran	24 218	728	29	1 190	26 165	0.9 %

Importing countries	HS 03	HS 1604	HS1605	HS2301	TOTAL	% share
Kenya	2 329	3 487	200	60	6 076	0.2 %
Madagascar	66	2 144	2	695	2 907	0.1 %
Malaysia	280 487	36 799	15 282	23 398	355 966	12.6 %
Maldives	14 364	1 633	1 835	5	17 837	0.6 %
Mauritius	44 824	6 906	541	292	52 563	1.9 %
Mozambique	10 318	3 832	16	313	14 479	0.5 %
Oman	101 013	19 322	836	0	121 171	4.3 %
Seychelles	5 771	738	651	1	7 161	0.3 %
Singapore	262 678	58 174	32 014	149	353 015	12.5 %
Somalia	69	24 082	9	0	24 160	0.9 %
South Africa	21 550	86 913	4 305	986	113 754	4.0 %
Sri Lanka	71 898	8 640	53	2 888	83 479	2.9 %
Tanzania	318	1 639	0	2	1 959	0.1 %
Thailand	523 976	57 669	7 226	17 925	606 796	21.4 %
UAE	282 027	70 543	2 837	18	355 425	12.5 %
Yemen	223	48 990	0	0	49 213	1.7 %
SUM IORA IMPORTS	1 883 487	743 885	110 561	96 628	2 834 561	100.0 %

Source: ITC Trade Map

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 1605 = Crustaceans, molluscs and other aquatic invertebrates, prepared or preserved (excluding smoked)

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

In an attempt to get an overview of the direction of intra-regional trade (i.e. trade between IORA member states), Table 15 was compiled. Unfortunately, the data which forms the basis for this table are very varied and probably not entirely reliable. Furthermore, some of the data are relatively recent (2019), while for other countries, there is a considerable time lag (2015, 2016, 2017)⁶. While the data vary a great deal, it should still give an indication of intra-regional trade.

Table 15 shows that there are great differences from country to country with regard to intra-regional trade. The main pattern seems to be that countries with a large export of prepared and preserved products (Thailand, Indonesia, Bangladesh, Mauritius, Seychelles, South Africa) tend to export little to other member states or neighbouring countries. At the same time, some countries are importing very little from other IORA member states (Tanzania, Seychelles, Indonesia).

⁶ In order to use the most comparable data available, it was decided to use figures for 2019 even in those cases where 2020 data were available.

Table 15: Intra-regional exports and imports from/to IORA member states (Value in USD 1000)

Country	Total IORA imports	Imports from IORA	Intra-IORA % of total	Total IORA exports	Exports to IORA	Intra-IORA % of total
Australia	1 452 221	497 539	34.3 %	1 271 175	90 865	7.1 %
Bangladesh	55 419	44 030	79.4 %	447 320	11 332	2.5 %
Comoros	3 338	654	19.6 %	0	0	-
India	136 122	48 808	35.9 %	6 846 033	620 446	9.1 %
Indonesia	634 968	67 666	10.7 %	4 505 365	460 027	10.2 %
Iran	56 647	56 647	100.0 %	335 592	66 466	19.8 %
Kenya	27 827	3 339	12.0 %	33 246	1 771	5.3 %
Madagascar	29 759	18 359	61.7 %	147 032	5 647	3.8 %
Malaysia	1 138 559	423 704	37.2 %	891 235	278 524	31.3 %
Maldives	33 941	30 059	88.6 %	154 348	66 716	43.2 %
Mauritius	282 384	106 481	37.7 %	391 455	28 197	7.2 %
Mozambique	100 347	10 888	10.9 %	66 192	6 424	9.7 %
Oman	71 392	55 657	78.0 %	315 750	91 421	29.0 %
Seychelles	112 006	7 150	6.4 %	314 343	30 781	9.8 %
Singapore	1 100 034	404 651	36.8 %	300 862	101 884	33.9 %
Somalia	42 297	24 145	57.1 %	36 432	8 831	24.2 %
South Africa	481 545	121 371	25.2 %	618 620	51 574	8.3 %
Sri Lanka	233 316	118 171	50.6 %	256 527	20 387	7.9 %
Tanzania	69 725	389	0.6 %	156 907	14 886	9.5 %
Thailand	3 777 983	670 848	17.8 %	5 715 327	660 246	11.6 %
UAE	753 974	365 875	48.5 %	402 053	81 332	20.2 %
Yemen	20 464	19 122	93.4 %	127 513	72 307	56.7 %
SUM	10 614 268	3 095 553	29.2 %	23 333 327	2 770 064	11.9 %

Source: ITC Trade Map

6. Issues and challenges

The extra-regional exports of fish products originate from a few species such as tunas, Nile perch, tilapias and shrimp. However, exports will remain important as foreign exchange earners, and new jobs will be created. Exports are regulated by inter-regional access and trade agreements, with limited scope for intervention by regional organizations.

The IORA member states are at different levels of development with regard to capture fisheries, aquaculture, fish processing, consumption and trade. Aquaculture is a fairly new activity with only a few larger companies engaged in production with international standards. However, key inputs such as feed and equipment may pose a problem and are costly. Physical, geographical and environmental conditions are in place for growth of aquaculture production. Groups of SME operators with only limited knowledge and understanding of norms, standards and good management practices (GMP) are increasing. Such uninformed activities can lead to early collapses, loss of investment funds, and may become devastating to the environment.

Thus there is ample scope for an increase in intra-regional trade to support food security, create jobs and increase foreign exchange earnings.

6.1. Food security

The World Food Summit of 1996 defined food security as existing “when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life”. Commonly, the concept of food security is defined as including both physical and economic access to food that meets people's dietary needs as well as their food preferences.

Food security is built on three pillars:

- Food availability: sufficient quantities of food available on a consistent basis;
- Food access: having sufficient resources to obtain appropriate foods for a nutritious diet;
- Food use: appropriate use based on knowledge of basic nutrition and care, as well as adequate water and sanitation.

Based on standard parameters such as population growth, expected production and production plans, for example plans to expand aquaculture production, plans to improve post-harvest handling, etc. we have made some forecasts of future demand and supply of fish (aquatic products from capture fisheries and aquaculture) in the region.

With a total estimated IORA population of approx. 2.6 billion in 2030, total regional demand is calculated at about 60 million tonnes per year in 2030 (Table 16). Per capita consumption of fish in 2030 is an estimate based on indications cited in FAO Fisheries Circular no. 972/5⁷.

Table 16: Population forecasts and demand forecasts

Country	Population		Kg/person		Demand 2030 (MT)
	2017	2030	2017	2030	
Australia	24 584 620	28 177 480	9.0	9.2	259 232 816
Bangladesh	159 685 424	178 993 870	12.4	13.3	2 380 618 471
Comoros	813 892	1 063 111	39.8	41.6	44 225 418
India	1 338 676 785	1 503 642 327	16.6	17.8	26 764 833 421
Indonesia	264 650 963	299 198 430	55.2	57.5	17 203 909 725
Iran	80 673 883	92 663 698	15.1	15.5	1 436 287 319
Kenya	50 221 142	66 449 655	7.9	8.5	564 822 068
Madagascar	25 570 512	35 622 312	16.9	18.2	648 326 078
Malaysia	31 104 646	36 095 052	38.9	40.5	1 461 849 606
Maldives	496 402	519 348	70.0	75.3	39 106 904
Mauritius	1 264 499	1 274 036	18.7	20.1	25 608 124
Mozambique	28 649 018	41 184 834	53.2	57.2	2 355 772 505
Oman	4 665 928	5 936 083	19.0	19.5	115 753 619
France (Réunion)	876 131	954 814	...	...	...
Seychelles	96 418	102 538	51.1	54.9	5 629 336
Singapore	5 708 041	6 262 465	21.8	22.7	142 157 956
Somalia	14 589 000	21 191 041	3.2	3.4	72 049 539
South Africa	57 009 756	65 956 090	4.8	5.0	329 780 450

⁷ <https://epub.sub.uni-hamburg.de/epub/volltexte/2010/658/pdf/lena.pdf>

Country	Population		Kg/person		Demand 2030 (MT)
	2017	2030	2017	2030	
Sri Lanka	21 128 032	22 023 018	57.9	62.2	1 369 831 720
Tanzania	54 660 339	79 162 723	23.4	25.2	1 994 900 620
Thailand	69 209 810	70 345 543	37.5	39.1	2 750 510 731
UAE	9 487 203	10 661 076	15.0	15.4	164 180 570
Yemen	27 834 819	36 406 895	9.4	9.6	349 506 192
TOTAL	2 271 657 263	2 603 886 439			60 478 893 186

Source: World Bank, 2011. Demand forecasts by this report's authors

Per capita consumption of fish in 2030 is based on an estimate of per capita consumption indicated in the Report of a Joint WHO/FAO Expert Consultation on Diet, Nutrition and the Prevention of Chronic Diseases held in 2003 (WHO Technical Report Series 916)⁸

This is a substantial increase from 2018, at which time demand was estimated at 48 million tonnes. Total supplies of fish in the region were in 2017 estimated at just under 50 million tonnes. In other words, total supplies to the region must be increased by 10 million tonnes, or 20%, by 2030.

Total fish production in the region is growing, but relatively slowly. Capture fisheries in inland waterways and water bodies may experience limited growth, but it is in the continental aquaculture sector that substantial growth can be expected.

6.2. Informal trade

In some of the countries, especially developing or LDCs in the region, there is considerable informal trade, which is not recorded by the authorities. Consequently, we have no reliable data for this trade.

Informal trade of fisheries products is widespread in Africa, including some of the SWIO IORA members, although by its very nature this trade is difficult to document and verify. While informal trade was briefly examined in another, relatively recent study⁹, no specific study of informal trade in the IORA region has been done in connection with the present study. Nevertheless, based on the experience of the authors, it is thought that such trade is less common in Asia than in Africa.

In Southern and Eastern Africa (IORA SWIO region), informal trade is thought to be particularly widespread in artisanal fisheries. In Tanzania, for instance, small pelagics (*Rastrineobola argentea* - Dagaa, mainly from Lake Victoria) are carried across borders in small quantities of 20-40 kg to avoid taxation.

Formalising this trade would help to increase customs revenues, facilitate more accurate data collection on trade flows and monitor compliance with sanitary and technical standards. However, stopping informal trade could also greatly slow down trade flows because of the cumbersome and lengthy border procedures in many African countries. This can pose a problem for perishable fisheries products where cold chains are not well developed. On the other hand, formalising and reducing this

⁸ <https://www.who.int/dietphysicalactivity/publications/trs916/en/>

⁹ Reference: Hempel, E. and Kariuki, J.: *Interim Technical Report: Building capacity to reduce the illegal fish trade around Lake Victoria*. Project funded by the European Union and executed by Pescares Italia. 19 August 2013. Part of the ACP Fish II programme.

trade would contribute to controlling the illegal fishing, and thus protect the stocks from over-fishing and from landing under-sized fish.

Informal trade can provide important income and employment sources for many families and in particular women who play an important role and benefit greatly in this economic activity. Thus, measures to formalise such trade would need to ensure that the associated livelihoods are not undermined, but rather improved, for instance by speeding up transactions and reducing hassle at the borders.

A more meaningful assessment of the extent and role that informal trade plays in the IORA region could only be done through a dedicated approach involving a study with national collaborators in the different IORA countries.

6.3. COVID-19 and its impact on trade

6.3.1. General consequences

According to a recent FAO GLOBEFISH report on *COVID-19: Impact on global fish trade*¹⁰, the outlook for the global fisheries and aquaculture sectors continues to be dominated by the wide-ranging implications of the COVID-19 pandemic and the new market landscape. Fish supply, consumption and trade revenues are all expected to decline due to the impact of containment restrictions on demand, logistics, prices, labour and business planning. The report went on to assert that the market effects of the pandemic have brought about several far-reaching changes, many of which are likely to persist in the long term.

A key observation on the market scene has been the importance of retail sales which have significantly increased at the expense of food services, as the hospitality sector remains largely subdued. Consumers, who are trying to limit frequent visits to grocery stores and concerned about future lockdowns, have shifted their seafood preferences towards preserved and prepared products, while demand for fresh fish has waned. The necessity of home cooking is a new focus for marketing campaigns and online distributors, while product innovations centred on convenience are proliferating. The economic downturn and rising unemployment are affecting household incomes, with demand for luxury or high value products generally weakening.

According to the GLOBEFISH report, the outlook continues to be uncertain and there is a strong tendency towards risk aversion on the part of businesses and consumers alike. On the positive side, product innovations, new distribution channels and the shortening of value chains are likely to benefit the seafood industry for many years to come.

6.3.2. Specific consequences for the region

With over 60 percent of the African continent's population in rural areas and dependent on smallholder or family farming, the risk from the COVID-19 pandemic to food supply chains, market access and nutrition is high. The Food and Agriculture Organization of the United Nations (FAO) and Alliance for a Green Revolution in Africa (AGRA)/ African Green Revolution Forum (AGRF) brought together private sector partners, economists and business leaders to identify these risks and gaps in response efforts while proposing solutions. The following includes some of their observations.

The concerns that COVID-19 poses to public health cannot be separated from the food security concerns. Hence, it is important to prioritize protection of the food supply chain and livelihoods as an integral component of the response to the crisis.

¹⁰ <http://www.fao.org/in-action/globefish/covid-19/en/>

There is not a shortage of agricultural commodities across the world but rather a bottleneck of access and logistics to reach consumers. Countries should focus on ensuring global and particularly that intra-regional trade remain vibrant while ensuring all health and safety protocols to prevent the further spread of the virus.

This is an opportunity to remove non-tariff barriers. We need to eliminate non-tariff barriers to promote the movement of essential items within the entire IORA region. This can be taken as an opportunity to put the tenets of the African Continental Free Trade Area (AfCFTA) into effect.

The world has food stocks available to feed communities through this crisis, but it is now incumbent on governments, business leaders and partners to work together to keep the food supply chain alive to prevent worsening food insecurity and undernourishment. FAO is providing governments with assessment tools, policy advice and real-time data on food prices, import and export volumes, food stocks and other information for them to make the most informed decisions in their COVID-19 responses.

Although there is no IORA study of COVID-19 effects on fishery value chains (including fish trade) within the region, several countries have in the past year done their own assessments, in some cases with assistance from the FAO or other organizations, such as various NGOs. They continue to monitor and report on the situation as the pandemic evolves. Below are some few case reports from a selection of IORA countries on how COVID has disrupted or impacted trade flows and markets for seafood products.

In Australia, a recent report by Fisheries Research and Development Corporation states that the overall impacts of the pandemic on the seafood industry have been asymmetric, with sectors supplying domestic markets mostly able to prosper, while exporters were negatively affected to a larger extent. Businesses that have been both willing and able to be innovative have fared better. The many forms of government assistance, including the designation of the seafood industry as essential, were critical to economic survival during the pandemic period¹¹.

In Indonesia, there was a specific case of China temporarily suspending imports from Indonesia after the novel coronavirus was detected in a sample of frozen fish products from one exporter¹². And in Cambodia, the government at some point temporarily suspended fish exports in an effort to stabilise domestic supply in the face of the spreading coronavirus.

In Bangladesh, impacts from the lockdown were felt across the sector with restrictions on movement rendering fishers and fish farmers unable to move their produce to markets. Customers reportedly deserted retail markets due to fear of infection and lockdown measures, causing the price of fish to fall sharply. Farms also reported having difficulties finding workers for harvesting due to their fear of the virus. Bangladesh sells 70% of its black tiger shrimp to the restaurant sector in north-western Europe, leading analysts to predict major difficulties for the country's shrimp sector if the European hospitality sector does not rebound quickly¹³.

In the UAE, one assessment study has reported that the global COVID-19 pandemic had a minor impact on UAE fisheries and aquaculture market. The country has faced temporary export and import challenges, due to lockdown restrictions. In order to overcome this, the government has dedicated specific trips through national carriers to fish producing nations such as Turkey, Greece to import seafood. It has also taken an initiative to develop internet sales of fish and home delivery to consumers¹⁴.

¹¹ <https://www.frdc.com.au/Archived-Reports/FRDC%20Projects/2016-128-Product-Impacts-COVID19-Report-01Mar2021.pdf>

¹² <https://www.reuters.com/article/us-health-coronavirus-china-seafood-idUSKBN27Q020>

¹³ <http://blog.worldfishcenter.org/2020/05/covid-19-updates-bangladesh/>

¹⁴ <https://www.mordorintelligence.com/industry-reports/aquaculture-in-the-united-arab-emirates-industry>

In the Seychelles, the increase in freight rates and fewer available international flights have been cited as two of the factors negatively affecting fish exports from Seychelles as a result of the COVID-19 pandemic. The closure of restaurants and hotels in foreign markets has negatively impacted exporters, some of whom have now switched to focusing on the local markets to earn some bridging revenue¹⁵.

In South Africa, the export price of rock lobster significantly declined with the closure of the Chinese fish market which impacted small-scale as well as large-scale fisheries. Abalone exporters were similarly affected.

In Kenya, it was reported that sales of locally produced fish temporarily boomed for fear of contracting the virus through fish imported from China.

In Madagascar, some transport disruptions were reported for aquafeed, and the early closure of markets to reduce disease spreading required some adjustments to the fishers and fish farmers' habits¹⁶.

6.3.3. Recommendation

As mentioned above, no comprehensive study of the effects of the COVID-19 pandemic has been done for the IORA region or parts of the region. However, based on these few cases cited, it would seem that such an overview would be useful.

The authors therefore recommend that IORA conducts a deeper COVID-19 impact analysis study specifically for fish trade, as an information tool for the region also good for improved capacities on early warning systems and adaptive capacity should future shocks or disruptions occur.

7. Legal situation and trade agreements

On a global level, the WTO and organizations of the United Nations (UN) system, in particular the FAO, are the main actors shaping the global trade regime for fishery products. Article 6.14 in the General Principles section of the *FAO Code of Conduct for Responsible Fisheries* in particular recognizes that: *International trade in fish and fishery products should be conducted in accordance with the principles, rights and obligations established in the World Trade Organization (WTO) Agreement and other relevant international agreements*. States should ensure that their policies, programmes and practices related to trade in fish and fishery products do not result in obstacles to this trade, environmental degradation or negative social, including nutritional, impacts (FAO)¹⁷.

7.1. Membership to WTO

Out of the 23 IORA member states, only Comoros, Iran and Somalia are not yet members of the WTO, but are working to accede or are still on “observer” status.

The following WTO agreements are of particular relevance to fish and fish products: General Agreement on Tariffs and Trade 1994; Agreement on the Application of Sanitary and Phytosanitary Measures; Agreement on Technical Barriers to Trade; Agreement on Trade-Related Investment Measures; Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994; Agreement on Rules of Origin; Agreement on Subsidies and Countervailing Measures; Agreement on Safeguards; Agreement on Trade Related Aspects of Intellectual Property Rights; and Understanding on Rules and Procedures Governing the Settlement of Disputes.

¹⁵<http://www.seychellesnewsagency.com/articles/14293/Fish+export+business+in+Seychelles+being+squeezed+by+pandemic%27s+effects>

¹⁶<http://www.fao.org/3/cb2537en/CB2537EN.pdf>

¹⁷<http://www.fao.org/3/i0590e/i0590e.pdf>

7.2. FAO Committee on Fisheries (COFI) : Sub-Committee on Fish Trade

All 23 IORA member states are members of the FAO hence they benefit from the FAO Sub-Committee on Fish Trade, which provides a forum for states to consult on technical, economic and environmental aspects of international trade in fish and fishery products, including production and consumption aspects. This platform also deals with issues related to technical cooperation - where states can share their views, consider new developments, and recommend areas for further work to address trade challenges¹⁸.

7.3. National organizations for facilitating fish trade

The authors had hoped the structured questionnaire would provide more first-hand insight/information on capacities of national organisations responsible for facilitating fish trade but the poor response to the questionnaire did not give us this information. Instead, we had to rely on the information we could find through a literature review.

From the literature review exercise, it appears almost all IORA member states have a designated competent authority (CA), in most cases stationed within the ministry responsible for fisheries and aquaculture - which is responsible for monitoring safety and quality of imported/exported and locally consumed seafood. The effective functionality and capacitation of these CAs varies by country, for instance most LDCs in Africa have lamented the lack of desirable infrastructure and capacities for most of the key CA functions including SPS processes. There are also in-country organisations and institutions that promote trade in general, however their role, effectiveness and capacitation with regard to fish trade specifically, would need to be analysed and gaps addressed. The table below, although not exhaustive, attempts to provide an outline of some of the CAs as well as other in-country trade facilitation bodies for future consultative purposes.

Table 17: National organizations for facilitating trade

Country	Competent Authority	Other trade facilitation organisations/bodies
Australia	Department of Agriculture, Water and Environment https://www.agriculture.gov.au/import	The Export Council of Australia
Bangladesh	Department of Fisheries http://fisheries.gov.bd/site/page/43ce3767-3981-4248-99bd-d321b6e3a7e5/-	Bangladesh Fisheries Development Corporation
Comoros	Ministry for Agriculture, Fisheries and Environment: file:///C:/Users/pc/AppData/Local/Temp/SWIOFC-IOTC-2014-WoE01-13 - Comoros.pdf	
India	Ministry of Commerce and Industry (Export Inspection Council): http://115.112.238.112/eic/inspection/marine.pdf	Marine Products Export Development Authority (MPEDA)
Indonesia	Ministry of Marine Affairs and Fisheries http://extwprlegs1.fao.org/docs/pdf/ins139988.pdf	Directorate General for National Export Development (DGNED)
Iran	Iran Fisheries Organisation: http://fisheries.ir/	Export Promotion Centre of Iran

¹⁸ <http://www.fao.org/fishery/about/cofi/trade/en>

Country	Competent Authority	Other trade facilitation organisations/bodies
Kenya	Ministry of Agriculture, Livestock, and Fisheries https://kilimo.go.ke/import-export/	Association of Fish Processors and Exporters of Kenya (AFIPEK)
Madagascar	Ministere de L’agriculture, de L’elevage et de La Peche https://assets.ippc.int/static/media/files/reportingobligation/2019/04/28/DECRET_ORGANIGRAMME_MAEP_20191.pdf	Madagascar Shrimp Farming and Fishing Industry Association (GAPCM)
Malaysia	Fisheries Development Authority of Malaysia https://www.lkim.gov.my/en/	Malaysia External Trade Development Corporation
Maldives	Ministry of Fisheries, Marine Resources and Agriculture: https://www.gov.mv/en/organisations/ministry-of-fisheries-marine-resources-and-agriculture	Maldives Seafood Processors and Exporters Association (MSPEA)
Mauritius	Ministry of Blue Economy, Marine Resources, Fisheries and Shipping https://blueconomy.govmu.org/Pages/Departments/Competent%20Authority%20Seafood/Competent-Authority-Seafood.aspx	Mauritius Chamber of Commerce and Industry; Mauritius Seafood Hub
Mozambique	Ministry of the Sea, Inland Waters and Fisheries (National Fish Inspection Institute (INIP)). http://www.mimaip.gov.mz/o-ministerio/sistema-organico/	The Agency for Promotion of Investment and Exports (APIEX) of Mozambique
Oman	Ministry of Agriculture, Fisheries and Water Resources: https://www.maf.gov.om/	Ithraa - The Public Authority for Investment Promotion and Export
France (Réunion)	EU (France) https://ec.europa.eu/food/sites/food/files/safety/docs/ia_trade_import-cond-fish_en.pdf	Interprofessional Association of Reunion Fisheries and Aquaculture (ARIPA)
Seychelles	Seychelles Fishing Authority http://www.sfa.sc/index.php/division/post-harvest-value-addition	Seychelles Trade Portal
Singapore	Singapore Food Agency (Seafood): https://www.sfa.gov.sg/food-import-export	Enterprise Singapore
Somalia	Ministry of Fisheries and Marine Resources http://extwprlegs1.fao.org/docs/pdf/som171668.pdf	Somalia Seafood Exporters Association
South Africa	Department of Environment, Forestry and Fisheries (DEFF) https://www.environment.gov.za/fisheries_formsanddocuments	National Regulator for Compulsory Specifications (NRCS), Department of Trade & Industry
Sri Lanka	Department of Fisheries & Aquatic Resources https://www.fisheriesdept.gov.lk	Sri Lanka Export Development Board
Tanzania	Ministry of Livestock and Fisheries https://www.mifugouvuvu.go.tz/	Tanzania Industrial Fishing and Processors Association (TIFPA)
Thailand	Department of Fisheries https://www4.fisheries.go.th/dof_en	Thaitrade
UAE	Sea-Fisheries Protection Authority	Export.gov

Country	Competent Authority	Other trade facilitation organisations/bodies
	https://www.sfpa.ie/	
Yemen	Ministry of Fish Wealth	

7.4. Regional trade blocs and organisations

There are several regional trading blocs within IORA that have become important in the political and economic integration of the countries. Such trading blocs have brought forth some benefits such as increased intra-regional trade through free trade regimes, increased trade promotion and global recognition. Some of these are listed below.

7.4.1. African based (West Indian Ocean Region)

- The Common Market for Eastern and Southern Africa (COMESA) ¹⁹ is the largest regional economic organization in Africa (covering almost two thirds of the African Continent) with 21 member states and a population of over 583 million, a GDP of US\$805 billion, a global export and import trade in goods worth US\$324 billion. Six IORA MS are members of the COMESA regional trade bloc. These are Comoros, Somalia, Mauritius, Seychelles, Madagascar and Kenya.
- The Southern African Development Community (SADC) is an inter-governmental organization with its goal to further regional socio-economic cooperation and integration as well as political and security cooperation among its 16 member countries. The SADC Protocol on Trade is one of the most important legal instruments guiding SADC's work on Trade. Seven IORA MS from the WIO region are members of the SADC regional trade block. These are Comoros, Mauritius, Seychelles, Madagascar, Mozambique, South Africa and Tanzania.
- Other Africa-based regional blocs or inter-governmental organisations which have also been key in building capacity for facilitating and harmonisation of trade including of fish and fishery products include the East African Community (EAC), Southern Africa Customs Union (SACU+M) which includes South Africa and Mozambique, Intergovernmental Authority on Development (IGAD) region based in the Horn of Africa includes Kenya and Somalia, Indian Ocean Commission (an intergovernmental organisation that links African Indian Ocean nations: Comoros, France (Réunion), Madagascar, Mauritius and Seychelles)
- Africa Continental Free Trade Area (AfCFTA). Much focus is now on the implementation of the recently launched AfCFTA (which came into force in 2019). AfCFTA will create the largest free trade area in the world measured by the number of countries participating. The pact connects 1.3 billion people across 55 African countries with a combined GDP valued at USD 3.4 trillion (World Bank)²⁰. Several signatory countries have begun to put the domestic administrative arrangements in place to enable trading under the Agreement's new terms. It is expected that countries in the region will benefit from free trade in seafood and fishery products through the elimination of barriers and distortions to trade such as duties, quotas, and non-tariff barriers. All nine Africa-based IORA member states have signed up to the AfCFTA.

7.4.2. Middle East

The Cooperation Council for the Arab States of the Persian Gulf (GCC) is probably one of the most important trade blocs facilitating the trade of good and services within the Gulf region. Countries affiliated with the GCC impose very low import tariffs on seafood (i.e. 0–5 percent), and as a result,

¹⁹ <https://www.comesa.int/>

²⁰ <https://www.worldbank.org/en/topic/trade/publication/the-african-continental-free-trade-area>

inter-regional trade is strong there (FAO)²¹. Within this region UAE and Oman seafood consumption is one of the highest worldwide. Yemen and Oman also produce significant volumes of fish and are the leading exporting nations in the Middle East by volume. Both countries have long coastlines, a very active fishing sector and small populations, resulting in a high excess of production that is then exported.

7.4.3. Southeast Asia

The Association of Southeast Asian Nations (ASEAN) is an important economic union comprising 10 member states in Southeast Asia (this includes IORA member states Indonesia, Malaysia, Singapore and Thailand), which are also key seafood producers and markets. It is a dynamic market with some 640 million consumers and ranks as the eighth economy in the world. ASEAN has become the EU's third largest trading partner after the US and China, with more than EUR 237.3 billion of trade in goods in 2018²².

The South Asian Association for Regional Cooperation (SAARC) is the regional intergovernmental organization and geopolitical union of states in South Asia. Its member states are Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan and Sri Lanka. The SAARC comprises 3% of the world's area, 21% of the world's population and 4.21% (US\$3.67 trillion) of the global economy, as of 2019. The SAARC aims to promote development of economic and regional integration for its members. It launched the South Asian Free Trade Area in 2006.

7.5. Trade agreements

Countries of the above regional trade blocs and organisations have come up with strategic trade agreement or trade pacts, which now exist between two or more countries or regions, mostly for the purpose of reducing (or eliminating) tariffs, quotas and other trade restrictions on items traded between the signatory countries or parties. This enhances international trade including that of seafood products. Examples of these in IORA region are presented in the following sections.

7.5.1. EU Economic Partnership Agreement (EPA)

Several countries in Eastern and Southern Africa and their regional trade blocs (SADC, EAC, etc.) have since 2008 been negotiating with the EU on the Agreement, its implications and impacts. So far several IORA member states have acceded to the Agreement (including Comoros, Kenya, Mauritius, Seychelles and Madagascar). Other countries such as Mozambique are still under negotiation. For these IORA countries, the EU is their major export market for fish. Issues of market access commitments to EU, tariff regimes and reductions, Rules of Origin, trade barriers to trade (TBT), customs and trade facilitation, Sanitary and Phytosanitary Standards (SPS) trade and sustainable development are contained in the Agreement.

7.5.2. Asia-Pacific Trade Agreement (APTA)

The Asia-Pacific Trade Agreement (APTA) is probably the oldest preferential trade agreement between countries in the Asia-Pacific region. Seven Participating States (Bangladesh, China, India, Lao PDR, Mongolia, Republic of Korea, and Sri Lanka) are the parties to the APTA. The Trade Agreement aims at promoting intra-regional trade through the exchange of mutually agreed concessions by member countries. APTA aims to promote economic development of its members through the adoption of mutually beneficial trade liberalization measures that contribute to regional trade expansion and

²¹ <http://www.fao.org/in-action/globefish/fishery-information/resource-detail/en/c/338542/>

²² <https://ec.europa.eu/trade/policy/countries-and-regions/regions/asean/>

economic cooperation. APTA also is continuously working on improving and modernizing its Rules of origin for trade in goods (UN ESCAP)²³.

7.5.3. Regional Comprehensive Economic Partnership (RCEP)

The Regional Comprehensive Economic Partnership (RCEP) is among the largest trade pact in the world, which exist between the member states of the ASEAN and its free trade agreement (FTA) partners. The pact covers the trade in goods and services, intellectual property, etc. Current member states include Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Vietnam, China, Japan, India, South Korea, Australia and New Zealand.

7.5.4. Preferential Trade Agreements (PTAs)

Preferential Trade Agreements within some trading blocs that gives preferential access to certain products from the participating countries are increasingly common between countries.

For instance, two IORA member states, India and Mauritius which both enjoy strong cultural and economic ties, have signed a free trade agreement (the India-Mauritius Comprehensive Economic Cooperation and Partnership Agreement (CECPA)), where Mauritius will benefit from preferential market access into India for its 615 products, including frozen fish.

Similarly, France has become a major economic and trade actor in Seychelles through bilateral arrangements that exist between the two countries, which are strengthened by France's Reunion Island being a neighbour to Seychelles. Significant volumes of fishery products are exported to France (from Seychelles) under such bilateral arrangements.

7.5.5. Other Free Trade Agreements (FTAs)

International trade including of fish and fishery products is also enhanced by other free trade agreements that links key producer nations to key markets in large consuming nations such as the ASEAN-Korean FTA, ASEAN-China FTA, Indonesia-Japan PTA etc. For instance, the ASEAN-Korea FTA has vitalized trade and multiple exchanges of goods, services and investments by significantly cutting tariff barriers among the Parties. Common standards for production technology, product regulations, distribution, and after-sales service have also spread across the partner countries.

7.6. Trade barriers

Trade barriers are government-induced restrictions on international trade. Economists generally agree that trade barriers are detrimental to trade and decrease overall economic efficiency; this can be explained by the theory of comparative advantage²⁴.

Most trade barriers work on the same principle: the imposition of some sort of cost (money, time, bureaucracy, quotas) on trade that affects the price or availability of the traded products. If two or more nations repeatedly use trade barriers against each other, then a trade war results. Barriers take the form of tariffs (which impose a financial burden on imports) and non-tariff barriers to trade (which use other overt and covert means to restrict imports and occasionally exports).

In theory, free trade involves the removal of all such barriers, except perhaps those considered necessary for health or national security. In practice, however, even those countries promoting free

²³ <https://www.unescap.org/apta>

²⁴ Dixit, Avinash; Norman, Victor (1980). *Theory of International Trade: A Dual, General Equilibrium Approach*. Cambridge: Cambridge University Press. p. 2.

trade heavily subsidize certain industries. These trade barriers can have an impact on the information available but importantly can significantly affect trade.

7.7. Lack of market intelligence

In order for the private sector operators (exporters and importers) to benefit from the regional resources through expanded regional trade, they need information about where to obtain supplies or where there may be a market for their produce.

One of the major requirements to achieve this is adequate market information, or rather reliable information about supplies, demand and prices in the region. This is only partly available today, and this shortcoming should be addressed. But even when such information exists and is freely available, many operators may not know of its existence, or where to obtain this information. Hence awareness is crucial.

The lack of market information puts the countries of the region at a disadvantage vis-à-vis competitors from other parts of the world, particularly competitors in the developed world.

In countries where large-scale foreign-owned producers dominate, professional associations are often established. They participate in policy debate and exercise lobbyist activities. Existing professional associations focus on market intelligence gathering efforts on the extra-regional export markets, but only collect sporadic market intelligence on regional markets. The associations more or less assume that the latter kind of business services is part of the mandate of public export promotion agencies. Often these do not offer such services on a regular or structured basis, and have no clear lines of command collecting and collating relevant material, whereas dissemination of the findings would be easy.

It can be costly to obtain market information, and it would therefore be beneficial if the countries of the region cooperated on this by having one regional organization that specialized in obtaining and distributing market information to the industry and to traders. Previous attempts at establishing such services have been made, for example by establishing INFOSA, the market information and advisory service for the fisheries industry in Southern Africa. But INFOSA had to close down its services because of lack of permanent funding for its Secretariat. Therefore, if such a service is established, it will be crucial to find a solution to the permanent financing of this service.

INFOFISH, which serves the Asia/Pacific region, and to which several of the IORA member states in Asia are already members, provides many of the services needed. A close cooperation with INFOFISH should therefore be sought (see Appendix A).

As regards the challenges identified, these are to a large extent the same for large and SME players:

- For large players the limited intra-regional trade is caused by lack of raw material as a large part of production is exported. This problem is exacerbated by insufficient knowledge of what the local/regional markets demand;
- There is no centralised service publicly or privately owned that systematically collects and collates information on intra-regional market trends by product type, volume or price;
- There is limited knowledge of how to get the product to the consumer in regional markets in good time and at reasonable cost. Trade facilitation is poor and causes delays at borders;
- The SME segment is fairly new and inefficient. It lacks even the most basic knowledge about the industry. A prudent issue is the lack of association building and access to systematic knowledge about markets and trade rules;
- For all segments there is limited knowledge regarding the potential consumers' willingness to pay for quality. i.e. food safety compliant products.

7.8. Infrastructure deficiencies

Basic infrastructure, such as roads, railways, ports, communications, water and electricity supply etc., are important prerequisites for trade. Unfortunately, many of the member states in LDC and developing countries are lacking in these or they are not in good repair or functioning well. Again, there are great differences from country to country.

Road infrastructure varies a lot between the countries. As a general rule, the quality of the roads degenerates with distance from the capital areas. Poor road conditions delay delivery of traded goods, which for perishable products like fish is detrimental to the quality of what is delivered. In some countries' geography, such as mountain ranges, arid areas or severe rain, cause trouble for road infrastructure. The net result is slower delivery and higher transport costs for the trade in fish products.

Maritime transport is the main mode for moving goods between the island nations and continental Africa and the rest of the world. In general, the port infrastructure on the islands and on the continental coast is operable, but improvements can be made regarding handling and storage capacity. Especially cold storage capacity is limited; this reduces the option of completing cold chains and the marketing of frozen fish products. To some extent, this is also true for some of the South East Asian countries like Indonesia.

Infrastructure for civil aviation is currently undergoing rapid change in many countries, often driven by the tourism sector. However, only a few airports can accommodate the larger carriers that allow tourists and goods to flow easily. There is often a lack of cold storage capacity at the airports.

In some countries, there are problems with adequate infrastructure, for example in Indonesia, where transport is a problem. But in general, infrastructure in EIO IORA countries is much better than in WIO IORA countries. Communications are well built-out, and air transport is also much better.

In terms of telecommunications, the countries internally have established infrastructure based on cellular telephony and satellite technology. Though such systems in general are efficient, connectivity to the Internet and mobile telephony is often not available full time. Rates can be high compared to more developed countries, but rates may drop over the coming years due to technological improvements. In some countries' government regulations and control limit access to Internet and telephony, which excludes enterprises from being competitive and even from participating in international and intra-regional trade.

The relatively low speed of moving goods is a challenge, as it increases the cost of trade. There are projects with development partners under implementation to improve road and other physical infrastructure in some of the countries.

It should also be pointed out that the COVID-19 pandemic has influenced transport availability greatly. Air transport, in particular, has been dramatically reduced, and it will take some time (years) before this is brought back to pre-COVID levels.

8. SWOT analysis

As the member states of IORA are so different in a number of aspects, undertaking a regional SWOT analysis becomes a difficult task. In one aspect, one country may be very strong, while another may be very weak, and therefore, it would be difficult to draw a conclusion about the state of the region as a whole.

However, the authors have tried to identify some of the features that can describe the region in general. It should be noted, however, that individual countries may not in all cases fit completely with the descriptions given.

8.1. Strengths

- General political stability in the larger part of the IORA region (except a few pockets of instability in some member states). Political stability is an important ingredient for trade and economic development.
- Strategic location of the world trade route. About 80% of global sea freight passes through the Indian Ocean.
- IORA region has a very large, expansive combined Exclusive Economic Zone, which amounts to over 28 million km².
- Abundant marine resources (including fisheries), hence the region is a net exporter of fish. The region also contains some of the world's major fishery producing nations such as India, Indonesia, Thailand and others.
- A third of the world's tuna production comes from the Indian Ocean region. Tuna has become one of the main seafood commodities for export from the region (mainly exported to Europe and Japan).

8.2. Weaknesses

- The expansiveness and geographical distance of the IORA member states means low connectivity of the people or generally limited mobility of people within its space.
- General economic disparities of the 23 IORA member states, for instance about 35% of the member states are regarded as LDCs, yet only two countries are regarded as developed (9%), the rest being developing (56%) .
- Poverty is still prevalent in several LDCs.
- Lack of capacities and infrastructures in several countries to manage their fisheries resources and for improved trade.
- Low intra-regional trade and trade facilitation deficiencies. There is presently no special intra-regional trade arrangements governed by IORA.
- Except in a few countries, there are no easy channels and systems for collecting up to date fish marketing information.
- In general, access to finance for development or improvements within the fisheries and aquaculture sector may be difficult to obtain.

8.3. Opportunities

- Common interest by IORA member states to strengthen economic co-operation in the region and the development of trade mechanisms for its resources.
- A huge market of nearly 2.3 billion people, connected within three continents (Africa, Asia and Oceania).
- INFOFISH has flourished in parts of the Southeast Asian side of IORA region. IORA member states have the opportunity to decide to expand the INFOFISH network throughout the whole IORA region.
- The Blue Economy strategies embraced by IORA member states will bring forth sustainable development options, particularly for Small Island Developing States (SIDS) and coastal LDCs within IORA.
- Improved aquaculture development for increased fish supplies in the region²⁵, also within the framework of the Blue Economy.

²⁵ Blanc,P. 2021 Review of aquaculture, governance and development of small-scale aquaculture in the IORA region. COFREPECHE Technical Report 3, 90pp.

8.4. Threats

- Political instability in some parts can hamper trade e.g. northern Mozambique, Somalia, Yemen, Iran etc.
- Overfishing of most commercially important species, especially tuna resources in some parts of IORA region.
- IUU fishing in general is threatening the sustainability of fisheries resources in the region. Measures to combat IUU fishing and level of implementation of Port State Measures in the IORA region are covered by other separate technical reports²⁶.
- Global uncertainties e.g. COVID-19 pandemic has taken a toll on fish trade.
- Climate change impacts and its direct/indirect impacts on fish trade²⁷.

9. Trade strategy options

9.1. Objectives

Before one can describe possible strategies, one has to establish concrete objectives to be sought. Based on the IORA/AFD technical assistance Project's requirement as well as previous work with trade strategies, the following objectives can be identified:

- Food security
- Food safety
- Income generation
- Foreign exchange earnings
- Employment creation
- Poverty reduction
- Regional integration and developing regional markets

It should be pointed out that in this particular context, we are focusing on how we can develop **trade strategies** that contribute to reaching these objectives. Other aspects of fisheries and aquaculture, such as production enhancement etc., will not be considered.

9.1.1. Food security

Food security, as defined by the United Nations' Committee on World Food Security, means that all people, at all times, have physical, social, and economic access to sufficient, safe and nutritious food that meets their food preferences and dietary needs for an active and healthy life.

In terms of seafood, this means that there should be enough seafood (animal protein) available to the population of a country at a reasonable price.

If domestic production of seafood is insufficient to satisfy domestic demand, the country must turn to imports. This will, however, require funds to pay for the imports, and these funds may come from exports of products that are attractive on foreign markets and that may bring in enough funds to import sufficient quantities of cheaper products to feed the nation.

²⁶ Hosch, G. 2021 Analysis of measures to combat IUU fishing in the IORA region. COFREPECHE Technical Report No 4, 42pp.; Gaudin-Goeser. 2021 Assessment of the capacity needs required (Human and Institutional) and the current level of implementation of Port State Measures (PSM) in the IORA region. COFREPECHE Technical Report No 5, 120 pp.

²⁷ <http://www.fao.org/in-action/globefish/fishery-information/resource-detail/en/c/338390/>

In order to establish and maintain a trading activity that secures such acquisitions, information is needed. One needs to know where commodities can be found, what price they are sold for, and how they can be transported to the country. One also needs information about markets for any export products the country may have to offer.

9.1.2. Food safety

To lower the burden of foodborne disease, thereby strengthening the health security and ensuring sustainable development of member states income generation.

9.1.3. Income generation

Growth in trade will create income for the private sector, for individuals, as well as for the public sector (through taxes etc.).

9.1.4. Foreign exchange earnings

A major objective of a country's foreign trade activities will often focus on foreign exchange earnings to enable the country to buy necessary products and commodities on the world markets. Seafood trade often plays an important role in such income generation.

9.1.5. Employment creation

While employment generation is mostly to be found in the production phases of the seafood value chain, trade activities also contribute to this.

9.1.6. Poverty reduction

In addition to providing employment and income, fisheries plays an important role in local and national economies, thus to poverty alleviation – particularly within the small scale fisheries sector.

9.1.7. Developing regional markets

From an environmental point of view, and this is becoming increasingly important with time, transporting goods over as short a distance as possible, thereby creating a small carbon footprint, is considered a goal in itself. Therefore, countries should search for supplies of commodities in their neighbouring countries in the region.

9.1.8. Regional integration

Where two or more nation-states agree to co-operate and work closely together to achieve peace, stability and wealth, this also enables the organised countries to overcome these costly divisions integrating goods, services and markets, thus facilitating the flow of trade, capital, energy, people and ideas.

10. Concluding observations and recommendations

10.1. Establishment of a trade information service - FISHTRADE

Increased liberalisation and globalisation of trade requires importers, exporters and even those enterprises producing and trading exclusively within their national markets, to be informed and advised upon prices, trends and the evolution of world fish production, processing and trade.

Ever more rigorous quality requirements, labelling regulations and consumer safeguards oblige the industry to be regularly informed and updated on the new requirements to ensure their access to global and regional markets.

FISHTRADE aims to provide much needed information to authorities and industry in the region to ensure that fisheries and aquaculture development will indeed be sustainable and environment friendly.

FISHTRADE would cover the Indian Ocean rim states region, where the need for fish trade information access and guidance on sustainable practices are real. In several study programmes over the past decade, the need for a trade information network has been pointed out. In the ACP Fish 2 programme, such a system was suggested, as it was in some of the reports coming out of the SmartFish Programme. However, both these programmes were focusing on Africa, and the Asian member states of IORA must also be included in a possible proposed structure.

Trade information systems for the region have actually existed for many years. For Asia and the Pacific, the FAO-initiated INFOFISH was established as early as 1981, while sister projects INFOPECHE, INFOSAMAK and INFOSA were established in 1985, 1986 and 2004, respectively. All these organizations, except INFOSA, are still in operation. Some of the IORA member states in Asia are already members of INFOFISH, which offers such services²⁸.

For the Asia and Pacific region, i.e. including Asian member states of IORA, INFOFISH is a strong organization with a wide range of services. For the African member states of IORA, INFOSA served the same purposes, but unfortunately it was closed down due to lack of funding.

It is recommended that a service covering the entire IORA region be established, perhaps as an extension of the present INFOFISH, which is already providing many of the needed services needed.

All the Fish Info organizations (e.g. INFOFISH etc.) have cooperation agreements with FAO's GLOBEFISH service, and it is recommended that a potential new IORA trade service also be linked to FAO GLOBEFISH.

It is therefore recommended that steps be taken to establish such a trade information service. It is further recommended that IORA contacts INFOFISH and FAO/GLOBEFISH with a view to establishing a practical cooperation with these organizations.

The authors (based on their experience and linkages with INFOFISH etc.) are available to assist the IORA/AFD project in whichever route the project agrees to pursue.

FISHTRADE would operate mainly within the post-harvest sector of fisheries and aquaculture, i.e. in fish handling, processing and marketing. The rationale for this limitation is that practices within this sector may often lead to unsustainable utilization of resources, or pose a danger to the environment just as much as the fishing or aquaculture practices. Improved, responsible practices and valuable market information may thus affect practices in the fishing and aquaculture production. As an example, by pointing out opportunities in providing higher quality fish products, one may influence the choice of fishing gear by fishers. Line-caught fish is landed with a much better quality than trawl-caught fish, thus it commands a higher price. Line fishing is also much less damaging to the marine environment than trawling.

10.2. Use of existing networks

Today, it is often proposed to establish web-based systems that can be accessed by users directly, in a semi-automatic way. In the experience of the authors, this is an inadequate solution, as many users do not know how to use the various systems, and most systems vary in the way they are operated and

²⁸ At the time of writing, the following countries are members of INFOFISH: Bangladesh, Cambodia, Fiji, Iran, Malaysia, Maldives, Pakistan, Papua New Guinea, Philippines, Solomon Islands, Sri Lanka, Thailand.

the type of information the offer. A relatively deep knowledge of such systems is needed in order to benefit from what they offer.

For example, FAO's fisheries statistics, FishStatJ, offers excellent statistical information of capture production, aquaculture production, processing production and international trade. Yet, very few either know about its existence, how to access it, or how effectively to use it.

The International Trade Centre (ITC) operates a similar statistical system which also offers information on direction of trade, which is very important when analysing trade patterns. However, the ITC TradeMap system has different software than the FAO FishStatJ system, as is a little more cumbersome to use.

National statistical databases, such as the US NMFS database, also require familiarization and experience to use.

In order to solve the difficulties in using the various systems, it is suggested that the trade information organization include experts who are familiar with the use of all these systems, and who can assist users in finding the needed information. In other words, we suggest including the *people component* in such an information system.

10.3. Capacity building of national and regional fish trade actors

Capacity building, especially through training, is essential for fish trade actors (policymakers, fish trade business associations, civil society, etc.) in order to enhance their ability to understand and negotiate (in general trade related debates and agreements) and to improve their capacities to implement trade reforms specifically for improved fish trade. Other support training activities such as the IORA Fisheries Support Unit organised *Workshop on Seafood Products Safety and Quality*²⁹ are also critical for trade enhancement. Such workshops need to continue, perhaps bridged in the short-term by webinars until the regional travel situation improves.

10.4. COVID-19 and its impacts on fish trade

Through impact assessment studies, there is need to continue monitoring and communicating the impact of COVID-19 pandemic to the fish supply chain, and especially fish trade within the IORA region. Such impact assessment and also international best practices to manage the situation, need to be communicated widely to state and non-state actors, to ensure government is adequately capacitated to make policy decisions, and to design and implement support measures that alleviate hardships to industry players, especially the small scale (including informal traders).

10.5. Assessing and addressing informal fish trade

Informal fish trade, which is prevalent in some low-income IORA member states, has potential in addressing the countries' food and nutrition insecurity, as well as poverty reduction. However, informal fish trade, just like all informal economic activities, has been overlooked and neglected in many national and regional policies, leading to obscurity of such an important part of the fisheries sector in some countries. There is a need to establish informal fish trade monitoring systems to adequately quantify the volumes traded within the region. Situational and impact studies on informal trade firstly at a national level and subsequently, regionally, will enable a deeper understanding about the fish traders, the factors influencing the traders to use informal trade channels, the structure of the products traded and the challenges the traders face. It will also lead to the design and implementation

²⁹ <https://oceanconference.un.org/commitments/?id=21971>

of sound policies for formalisation of the informal traders within IORA, based on an exchange of lessons learnt between IORA members.

10.6. Develop a trade strategy for intra-IORA fish trade

Increased intra-IORA trade would enhance the supply situation for several of the member states. However, information about supplies and prices is needed on a regular basis in order to increase intra-regional trade.

It is proposed that such information be exchanged on a regular basis through the market information service proposed earlier. This can be done by publishing and distributing lists of demands and offers to national liaison officers, and/or directly to trade companies that register with this service.

Appendix A: References

- Ali, Laila: *UN Food Agencies in Somalia Promote Eating Fish to Fight Hunger*. World Food Programme, Somalia, 17 October 2013.
- Anthonsamy, Shirlene Maria: *Seafood retail sales in Malaysia – a supermarket case study*. In INFOFISH International no. 2/2017, Kuala Lumpur, 2017
- Anthonsamy, Shirlene Maria and Joelyn Sentina: *Singapore: A thriving high-end seafood market*. In INFOFISH International no. 4/2017. Kuala Lumpur 2017.
- Anthonsamy, Shirlene Maria and Joelyn Sentina: *Fish and seafood retailing in Thailand*. In INFOFISH International no. 5/2017. Kuala Lumpur, 2017.
- Anthonsamy, Shirlene Maria: *Consumption of dried fishery products in Malaysia*. In INFOFISH International no. 1/2018. Kuala Lumpur 2018.
- Anthonsamy, Shirlene Maria: *COVID-19: A game changer for seafood retailing in Asia*. In INFOFISH International no. 6/2020. Kuala Lumpur 2020.
- COMESA, 2021: The Common Market for Eastern and Southern Africa. <https://www.comesa.int/>
- Dey, V.K.: *The Indian seafood industry: A post COVID-19 impact analysis*. In INFOFISH International no. 5/2020. Kuala Lumpur, 2020.
- Dixit, Avinash and Norman, Victor (1980): *Theory of International Trade: A Dual, General Equilibrium Approach*. Cambridge: Cambridge University Press. p. 2.
- European Commission: *Countries and regions: Association of South East Asian Nations (ASEAN)*. <https://ec.europa.eu/trade/policy/countries-and-regions/regions/asean/>
- FAO: *COFI Sub-Committee on Fish Trade*. <http://www.fao.org/fishery/about/cofi/trade/en>
- FAO: *Food Outlook. Biannual report on global food markets*. FAO, Rome, November 2020.
- FAO, 2021: *The impact of COVID-19 on fisheries and aquaculture food systems, possible responses*. Information paper, November 2020. Rome. <https://doi.org/10.4060/cb2537en>
- FAO-GLOBEFISH: *GLOBEFISH - Information and Analysis on World Fish Trade*. Rome, December 2020. <http://www.fao.org/in-action/globefish/fishery-information/resource-detail/en/c/338542/>
- FAO-GLOBEFISH: *COVID-19 - Impact on global fish trade*. <http://www.fao.org/in-action/globefish/covid-19/en/>
- FAO: *Technical Guidelines for Responsible Fisheries: Responsible Fish Trade*. <http://www.fao.org/3/i0590e/i0590e.pdf>
- Ferdouse, Fatima: *Strong domestic market for giant freshwater prawn ('Galda') in Bangladesh*. In INFOFISH International no. 2/2017, Kuala Lumpur 2017.
- Ganapathiraju, Pramod: *Global evaluation of fisheries monitoring control and surveillance in 84 countries – Yemen Country Report*. IUU Risk Intelligence, Policy Report No. 1, Canada, April 2018.
- Gopal, Nikita, and Meryl J. Williams, Marilyn Porter and Kyoko Kusakabe: *Gender in Aquaculture and Fisheries: The Long Journey to Equality*. Published in *Asian Fisheries Science*, The Journal of Asian Fisheries Society, 2016.

- Hempel, Erik and Johnson Kariuki: *Interim Technical Report: Building capacity to reduce the illegal fish trade around Lake Victoria*. Project funded by the European Union and executed by Pescares Italia. 19 August 2013. Part of the ACP Fish II programme.
- Hishamunda, Nathanael, and Pedro B. Bueno, Neil Ridler and Wilfredo G. Yap: *Analysis of aquaculture development in Southeast Asia. A policy perspective*. FAO, Rome, 2009.
- Laurence, Daniel: *Fish export business in Seychelles being squeezed by pandemic's effects*. Seychelles News Agency, February 02, 2021.
- Lymer D. and Simon Funge-Smith: *Handbook on regional fisheries bodies and arrangements in Asia and the Pacific 2009*. FAO Regional Office for Asia and the Pacific, Bangkok, 2009.
- Mapfumo B., and Hempel E., 2021: *Literature review and gap analysis of information on international trade and markets for fisheries and aquaculture products*. IORA/AFD Technical Assistance Project – Technical Report No. 2, 22pp.
- Mobsby, David; Steven, Amara H; and Curtotti, Robert: *Australian fisheries and aquaculture outlook 2020*. Published by Australian Government, Department of Agriculture, Water and the Environment, March 2020.
- Mordor Intelligence: *United Arab Emirates Fisheries and Aquaculture Market - Growth, Trends, Covid-19 Impact, and Forecasts (2021 - 2026)*. <https://www.mordorintelligence.com/industry-reports/aquaculture-in-the-united-arab-emirates-industry>
- Ogier, E., Sen, S., Jennings, S., Magnusson, A., Smith, D. C., Colquhoun, E., Rust, S., Morison, J. (2021). *Impacts of COVID-19 on the Australian Seafood Industry: January-June 2020*. FRDC 2016-128. Canberra, Australia, Fisheries Research and Development Corporation (FRDC). Oirere, Shem: *Major constraints in the way of Comoros fishery development program*. Article in unidentified publications. January 20, 2020. <https://www.frdc.com.au/Archived-Reports/FRDC%20Projects/2016-128-Product-Impacts-COVID19-Report-01Mar2021.pdf>
- Ojamaa, Prit and Carmen-Paz Marti: *Fisheries in Réunion. In-depth analysis*. Directorate-General for Internal Policies, European Union, Brussels, 2015
- Rashid, Ahmed: *Maldives: Sustainable seafood boosts international exports*. In INFOFISH International no. 2/2017, Kuala Lumpur 2017.
- Rashid, Ahmed: *International marketing strategies for the Maldives*. In INFOFISH International no. 2/2018. Kuala Lumpur, 2018.
- Seychelles News Agency: *Fish export business in Seychelles being squeezed by pandemic's effects*. <http://www.seychellesnewsagency.com/articles/14293/Fish+export+business+in+Seychelles+being+squeezed+by+pandemic%27s+effects>
- Siar, Susana V. and Kyoko Kusakabe: *Demographic change in fishing communities in Asia: Why it matters*. In INFOFISH International no. 3/2020. Kuala Lumpur 2020.
- SmartFish: *Trade Assessment Study*. SmartFish Programme, Mauritius, November 2011.
- SmartFish: *Fisheries Trade in the Indian Ocean Region*. SmartFish Programme, Mauritius, March 2013.
- Southern Indian Ocean Fisheries Agreement (SIOFA/PSOI): *Southern Indian Ocean Fisheries Agreement*. La Reunion, July 2007.

Blanc, P., Technical Report No.03 –“Review of Aquaculture Governance and Development of Small-Scale Aquaculture in the IORA region, IORA/AFD Technical Assistance Project – Technical Report No. 03.

van Mulekom, Leo, and Anna Axelsson, Ephraim Patrick Batungbacal, Dave Baxter, Radja Siregar, and Isabel de la Torre: *Trade and export orientation of fisheries in Southeast Asia: Under-priced export at the expense of domestic food security and local economies*. Published by Elsevier, July 2006.

Westlund, Lena: *Future prospects for fish and fishery products. Forecasting fish consumption and demand analysis: a literature review*. FAO Fisheries Circular No. 972/5,. Also available at: <https://epub.sub.uni-hamburg.de/epub/volltexte/2010/658/pdf/lena.pdf>

World Bank: *Fish to 2030 – Prospects for Fisheries and Aquaculture*. World Bank Report Number 83177-GLB. Washington DC, December 2013.

World Bank: *The African Continental Free Trade Area*. Washington DC, July 2020. <https://www.worldbank.org/en/topic/trade/publication/the-african-continental-free-trade-area>

Reuters: *China suspends fish imports from Indonesian firm after coronavirus detected*. <https://www.reuters.com/article/us-health-coronavirus-china-seafood-idUSKBN27Q02O>

The Fish Tank: *Fish and Aquatic Food Systems COVID-19 Updates: Bangladesh*. The Worldfish Centre, May 2020. <http://blog.worldfishcenter.org/2020/05/covid-19-updates-bangladesh/>

Appendix B: Country Profiles

A set of 23 country profiles (for each IORA member state) is provided as separate file.

FISH TRADE STUDY – COUNTRY REPORT

AUSTRALIA¹ (COMMONWEALTH OF AUSTRALIA)

Area	7.6 million km ²
Population 2019 (World Bank)	25.5 million
Coastline	25 760 km
EEZ	8 505 348 km ²
Total Fish Production MT (FAO, 2018):	282 374 (incl aquatic plants)
Total Fish Production MT (FAO, 2018):	280 294 (excl. aquatic plants)
Inland aquaculture (MT)	1 579
Marine aquaculture (MT)	95 219
Total Aquaculture (MT)	96 798
Inland capture fisheries (MT)	1 007
Marine capture fisheries (MT)	185 569
Total capture fisheries (MT)	186 576
People employed in industrial fisheries	11 000
Number of fish farmers (FAO, 2018)	6 000
Fish Exports Volume & Value (FAO, 2018)	51 795 MT / USD 1.1. billion
Fish Imports Volume & Value (FAO, 2018)	301 620 MT / USD 1.6 billion
GDP (World Bank, 2018)/ Per capita	\$ 1 433.9 billion / USD 57 374
Fish consumption per capita (FAO 2018)	25.87 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

Australia, formally the Commonwealth of Australia, is a country and sovereign state in the southern hemisphere, located in Oceania. Its capital city is Canberra, and its largest city is Sydney.

Australia is the sixth biggest country in the world by land area, and is part of the Oceanic and Australasian regions. Australia, New Zealand, New Guinea and other islands on the Australian tectonic plate are together called Australasia, which is one of the world's great ecozones. When other Pacific islands are included with Australasia, it is called Oceania.

Some 25.5 million people live in Australia, and about 85% of them live near the east coast. The country is divided into six states and two territories, and more than half of Australia's population lives in and around the cities of Sydney, Melbourne, Brisbane, Perth and Adelaide.

Australia is known for its mining (coal, iron, gold, diamonds and crystals), its production of wool, and as the world's largest producer of bauxite.

Australia has a coastline of 25 760 km, and an exclusive economic zone of 8.5 million km² which is the third largest in the world. The land area covers more than 7.6 million km².

2. Overview of the fisheries sector

Several of Australia's most valuable fisheries are managed at an international level because the stocks are either migratory or straddle Australia's Exclusive Economic Zone (EEZ) and the high seas. UN treaties which Australia has ratified require the country to cooperate with other countries in the management of those fish stocks.

Australia has targeted engagement on international fisheries issues, principally driven through regional fisheries management organisations (RFMOs). RFMOs manage fishery resources that migrate between the jurisdictional waters of different states and the high seas.

2.1. Membership in Regional Fisheries Bodies

- Agreement on the Conservation of Albatrosses and Petrels (ACAP)
- Asia-Pacific Fishery Commission (APFIC)
- Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)
- Commission for the Conservation of Southern Bluefin Tuna (CCSBT)
- Forum Fisheries Agency (FFA)
- Indian Ocean Tuna Commission (IOTC)
- International Whaling Commission (IWC)
- Network of Aquaculture Centers in Asia-Pacific (NACA)
- Secretariat of the Pacific Community (SPC)
- South Indian Ocean Fisheries Agreement (SIOFA)
- South Pacific Regional Fisheries Management Organisation (SPRFMO)
- Western and Central Pacific Fisheries Commission (WCPFC)

2.2. Seafood production

Australia's total production of aquatic organisms (i.e. including aquatic plants and mammals) in 2018 amounted to 283 375 tonnes, of which 186 576 tonnes came from capture fisheries and 96 799 from aquaculture. While capture fisheries have fluctuated between 180 000 and 190 000 tonnes in recent years, aquaculture production has grown and is considered to still hold potential for further growth.

Fisheries and aquaculture production value is forecast to decline by 12% in 2019 - 20 to USD 2.81 billion. A fall in rock lobster production value is expected to account for the majority of this decline, driven largely by the effects of reduced demand from China following the outbreak of the 2019 coronavirus (COVID-19).

The magnitude of the impact of the COVID-19 outbreak is uncertain and depends on the extent of the outbreak, its duration and the effectiveness of control measures. Because of this, the effects of the outbreak could last beyond the 2020 – 21 financial year.

2.2.1. Capture fisheries

Crustaceans, - mainly lobsters -, play an important part in Australian fisheries, and in 2018 accounted for 22 percent of total capture production by volume. However, because lobsters are a high-priced product, the share of the value was higher. Various demersal fish are also an important species group, and in 2018 accounted for 21.4 per cent of the total volume. But the largest group in terms of tonnage was pelagic marine fish, which in 2018 accounted for 73 270 tonnes or 39.3 percent of the total volume.

Table 1: Australia capture production

Volume in tonnes. Source: FAO FISHstatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	76	60	61	146	157
Aquatic Plants	1 923	1 923	1 923	1 923	1 923
Cephalopods	1 793	2 526	2 999	3 028	3 571
Crustaceans	45 868	43 506	42 063	44 197	41 172
Demersal Marine Fish	44 893	41 557	40 785	41 866	39 927
Freshwater and Diadromous Fish	2 557	2 179	2 067	2 464	2 219
Marine Fish NEI	10 532	10 141	14 705	10 906	11 930
Molluscs excl. Cephalopods	9 227	9 029	9 395	9 595	12 199
Pelagic Marine Fish	50 452	57 205	73 910	66 427	73 270
Other	209	203	205	206	208
TOTAL	167 530	168 329	188 113	180 758	186 576

NEI = Not elsewhere included

2.2.2. Aquaculture

Aquaculture in Australia is the country's fastest growing primary industry, and accounts for 40 percent of the total gross value of seafood production. The industry is coordinated by the National Aquaculture Council (NAC). Farming varies from Southern Bluefin tuna-fattening in off-shore sea cages -, to salmon where broodstock and production of fingerlings occurs in offshore and inshore waters, prawn farming in large-scale pond operations, mussels which are grown on marine ropes, abalone which is farmed at sea and on land, marine finfish, freshwater species and pacific oysters.

The dominating species group is freshwater and diadromous fish, which means mainly salmon. In recent years, Tasmania has become a major salmon producer. There is also an important production of bivalves (oysters).

Table 2: Australia aquaculture production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	0	0	0	0	0
Cephalopods	0	0	0	0	0
Crustaceans	3 903	5 426	4 769	4 774	4 371
Freshwater and Diadromous Fish	46 037	53 285	61 040	58 040	68 309
Marine Fish NEI	579	1 098	2 018	2 294	2 487

Molluscs excl. Cephalopods	15 615	15 498	15 728	16 617	13 632
Pelagic Marine Fish	7 544	8 418	8 895	8 100	8 000
Other	0	0	0	0	0
TOTAL	73 678	83 725	92 450	89 825	96 799

NEI = Not elsewhere included

2.2.3. Processing

Much of Australia's seafood is sold (and exported) live, fresh or frozen. Relatively little processing takes place in the country, apart from freezing. There is some limited canning/preserving of crustaceans as well as finfish. Total processed production has declined in the last three years, and in 2018 amounted to only 26 225 tonnes.

Table 3: Processed production – Australia

Volume in tonnes. Source: FAO FishStatJ, 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	9 136	8 450	8 099	7 633	5 133
Crustaceans and molluscs, prepared or preserved	555	655	515	490	500
Fish, dried, salted, or smoked	76	32	63	59	59
Fish, fresh, chilled or frozen	12 588	15 006	23 656	13 221	14 143
Fish, prepared or preserved	2 630	1 425	1 330	1 520	1 390
Meals	9 800	5 000	5 000	5 000	5 000
Oils	90	85	35	-	-
TOTAL	34 875	30 653	38 698	27 923	26 225

2.3. Markets and consumption

Seafood demand in Australia has increased considerably over the last three decades. Currently, Australia's consumer demand for seafood exceeds the supply from domestic production and continues to grow. Domestic aquaculture has the potential to significantly expand to help meet domestic and international demand.

Australia's apparent consumption of seafood has increased at an average annual rate of 1.9% from 1998 till 2018, from 238 968 tonnes in 1997/98 to 341 272 tonnes in 2017/18. However, the per capita consumption has decreased slightly since 2012, and was 13.9 kg per person per year in 2017/18.

2.4. International trade²

Australia's trade in fisheries products is driven by several factors, including the proximity of Australia to fast-growing seafood markets in Asia, and Australia's reputation as a reliable and high-quality supplier of high unit value seafood.

Australia's fisheries and aquaculture industry is also highly exposed to trade, so trends in world markets and Australia's exchange rate influence the price received for most of Australia's major

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FishStatJ. Consequently, figures from the two sources may differ somewhat.

produced species. Export value is forecast to fall by 8% in 2019 – 20 reflecting the effects of COVID-19.

Because of great and growing demand for seafood within Australia, imports play an important role in supplying the domestic market.

2.4.1. Exports

Australian fisheries exports are dominated by high-value products—such as rock lobster, premium tuna species and abalone, while imports largely consist of lower value products, such as canned fish and frozen fillets.

There is further potential to expand Australia’s fisheries exports into new and growing markets, which will in turn secure a more diversified market base for the country’s fisheries products.

Table 4: Exports of seafood commodities – Australia

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	2 413	1 570	1 739	2 289	2 483
Crustaceans & Molluscs, live, fresh, chilled, etc.	842 123	773 190	769 144	755 954	778 466
Crustaceans and molluscs, prepared or preserved	32 526	34 265	25 291	33 200	33 950
Fish, dried, salted, or smoked	5 399	2 214	3 197	4 259	3 739
Fish, fresh, chilled or frozen	202 229	233 156	220 055	291 433	277 318
Fish, prepared or preserved	9 265	8 363	11 234	8 522	8 248
Inedible	1 380	1 083	920	158	789
Meals	752	665	629	585	911
Oils	11 141	13 958	7 844	5 819	3 290
Sponges, corals, shells	6 331	9 692	9 591	9 810	11 745
TOTAL	1 113 559	1 078 156	1 049 644	1 112 029	1 120 939

Table 5: Australia’s exports by destination 2019

Value in USD 1000. Source: ITC Trade Map

Country	HS 03	HS 1604	HS 2301	TOTAL	%
China	676 636	15	19 274	695 925	56.4 %
Japan	144 662	0	34	144 696	11.7 %
Hong Kong	84 951	236	40	85 227	6.9 %
USA	35 466	0	56 986	92 452	7.5 %
Vietnam	19 793	2	14 509	34 304	2.8 %
Singapore	17 050	327	0	17 377	1.4 %
Taiwan	13 329	69	24 796	38 194	3.1 %
Thailand	8 929	18	11 720	20 667	1.7 %
Indonesia	7 569	0	0	7 569	0.6 %
New Zealand	5 509	6 037	4 975	16 521	1.3 %
Malaysia	5 431	73	20 240	25 744	2.1 %
Netherlands	5 344	0	754	6 098	0.5 %
Italy	4 420	12	0	4 432	0.4 %
South Korea	4 260	0	1 622	5 882	0.5 %
Iran	2 173	0	0	2 173	0.2 %

Spain	1 823	7	0	1 830	0.1 %
Canada	1 748	0	15 633	17 381	1.4 %
Germany	1 446	0	582	2 028	0.2 %
UK	1 340	0	0	1 340	0.1 %
UAE	1 046	2	0	1 048	0.1 %
Papua New Guinea	0	99	1 518	1 617	0.1 %
Sri Lanka	9	0	1 566	1 575	0.1 %
Fiji		40	1 342	1 382	0.1 %
South Africa	1	0	925	926	0.1 %
Others	5 869	127	601	6 597	0.5 %
TOTAL	1 048 804	7 064	177 117	1 232 985	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates.

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs.

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

The main fisheries product export destinations for Australia in 2018 were China, Vietnam, Japan, Hong Kong and the United States. Together, these countries accounted for 85% of edible fishery products exported from Australia in 2019. Exports to China reached USD 696 million in 2019, making China the most valuable export destination that year for Australian fisheries products. The increase in export value was driven by an increase in the value of rock lobsters, salmonids and abalone species.

2.4.2. Imports

It has been estimated that around 70 per cent of the edible seafood Australians consume (by weight) is imported, predominantly from Asia.

Whereas Australian fishery and aquaculture exports are dominated by high unit value products such as rock lobster and Blacklip and Greenlip abalone, imports of fishery and aquaculture products largely consist of lower unit value products such as canned or frozen finfish but also include higher unit value products such as prawns and salmonids. The value of fisheries and aquaculture product imports increased by 23% in real terms between 2001 – 02 and 2017 – 18. Prepared and preserved finfish (such as canned tunas) and prawns accounted for the majority of the increase in seafood imports.

Table 6: Imports of seafood commodities – Australia

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	25 913	27 094	24 915	32 916	31 546
Crustaceans & Molluscs, live, fresh, chilled, etc.	488 937	372 516	400 441	392 420	390 183
Crustaceans and molluscs, prepared or preserved	201 284	155 947	161 305	234 106	196 260
Fish, dried, salted, or smoked	75 869	58 840	64 673	80 969	83 461
Fish, fresh, chilled or frozen	409 799	354 178	366 778	403 474	377 242
Fish, prepared or preserved	452 729	390 398	386 919	426 353	456 039
Inedible	23 523	15 710	15 627	20 603	18 408
Meals	53 230	47 398	49 584	34 322	33 711
Oils	41 284	48 004	40 439	40 150	45 246
Sponges, corals, shells	256	298	380	290	311
TOTAL	1 772 824	1 470 383	1 511 061	1 665 603	1 632 407

The major sources of Australian seafood imports in 2019 were Thailand, China, Vietnam and New Zealand. Together, these countries accounted for 59% of imports in 2019. These countries also accounted for the majority of imports roughly 10 years earlier. Norway and Denmark have become increasingly important seafood trade partners for Australia, reflecting growth in imports of salmonids.

Table 7: Australia’s imports by origin 2019

Value in USD 1000. Source: ITC Trade Map

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
China	148 362	28 709	0	177 071	13.9 %
Vietnam	134 231	12 778	0	147 009	11.5 %
New Zealand	119 273	16 636	1 348	137 257	10.8 %
Norway	66 983	799	5 690	73 472	5.8 %
Thailand	53 471	232 911	4 780	291 162	22.8 %
Denmark	46 882	438	0	47 320	3.7 %
Taiwan	38 463	3 599	99	42 161	3.3 %
Indonesia	36 177	28 089	0	64 266	5.0 %
Malaysia	29 797	20 896	0	50 693	4.0 %
USA	23 131	17 031	5 637	45 799	3.6 %
South Africa	15 380	2 163	0	17 543	1.4 %
Japan	10 484	3 275	0	13 759	1.1 %
Namibia	9 185	3	0	9 188	0.7 %
Myanmar	8 595	123	0	8 718	0.7 %
Poland	8 253	11 966	0	20 219	1.6 %
Brazil	6 276	0	0	6 276	0.5 %
Canada	5 995	2 556	3	8 554	0.7 %
UK	1 026	6 492	0	7 518	0.6 %
Italy	45	5 231	0	5 276	0.4 %
Spain	317	4 537	0	4 854	0.4 %
Japan	10 484	3 275	0	13 759	1.1 %
South Korea	2 070	2 689	0	4 759	0.4 %
Peru	2 817	1 566	9 661	14 044	1.1 %
Chile	1 503	147	3 960	5 610	0.4 %
Papua New Guinea	0	0	2 717	2 717	0.2 %
Samoa	5	0	1 627	1 632	0.1 %
India	2 212	142	1 407	3 761	0.3 %
Others	38 024	12 616	1 586	52 226	4.1 %
TOTAL	819 441	418 667	38 515	1 276 623	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates.

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs.

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other.

2.4.3. Trade balance

Australia has a negative trade balance in seafood products, both in terms of volume and value.

Table 8: Australia seafood trade balance 2018

Volume in tonnes; value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	871	15 460	-14 589	2 483	31 546	-29 063
Crustaceans & Molluscs, live, fresh, chilled, etc.	16 159	40 461	-24 302	778 466	390 183	388 283
Crustaceans and molluscs, prepared or preserved	611	24 122	-23 511	33 950	196 260	-162 310
Fish, dried, salted, or smoked	111	5 536	-5 425	3 739	83 461	-79 722
Fish, fresh, chilled or frozen	28 251	67 761	-39 510	277 318	377 242	-99 924
Fish, prepared or preserved	1 639	85 937	-84 298	8 248	456 039	-447 791
Inedible	537	24 578	-24 041	789	18 408	-17 619
Meals	425	24 731	-24 306	911	33 711	-32 800
Oils	2 067	12 974	-10 907	3 290	45 246	-41 956
Sponges, corals, shells	1 124	60	1 064	11 745	311	11 434
Total	51 795	301 620	-249 825	1 120 939	1 632 407	-511 468

FISH TRADE STUDY – COUNTRY REPORT

BANGLADESH¹ (PEOPLE'S REPUBLIC OF BANGLADESH)

Area	10 848 km ²
Shelf area	67 000 km ²
Coastline	714 km
EEZ	86 392 km ²
Population 2019 (World Bank)	164 689 383
Total Fish Production MT (2018):	4 276 641 (incl. aquatic plants)
Total Fish Production MT (2018):	4 276 641 (excl. aquatic plants)
Inland aquaculture (MT)	2 190 833
Marine aquaculture (MT)	214 583
Aquaculture total (MT)	2 405 416
Inland capture (MT)	1 216 538
Marine capture (MT)	654 687
Total capture (MT)	1 871 225
People employed in inland fisheries	1.4 million
People employed in marine fisheries	0.5 million
Number of fish farmers (FAO, 2018)	3.1 million
Fish Exports Volume & Value (FAO, 2018)	66 442 MT / USD 447.9 million
Fish Imports Volume & Value (FAO, 2018)	142 051 MT / USD 122.1 million
GDP (IMF, 2019) / Per capita	USD 249.7 billion/ USD 1 564
Fish consumption per capita (FAO, 2018)	24.31 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

Bangladesh is a republic in South Asia that essentially consists of the delta areas of the rivers Ganges and Brahmaputra. India encircles the country on all sides, except for a small area in the far southeast where Bangladesh borders on Myanmar (Burma).

Bangladesh is among the world's most densely populated countries and at the same time one of the world's poorest and least developed. It is very prone to be hit by floods and cyclones, and has been hit by countless disasters.

Bangladesh includes the eastern part of the Ganges plain. The rivers Ganges and Brahmaputra, which at the border with Bangladesh are called Padma and Jamuna, as well as Meghna, characterize the landscape.

Ninety percent of the country consists of lowlands with vast delta areas that never reach higher than ten meters above sea level. The only ridges are located in the northeast at Sylhet and in the southeast in the Chittagong areas with average heights of 240 and 600 meters above sea level, respectively. The highest mountain is Keokradong, 1 230 meters above sea level, furthest to the southeast.

Deforestation has led to the rivers being both richer in water and carrying more sludge than before. The rivers have become shallower, and the country is experiencing more frequent severe flood damage than earlier.

2. Overview of the fisheries sector

Bangladesh has a unique position in the sub-tropical region, within the delta of three great rivers, the Ganges, the Brahmaputra (and Jamuna) and the Meghna, covering an area of 14.4 million hectares. In view of this important river system, inland fisheries and aquaculture are prime contributors to food security and employment. About 1.4 million people find jobs in inland water fishing, while another 0.5 million people find jobs in marine fishing.

The fisheries sector in Bangladesh is broadly divided into four sub-sectors: inland capture, inland culture, mariculture (artisanal marine fisheries) and marine industrial fisheries.

2.1. Membership in regional fisheries bodies

- Asia-Pacific Fishery Commission (APFIC)
- Bay of Bengal Programme Inter-Governmental Organization (BOBP-IGO)
- Indian Ocean Tuna Commission (IOTC)
- Network of Aquaculture Centers in Asia-Pacific (NACA)

Bangladesh is party to the 1982 UN Convention on the Law of the Sea (UNCLOS) since 2001, and signed the 1995 UN Fish Stocks Agreement. Bangladesh is a member of the Intergovernmental Organization for Marketing Information and Technical Advisory Services for Fishery Products in the Asia and Pacific Region (INFOFISH), Bay of Bengal Programme (BOBP), and the Network of Aquaculture Centres in Asia and the Pacific (NACA).

2.2. Seafood production

Total fish production in Bangladesh in 2018 was reported to be 4.3 million tonnes, of which 2.4 million tonnes (56.2%) came from aquaculture, 1 216 538 tonnes (28.4%) from inland capture fisheries and 654 687 tonnes (15.3%) from marine capture fisheries, and 214 583 tonnes from marine aquaculture.

2.2.1. Capture fisheries

Since inland fisheries is dominating the capture fisheries, it is only natural that the largest species group is freshwater and diadromous fish, which in 2018 accounted for 76.6% of total capture fisheries. Crustaceans (mainly shrimp) accounted for 6.2% of capture fisheries, and marine fish 17.2% of the total capture volume.

Table 1: Bangladesh capture production

Volume in tonnes. Source: FAO FishStatJ

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	-	-	-	-	-
Aquatic plants	0	0	0	0	0
Cephalopods	0	0	0	0	0
Crustaceans	93 596	97 450	101 222	107 622	116 383
Demersal Marine Fish	74 289	76 117	80 077	88 757	96 081
Freshwater and Diadromous Fish	1 207 503	1 224 089	1 248 798	1 384 553	1 433 502
Marine Fish NEI	211 899	222 088	240 237	216 178	221 184
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	3 903	4 093	4 436	3 974	4 075
Other	0	0	0	0	0
TOTAL	1 591 190	1 623 837	1 674 770	1 801 084	1 871 225

The coastal and marine environment of Bangladesh is blessed with a warm tropical climate and high rainfall, enriched with nutrients from the land, creating a rich ecosystem with high productivity. Exploration, exploitation and management of living and non-living resources of the Bay of Bengal have potential to substantially contribute to the economy of Bangladesh. In Bangladeshi marine waters, fish resources are extracted in three tiers: (1) up to 40 m in depth from the coastline where normal fishing boats operate; (2) from 40 m to 200 m in depth where mid-water trawlers operate; and (3) from 200 m in depth to the end of the EEZ where long-liners operate.

2.2.2. Aquaculture

Inland aquaculture has generally experienced the fastest growth, with the application of new technologies, species, and intensification and improvement of farming, particularly in pond aquaculture. Aquaculture now provides around half the fish for direct human consumption in Bangladesh and is set to grow further. The aquaculture industry contributes to the economy with increasing production capacity and high export opportunities. Over the last 10 years, the average growth rate of fisheries is 5.4%, while aquaculture has grown 8.2%.

Aquaculture systems are extensive and improved extensive, with a few semi-intensive and intensive systems. The extensive systems rely on stocking with Indian major carp and there is no fertilization or feeding. In improved extensive systems the Indian major carps are complemented with exotic carps. The ponds are irregularly fertilized. Semi-intensive systems include culture of catfish (primarily striped catfish (*Pangasianodon hypophthalmus*) locally known as Thai pangas) and monosex tilapia. Ponds are fertilized and fish feed applied. Culture-based fisheries in closed waters has expanded rapidly in some areas of Bangladesh. The main species are a mix of indigenous and exotic species, including tilapia. Concerns have been raised about biodiversity impact as well as exclusion of poor fishers from the new management system.

Aquaculture is a growth sector in Bangladesh There is still a potential for development of the sector, but it will increasingly meet resistance from and be competing with agriculture. Pollution from fish farming but also the impact of pollution on fish farming is becoming an issue. Quality is a major concern in the shrimp farming industry.

Responsible development of the aquaculture sector may cause a growth in availability of high-value animal protein for the growing local population as well as for an expanding export market.

Table 2: Bangladesh aquaculture production

Volume in tonnes. Source: FAO FishStatJ

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic plants	0	0	0	0	0
Cephalopods	0	0	0	0	0
Crustaceans	130 192	132 794	145 673	153 573	142 708
Demersal Marine Fish	0	0	0	0	0
Freshwater and Diadromous Fish	1 733 076	1 830 982	1 944 642	2 063 669	2 130 891
Marine Fish NEI	93 657	96 632	113 239	116 110	131 817
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	0	0	0	0	0
Other	0	0	0	0	0
TOTAL	1 956 925	2 060 408	2 203 554	2 333 352	2 405 416

2.2.3. Processing

Fish is mainly sold fresh on local markets close to landing sites. For the major urban markets fish is iced and transported by truck and sold fresh. Dedicated fishing for drying is carried out in the Bay of Bengal during the winter months.

Fish and shrimp for export markets (either from capture fisheries or aquaculture) are frozen and processed. Europe and Japan have been the main destinations for frozen shrimp. Export consignments have frequently been rejected on the European market, and Bangladesh voluntarily closed exports for a six-month period, during which the Department of Fisheries conducted an awareness campaign among shrimp farmers and processors on improved quality.

Table 3: Processed production – Bangladesh

Volume in tonnes. Source: FAO FishStatJ, 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	47 636	44 278	40 726	39 706	36 168
Fish, dried, salted, or smoked	49 790	51 199	52 419	58 485	60 828
Fish, fresh, chilled or frozen	19 916	21 480	21 855	23 272	24 331
Meals	5 689	5 860	7 825	5 000	6 736
TOTAL	123 031	122 817	122 825	126 463	128 063

2.3. Consumption

The per caput supply of fish and fish products is 24.3 kg/yr. The supply has increased from 7 kg/yr in 1989. Fish provides 50.5% of the total animal protein supply. In rural areas and among poorer population groups, fish is the only significant source of animal protein.

2.4. International trade²

2.4.1. Exports

Bangladeshi exports of seafood have been a little bit up and down. In 2018, total exports of seafood amounted to 66 442 tonnes worth USD 447 906, which was considerably below the 2014 figure of USD 603 607.

The most valuable export commodity was shrimp, which accounted for 84% of the total seafood exports. EU is the main market for this, but significant quantities are also sent to the United States of America and Japan.

The main export markets for Bangladesh are European countries (The UK, Netherlands, Belgium, Germany, France), the USA, China and Japan. A relatively small share of the country's exports goes to neighbouring countries.

Table 4: Exports of seafood commodities – Bangladesh

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	16	129	64	60	60
Crustaceans & Molluscs, live, fresh, chilled, etc.	537 180	395 475	484 347	428 987	367 853
Crustaceans and molluscs, prepared or preserved	7 028	2 312	10 362	8 579	8 122
Fish, dried, salted, or smoked	8 003	3 223	7 551	7 624	7 529
Fish, fresh, chilled or frozen	49 648	46 312	56 783	51 341	63 334
Fish, prepared or preserved	...	...	...	34	32
Inedible	469	202	552	400	888
Meals	...	...	5	...	0
Oils	...	...	...	...	5
Sponges, corals, shells	1 263	260	174	116	83
TOTAL	603 607	447 913	559 838	497 141	447 906

Table 5: Bangladesh exports by destination 2015

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
United Kingdom	88 014	0	0	88 014	19.77 %
Netherlands	78 811	0	0	78 811	17.71 %
Belgium	60 780	0	0	60 780	13.65 %
Germany	51 452	0	0	51 452	11.56 %
United States of America	37 254	1	0	37 255	8.37 %
France	19 826	0	0	19 826	4.45 %
China	16 723	1	0	16 724	3.76 %
Japan	15 783	0	0	15 783	3.55 %
Saudi Arabia	8 952	0	0	8 952	2.01 %
Denmark	8 119	0	0	8 119	1.82 %

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FishStatJ. Consequently, figures from the two sources may differ somewhat.

Russian Federation	6 300	0	0	6 300	1.42 %
India	5 643	0	0	5 643	1.27 %
Viet Nam	4 876	0	0	4 876	1.10 %
Portugal	4 630	0	0	4 630	1.04 %
United Arab Emirates	4 200	6	0	4 206	0.94 %
Hong Kong, China	4 054	0	0	4 054	0.91 %
Canada	2 793	0	0	2 793	0.63 %
Cyprus	2 333	0	0	2 333	0.52 %
Mexico	2 155	0	0	2 155	0.48 %
Malaysia	494	46	0	540	0.12 %
Others	21 816	54	0	21 870	4.91 %
TOTAL	445 008	108	0	445 116	100.00 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.4.2. 2.4.2. Imports

Imports have been increasing more or less steadily over the past five years (Table 6) in 2018, imports amounted to 142 051 tonnes worth USD 122.1 million. The most important import commodity is fresh, chilled or frozen fish. Bangladesh also imports important quantities of fishmeal for fish feed.

Table 6: Imports of seafood commodities – Bangladesh

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	432	804	793	300	439
Crustaceans & Molluscs, live, fresh, chilled, etc.	2 902	2 503	2 352	1 173	1 422
Crustaceans and molluscs, prepared or preserved	111	21	89	31	228
Fish, dried, salted, or smoked	5 276	7 889	3 265	6 462	10 055
Fish, fresh, chilled or frozen	35 661	44 882	46 359	45 123	60 960
Fish, prepared or preserved	467	107	340	286	787
Inedible	2 644	4 385	3 241	1 947	3 495
Meals	5 460	23 514	27 530	33 431	38 832
Oils	2 330	4 155	1 796	3 554	5 107
Sponges, corals, shells	90	188	86	951	770
TOTAL	55 373	88 448	85 851	93 258	122 095

Major suppliers to Bangladesh include neighbouring countries like India, Myanmar, Pakistan, and Vietnam. But large amounts are also imported from UAE and Yemen. Consequently, Bangladesh is relatively active in intra-regional trade as an importer.

Table 7: Bangladesh imports by destination 2015

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
India	24 487	0	14	24 501	44.23 %
Myanmar	5 822	0	0	5 822	10.51 %
Oman	9 526	0	0	9 526	17.19 %

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
Pakistan	2 158	0	0	2 158	3.90 %
Singapore	949	4	0	953	1.72 %
UAE	6 742	6	0	6 748	12.18 %
Vietnam	835	0	0	835	1.51 %
Uruguay	692	0	0	692	1.25 %
Yemen	1 742	0	0	1 742	3.14 %
Belgium	594	0	0	594	1.07 %
France	166	0	0	166	0.30 %
Saudi Arabia	0	0	0	0	0.00 %
Malaysia	322	46	0	368	0.66 %
Thailand		45		45	0.08 %
South Korea	5	5	0	10	0.02 %
Others	1 237	2	1	1 240	2.24 %
TOTAL	55 277	108	15	55 400	100.00 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.4.3. Trade balance

Bangladesh has a negative trade balance in terms of volume, but a positive trade balance in terms of value. I.e. the country is importing more seafood than it exports, but a positive trade balance in terms of value, i.e. it spends less on imports than it earns on exports. As can be seen from Table 8, it is crustaceans (shrimp) that is the big export earner.

Table 8: Bangladesh seafood trade balance 2018

Volume in tonnes; value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	100	29	71	60	439	-379
Crustaceans & Molluscs, live, fresh, chilled, etc.	40 725	145	40 580	367 853	1 422	366 431
Crustaceans and molluscs, prepared or preserved	1 169	58	1 111	8 122	228	7 894
Fish, dried, salted, or smoked	2 225	8 317	-6 092	7 529	10 055	-2 526
Fish, fresh, chilled or frozen	21 034	87 677	-66 643	63 334	60 960	2 374
Fish, prepared or preserved	24	744	-720	32	787	-755
Inedible	941	6 668	-5 727	888	3 495	-2 607
Meals	0	33 862	-33 862	0	38 832	-38 832
Oils	9	3 609	-3 600	5	5 107	-5 102
Sponges, corals, shells	215	942	-727	83	770	-687
TOTAL	66 442	142 051	-75 609	447 906	122 095	325 811

FISH TRADE STUDY – COUNTRY REPORT

COMOROS¹ (UNION OF COMOROS)

Area	2 170 km ²
Shelf area	1 526 km ²
EEZ	163 752 km ²
Population 2019 (World Bank)	869 601
Total Fish Production MT (2018):	13 089 MT (including aquatic plants)
Total Fish Production MT (2018):	13 089 MT (excluding aquatic plants)
Inland aquaculture (MT)	0
Marine aquaculture (MT)	0
Aquaculture total (MT)	0
Inland capture (MT)	0
Marine capture (MT)	13 089 MT
Total capture (MT)	13 089 MT
Fish Exports Volume & Value (FAO, 2018)	0 MT / USD 0
Fish Imports Volume & Value (FAO, 2018)	1722 MT / USD 2 494 000
GDP (World Bank, 2019)	USD 1. 07 billion / USD 1 312 per capita
Fish consumption per capita (FAO, 2007)	4.2 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

The Union of the Comoros is part of an archipelago which lies nearly 500 km equidistant from the northern tip of Madagascar and the Mozambican coast and comprises three islands: Ngazidja (Grande Comore), Nzwani (Anjouan); Mwali (Mohéli). However, the archipelago includes also Mayotte which is not a member of the Union but administered by France. Comoros has a population of 870 000 people (2019) and half of them lives on the largest island, Ngazidja. The state is classified by the UN Human Development report among the low developed countries, with a per capita GDP of \$US 1 312 (2019) and some 45% of the population living below the poverty line.

The economy relies mainly on the primary sector (agriculture, fishing, forestry) which accounts account for 50% of GDP and is geared towards the production of three high-value export crops: vanilla, cloves and ylang-ylang², which provide around 95% of export earnings. There is a small fishing industry, a minimal industrial base devoted mainly to processing vanilla, and a fledgling tourism industry. Economic growth is largely sustained by remittances from Comorians abroad which account for 20% of GDP and has been stalling in the past few years, mainly as a result of political instability and general lack of infrastructure.

2. Description of the fisheries sector

Fisheries in Comoros are almost entirely artisanal and practiced in fiberglass boats and wooden dugout canoes mainly using traditional deep sea handline fishing. The number of boats is reported to be 5.000 units, and 30% of those is motorized. Artisanal Fishing occurs mainly in an area of approximately more than 160,000 km², which covers 900 km² of continental shelf and 427 km of coastline. This area has a full potential of resources estimated to be 33,000 tonnes annually, of which only the 64% is currently exploited.

Catches are used for household subsistence or sold at local markets after a very limited processing (smoking and salt-and-dry). Fishermen are organized in national and island fishing syndicates, and village fishing associations (Organisations Professionnelles de la Pêche). In addition to small-scale fisheries, surface longline and purse seine industrial fishing (practiced by a foreign fleet) also occur in Comorian waters, mainly targeting tuna for export. The sector employs 6% of the population and contributes significantly to reducing unemployment and improving the income of poor families. The contribution to national GDP is estimated at 8% and to the foreign exchange earnings at 5%.

2.1. Production

Total production has fluctuated between 10 000 and 17 000 tonnes in recent years. In 2018, total production amounted to 13 089 tonnes, all of which came from capture fisheries.

2.1.1. Capture production

Table 1: Comoros capture fisheries production by major groups

Volume in tonnes. Source: FAO FishStatJ 2020

Species group	2014	2015	2016	2017	2018
Crustaceans	28	28	28	28	28
Demersal Marine Fish	11	25	594	798	798
Freshwater and Diadromous Fish	0 0	0 0	0 0	0 0	0 0
Marine Fish NEI	1 105	1 913	192	2 052	2 052

² Ylang is a yellow, star-shaped flower that grows on the Cananga tree (*Cananga odorata*). The ylang flower is used to make several types of essential oil, via steam distillation. The oils vary in the intensity of their scent.

Molluscs excl. Cephalopods	-	-	-	-	-
Pelagic Marine Fish	8 112	10 708	15 593	13 942	10 211
TOTAL	9 256	12 674	16 407	16 820	13 089

2.1.2. 2.1.2. Aquaculture

There is no recorded aquaculture production in Comoros, according to FAO.

2.2. International trade

International trade is very limited, and practically no exports are recorded. The country does import some seafood, though, mainly for domestic consumption and to supply the tourist industry. In 2018 total imports amounted to 1 722 tonnes worth USD 2.5 million.

2.2.1. Exports

As mentioned, exports are practically nil. All of the local catch is consumed locally, as the fisheries activities are mainly artisanal and subsistence fishing.

Table 2: Comoros exports by major commodities

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	-	-	-	6	-
Crustaceans and molluscs, prepared or preserved	-	-	-	-	-
Fish, dried, salted, or smoked	-	-	-	-	-
Fish, fresh, chilled or frozen	...	...	137	-	-
Fish, prepared or preserved	-	-	-	-	-
Sponges, corals, shells	-	-	-	-	-
TOTAL	0	0	137	6	0

2.2.2. Imports

Imports consist mainly of fish for local consumption in fresh or frozen form. However, in terms of value, the main product form is prepared and preserved fish.

The main suppliers include Morocco, China and Mauritius. Together, these three countries account for 81% of the total import value.

Table 3: Comoros imports by commodity

Value in USD 1000. Source: FAO FishStatJ, 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	1	1	0 0	0 0	-
Crustaceans & Molluscs, live, fresh, chilled, etc.	8	11	0 0	0 0	5
Crustaceans and molluscs, prepared or preserved	2	1	...	0 0	1
Fish, dried, salted, or smoked	69	45	69	27	27
Fish, fresh, chilled or frozen	...	31	716	260	880
Fish, prepared or preserved	1 283	1 007	1 205	1 384	1 577
Meals	...	24	-	-	-
Oils	18	-	0 0	20	4
Sponges, corals, shells	-	-	-	-	-
TOTAL	1 381	1 120	1 990	1 691	2 494

Table 4: Comoros imports by origin 2019

USD 1000. Source: ITC TradeMap

Origion	HS 03	HS 1604	HS 2301	TOTAL	%
China	550	104	0	654	19.6 %
Madagascar	90	0	0	90	2.7 %
France	72	48	0	120	3.6 %
Denmark	61	0	0	61	1.8 %
New Zealand	33	0	0	33	1.0 %
Ukraine	33	0	0	33	1.0 %
UAE	32	125	0	157	4.7 %
Mauritania	31	0	0	31	0.9 %
Switzerland	30	0	0	30	0.9 %
Spain	27	0	0	27	0.8 %
Morocco	0	1 607	0	1 607	48.2 %
Mauritius	0	437	0	437	13.1 %
Vietnam	0	22	0	22	0.7 %
Others	34	1	0	35	1.0 %
TOTAL	993	2 344	0	3 337	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.2.3. Trade balance

Comoros has a negative trade balance in fisheries and seafood products, both in terms of volume and value.

Table 5: Trade balance - Comoros

Volume in tonnes; value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Crustaceans & Molluscs, live, fresh, chilled, etc.	0	0	0	0	0	0
Crustaceans & Molluscs, live, fresh, chilled, etc.	0	11	-11	0	5	-5
Crustaceans and molluscs, prepared or preserved	0	1	-1	0	1	-1
Fish, dried, salted, or smoked	0	37	-37	0	27	-27
Fish, fresh, chilled or frozen	0	734	-734	0	880	-880
Fish, prepared or preserved	0	938	-938	0	1 577	-1 577
Meals	0	0	0	0	0	0
Oils	0	1	-1	0	4	-4
Sponges, corals, shells	0	0	0	0	0	0
TOTAL	0	1 722	-1 722	0	2 494	-2 494

FISH TRADE STUDY – COUNTRY REPORT

FRANCE (RÉUNION) (OVERSEAS DEPARTMENT AND REGION OF FRANCE)

Area	2 511 km ²
Population 2020 (World Bank)	859 959
Coastline	207 km
EEZ	315 058 km ²
Total Fish Production MT (2018)	2 308
Inland aquaculture (MT)	0
Marine aquaculture (MT)	10
Total Aquaculture (MT)	10
Inland capture fisheries (MT)	0
Marine capture fisheries (MT)	2 298
Total capture fisheries (MT)	2 298
Fish Exports Volume & Value (FAO, 2018)	NA
Fish Imports Volume & Value (FAO, 2018)	NA
GDP (World Bank, 2019)	USD 22.3 billion / USD 25 900 per cap.
Fish consumption per capita (FAO, 2018)	21.5 kg/person/year

1. Background

Réunion is an overseas department and region of the French Republic and an Indian Ocean island in East Africa, east of Madagascar and 175 km southwest of Mauritius. As of January 2020, it had a population of 859,959.

As in metropolitan France, the official language is French. In addition, the majority of the region's population speaks Réunion Creole.

Administratively, Réunion is one of the overseas departments of France. Like the other four overseas departments, it is also one of the 18 regions of France, with the modified status of overseas region, and an integral part of the Republic with the same status as Metropolitan France. Réunion is an outermost region of the European Union and, as an overseas department of France, part of the eurozone.

2. Overview of the fisheries sector

The Réunion fishery has experienced rapid growth and development in all segments (artisanal fishery, Antarctic deep-sea fishery, longline fishery) for a decade, in marked contrast to the situation experienced by the huge majority of other EU fishing communities. The longlining sector has shown the most rapid development. Longlining has, since 1996, not only equalled but overtaken the artisanal fishery, with more than 2 300 tonnes produced in 1997 and an active fleet of 21 vessels which range from 9 to 33 m long. This fishery targets mainly swordfish (*Xiphias gladius*) throughout the year, using deep freeze conservation techniques. The artisanal segment has also shown a rapid expansion due to the development of FAD¹-associated techniques. In the coastal waters (up to 15 miles) of Réunion Island, there are now more than 30 FADs, exploited by local fishermen from small fishing units with troll and drifting hand lines for sale on the local market.

For Réunion, employment in the fishery sector accounts for approximately 1 200 jobs, a relative contribution of 0.5 % to the total work force of 240 000. Total employment in processing (all of which can be said to be linked to the large pelagic fishing sector, mostly swordfish) is estimated to be about 40 - 50 persons. The level of unemployment in the French outermost regions is high, an average of 25%, and 60% among the young people. Therefore, fishing sector development is a key issue to achieve economic cohesion, social stability and progress.

2.1. Membership in regional fisheries bodies

As a department of France, Réunion is a member of the fisheries bodies that France is a member of, and of major relevance in the current context are:

- The Indian Ocean Tuna Commission (IOTC)
- The South West Indian Ocean Fisheries Commission (SWIOFC)
- South Indian Ocean Fisheries Agreement (SIOFA)

2.2. Seafood production

European outermost regions including Reunion are important providers of seafood to Europe. Adversely, fisheries play an important role in the economy of insular regions. These remote territories experience specific hardships in relation to their economic development, due to their location, limited range of activities in which they can sustain a competitive advantage.

¹ FAD = Fish Aggregating Devices

2.2.1. Capture fisheries

Fishery resources in Reunion Island are dominated by pelagic species, including tunas, swordfish, various billfish, mahi mahi (*Coryphaena hippurus*), as well as some pelagic sharks. A variety of bottom-dwelling or coastal species are also caught, but in relatively small amounts.

Table 1: Réunion capture fisheries production

Volume in tonnes. Source: FAO FishStatJ

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	0	0	0	0	0
Cephalopods	0	0	0	0	0
Crustaceans	0	0	0	1	0
Demersal Marine Fish	39	22	46	18	52
Freshwater and Diadromous Fish	0	0	0	0	0
Marine Fish NEI	29	35	18	2	3
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	2 444	2 747	3 063	2 226	2 243
Other	0	0	0	0	0
TOTAL	2 512	2 804	3 127	2 247	2 298

NEI = Not Elsewhere Included

2.2.2. Aquaculture

Aquaculture is an expanding sector worldwide and could possibly be developed in Reunion. Fish farming is based only on exogenous species and not native ones. The adaptation of the species poses an additional difficulty and an extra cost.

There have been some attempts to initiate aquaculture, but this appears to have had limited success. FAO aquaculture statistics estimate that there is a production of 50 tonnes Laban wrasse (*Labrus bergylta*). The island established a technical unit of aquaculture competence called ARDA7 (Hydro Réunion) in 1991 and reformed it in 2007 into a technology development centre.

Table 2: Réunion aquaculture production

Volume in tonnes. Source: FAO FishStatJ

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	0	0	0	0	0
Cephalopods	0	0	0	0	0
Crustaceans	0	0	0	0	0
Demersal Marine Fish	5	5	5	0	0
Freshwater and Diadromous Fish	60	60	60	10	10
Marine Fish NEI	0	0	0	0	0
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	0	0	0	0	0
Other	0	0	0	0	0
TOTAL	65	65	65	10	10

NEI = Not Elsewhere Included

2.2.3. Processing

After several reorganizations and bankruptcies in the period 2010 - 2012, there are now three main vertically integrated companies engaged in the primary processing of products from the longline fishery, of which two supply the export market. A fourth enterprise specialises in high value-added products for the local market.

2.3. Foreign trade

According to FAO statistics, Réunion has no imports or exports of seafood. However, it is known that the island ships seafood to the EU, i.e. France, and because the island is formally an overseas department of France, this is not considered exports. Likewise, any shipment of seafood from France to Réunion would not be considered imports.

A curious effect of Réunion's special status as a department of France is that shipments from Réunion to France is not considered international trade/exports, and consequently, no tariffs apply, and products from Réunion are not subject to the same quality requirements as for example Mauritius or the Seychelles.

Furthermore, international trade is recorded as part of France's international trade.

The products are sold locally and to export markets (mainland France, Spain, and South East Asia). Marketed products are tuna and swordfish in the form of fresh gutted whole fish or loins, although peak catches are also frozen.

FISH TRADE STUDY – COUNTRY REPORT

INDIA¹ (REPUBLIC OF INDIA)

Area	2 973 190 km ²
Shelf area / EEZ (IMF 2019)	402 996 km ² / 2 305 143 km ²
Coastline	7 517 km
EEZ	2 305 143 km ²
Population 2019 (IMF)	1 380 004 385
Total Fish Production MT (2018):	12 408 888 MT (incl. aquatic plants)
Total Fish Production MT (2018):	12 386 253 MT (excl. aquatic plants)
Inland aquaculture (MT)	6 250 700 MT
Marine aquaculture (MT)	815 300 MT
Aquaculture total (MT)	7 066 000 MT
Inland capture (MT)	1 700 108 MT
Marine capture (MT)	3 642 780 MT
Total capture (MT)	5 342 888 MT
Fish Exports Volume & Value (FAO, 2018)	1 436 108 MT / USD 6.94 billion
Fish Imports Volume & Value (FAO, 2018)	54 873 MT/ USD 153.0 million
GDP (IMF, 2019) / GDP per capita	USD 2 650.7 billion / USD 1 980
Fish consumption per capita (FAO, 2018)	6.9 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

The Republic of India is the largest country in South Asia, and the second most populous country in the world. Main cities include New Delhi (capital), Mumbai (Bombay), Kolkata (Calcutta) and Chennai (Madras).

The country has a common border with Pakistan in the west and northwest, with China, Nepal and Bhutan in the north and east. It also borders on Myanmar and Bangladesh to the east and southeast.

The coastline is about 7 517 km long and borders on the Arabian Sea to the east, the Indian Ocean to the south, and the Bay of Bengal to the east.

2. Overview of the fisheries sector

Fisheries and aquaculture are an important source of food production, nutritional security, employment, and income in India. The fisheries sector is a direct source of livelihood for more than 20 million fishers and fish farmers; contributes INR 1.75 trillion annually to the gross value added to India's economy; and is a major export earner, with fish being one of the most important commodities to be exported from India.

The Indian coastline can be delineated into 22 zones, based on the ecosystem structure and functions. The Indian boat types range from the traditional catamarans, masula boats, plank-built boats, dugout canoes, machwas, dhonis to the present day motorized fibre-glass boats, mechanized trawlers and gillnetters. In the marine fisheries sector, there were 194 490 crafts (in 2017) in the fishery out of which 37% were mechanized, 37% were motorized and 26% were non-motorized. Out of a total of 167 957 crafts fully owned by fisherfolk 53% were non-motorized, 24% were motorized and 23% were mechanized. Among the mechanized crafts fully owned by fishermen, 29% were trawlers, 43% were gillnetters and 19% were dolnetters (used for operating dol nets, which are basically fixed bag nets).

India's freshwater resources consists of rivers and canals (197 024 km), reservoirs (3.15 million ha), ponds and tanks (235 million ha), oxbow lakes and derelict waters (1.3 million ha), brackishwaters (1.24 million ha) and estuaries (0.29 million ha). The inland capture fish production has increased from 192 000 tonnes in 1950 to 1.7 million tonnes in 2018, the major species being cyprinids (carps), siluroids (catfish) and murrels (snakeheads).

2.1. Membership in regional fisheries bodies

- Asia-Pacific Fishery Commission (APFIC)
- Bay of Bengal Programme Inter-Governmental Organization (BOBP-IGO)
- Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)
- Indian Ocean Tuna Commission (IOTC)
- International Whaling Commission (IWC)
- Network of Aquaculture Centers in Asia-Pacific (NACA)

2.2. Seafood production

Fish production reached an estimated level of 12.4 million tonnes in 2018. In that year, the estimated production for capture fisheries was of 5.3 million tonnes while 7.1 million tonnes came from aquaculture.

India's marine fisheries production has reached a plateau as most major stocks are fully exploited. At best, only a marginal increase can be realized through exploitation of deep-sea resources. Strenuous efforts are needed at federal and state levels to upgrade the country's capacity to manage its marine fisheries. Unregulated access to these fisheries resulted in significant overfishing, especially by

medium and small trawlers that compete over dwindling fishery resources with mostly impoverished small-scale fishers.

India is seeking to expand fishing activities into its full EEZ and indicated interest for assistance with the conversion and modernization of its smaller vessels. Despite attempts to reduce post-harvest losses, handling fresh fish with a minimum of spoilage is still problematic and needs considerable attention.

2.2.1. Capture fisheries

Capture fisheries is a fairly balanced activity when it comes to species, with large quantities of demersal and pelagic fish being landed. Cephalopods are also of great importance, as are crustaceans, mainly shrimp.

Total production has fluctuated a little over the years but seems fairly stable at just over 5 million tonnes now.

The largest species groups in capture fisheries are pelagic marine fish and demersal marine fish. The country also has a sizeable production of crustaceans (mostly shrimp) and cephalopods.

Table 1: India capture fisheries production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	6	6	6	0	0
Aquatic Plants	18 890	18 650	20 576	22 635	22 635
Cephalopods	173 213	213 477	231 276	251 679	220 844
Crustaceans	505 552	471 427	495 240	540 184	515 941
Demersal Marine Fish	1 078 518	1 101 647	1 319 164	1 353 659	1 180 722
Freshwater and Diadromous Fish	1 205 247	1 307 659	1 491 599	1 586 537	1 645 669
Marine Fish NEI	150 383	153 639	92 397	63 543	125 645
Molluscs excl. Cephalopods	143 214	103 834	92 208	109 874	142 442
Pelagic Marine Fish	1 724 470	1 491 699	1 454 479	1 625 837	1 488 990
Other	0	0	0	0	0
TOTAL	4 999 493	4 862 038	5 196 945	5 553 948	5 342 888

NEI = Not Elsewhere Included

2.2.2. Aquaculture

India's aquaculture production can be classified into freshwater and brackishwater production. Freshwater aquaculture contributes just over 50% of the total fish production in the country.

Some of the major species in India include Indian major carps and shrimp. In addition, ornamental fish and seaweed are also cultured.

Aquaculture has long been a major fish producing subsector with the production of 7.1 million tonnes of food fish in 2018, the second highest after China. About 88.5 percent of farmed fish comes from inland aquaculture, and carps and other freshwater fish account for the bulk of aquaculture production.

Table 2: India aquaculture production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	3 002	3 002	2 002	4 869	5 302
Cephalopods	0	0	0	0	0
Crustaceans	385 739	509 487	531 431	652 217	692 300
Demersal Marine Fish	0	0	0	0	0
Freshwater and Diadromous Fish	4 400 061	4 647 913	5 065 969	5 418 783	6 250 700
Marine Fish NEI	90 000	90 000	90 000	96 000	110 000
Molluscs excl. Cephalopods	14 200	12 600	12 600	13 000	13 000
Pelagic Marine Fish	0	0	0	0	0
Other	0	0	0	0	0
TOTAL	4 893 002	5 263 002	5 702 002	6 184 869	7 071 302

NEI = Not Elsewhere Included

2.2.3. Processing

Over the years, the country has built up a processing industry in order to serve the export industry. This industry produces over 2 million tonnes of products every year. Freezing is the most important processing method and includes shrimp as well as fish. In addition, there is an important volume of traditionally products (smoked, dried, salted) being processed, and a certain production of fish meal and fish oil.

Table 3: Processed production – India

Volume in tonnes. Source: FAO FishStatJ, 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	503 270	567 353	627 326	481 959	530 790
Crustaceans and molluscs, prepared or preserved	2 400	10 150	23 400	30 000	32 100
Fish, dried, salted, or smoked	695 995	670 100	703 500	704 736	758 543
Fish, fresh, chilled or frozen	582 871	551 274	565 690	633 391	637 174
Fish, prepared or preserved	29 500	27 500	30 000	32 300	34 400
Meals	120 000	103 200	152 900	165 740	175 061
Oils	37 000	20 000	27 400	49 636	26 715
TOTAL	1 971 036	1 949 577	2 130 216	2 097 762	2 194 783

2.3. International trade²

India is a major operator on the international market for seafood products and is the eighth largest exporter in the world. In 2018 India exported 1.4 million tonnes worth USD 6.9 billion.

2.3.1. Exports

India is an important exporter of seafood, and in 2018 ranked number four on the list of the largest exporters, with an export volume of 1 436 108 tonnes worth USD 6.9 billion.

Table 4: India exports by major commodities

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	8 966	8 614	6 249	6 285	6 746
Crustaceans & Molluscs, live, fresh, chilled, etc.	4 389 570	3 722 678	4 268 749	5 560 490	5 255 620
Crustaceans and molluscs, prepared or preserved	111 184	167 468	253 702	354 522	385 032
Fish, dried, salted, or smoked	29 290	40 171	70 518	69 816	92 668
Fish, fresh, chilled or frozen	936 863	815 080	868 264	1 014 521	1 033 678
Fish, prepared or preserved	33 411	32 904	37 850	39 380	42 086
Inedible	278	142	173	328	1 102
Meals	64 463	56 664	35 097	99 634	106 534
Oils	36 119	36 626	11 869	35 246	14 142
Sponges, corals, shells	3 568	2 753	2 959	3 114	2 885
TOTAL	5 613 712	4 883 100	5 555 430	7 183 336	6 940 493

Crustaceans and molluscs are by far the most valuable export commodities and amounted to USD 5.3 billion in 2018. Fresh, chilled and frozen fish were the next important commodities.

Indian seafood exports are very much directed towards the large world markets: the USA, China, Japan, and the EU. However, there are also exports to neighbouring countries in Asia.

Table 5: India exports by destination 2019

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
USA	2 159 743	17 251	137	2 177 131	33.9 %
China	1 378 029	1 380	5 392	1 384 801	21.5 %
Japan	419 048	5 226	1 816	426 090	6.6 %
Vietnam	318 902	53	34 787	353 742	5.5 %
Thailand	219 200	0	5 774	224 974	3.5 %
UAE	194 393	257	18	194 668	3.0 %
Spain	153 741	4 787	184	158 712	2.5 %
Italy	134 403	1 389	657	136 449	2.1 %
UK	129 046	2 118	0	131 164	2.0 %

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FshStatJ. Consequently, figures from the two sources may differ somewhat.

Belgium	111 909	2 638	0	114 547	1.8 %
Canada	96 247	1 419	32	97 698	1.5 %
Russian Federation	96 114	0	0	96 114	1.5 %
Netherlands	92 972	1 642	0	94 614	1.5 %
France	82 077	141	0	82 218	1.3 %
Hong Kong	77 131	488	28	77 647	1.2 %
Taiwan	66 735	6	3 985	70 726	1.1 %
Portugal	51 840	0	0	51 840	0.8 %
South Korea	36 517	2 379	0	38 896	0.6 %
South Africa	13 386	0	0	13 386	0.2 %
Bangladesh	27 993	0	16 714	44 707	0.7 %
Saudi Arabia	12 048	36	6 524	18 608	0.3 %
Others	428 930	4 479	3 923	437 332	6.8 %
TOTAL	6 300 404	45 689	79 971	6 426 064	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.2. Imports

India's imports of seafood have increased over the years, and in 2018 amounted to 54 873 tonnes with a value of USD 153 million. The most important import commodities were live, fresh and chilled crustaceans, fresh chilled or frozen fish, and fishmeal.

The most important suppliers of seafood to the Indian market were Bangladesh, Vietnam and the USA. But India is also importing from neighbouring countries in South and Southeast Asia. Surprisingly, China is a relatively small supplier of seafoods to India, accounting for only 1.0% of the total import value in 2018.

Table 6: Imports of seafood commodities – India

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	16 269	16 717	11 272	10 670	10 919
Crustaceans & Molluscs, live, fresh, chilled, etc.	13 039	14 989	17 082	28 517	43 839
Crustaceans and molluscs, prepared or preserved	373	531	441	988	1 083
Fish, dried, salted, or smoked	4 457	3 802	3 689	3 053	2 769
Fish, fresh, chilled or frozen	40 813	45 406	42 628	44 822	52 055
Fish, prepared or preserved	374	226	388	822	510
Inedible	-	-	27	-	4 424
Meals	2 354	10 602	29 272	9 172	24 892
Oils	2 441	3 439	4 217	7 302	5 711
Sponges, corals, shells	6 459	7 293	5 700	8 386	6 806
TOTAL	86 579	103 005	114 716	113 732	008

Table 7: India imports by origin 2019

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS1604	HS 2301	TOTAL	%
Bangladesh	24 854	0	0	24 854	18.9 %
Vietnam	20 085	0	0	20 085	15.3 %
USA	19 435	3	71	19 509	14.8 %
Myanmar	9 748	0	0	9 748	7.4 %
Oman	4 010	0	7 105	11 115	8.4 %
Ecuador	3 117	0	0	3 117	2.4 %
UK	3 000	0	0	3 000	2.3 %
Norway	2 889	0	2 706	5 595	4.3 %
Indonesia	2 558	92	0	2 650	2.0 %
Thailand	2 269	283	0	2 552	1.9 %
Sri Lanka	739	0	0	739	0.6 %
Spain	250	0	0	250	0.2 %
China	1 333	0	18	1 351	1.0 %
Belgium	504	0	0	504	0.4 %
UAE	396	0	1 824	2 220	1.7 %
Seychelles	0	0	1 434	1 434	1.1 %
Peru	0	0	1 055	1 055	0.8 %
Philippines	5	0	1 018	1 023	0.8 %
Japan	1 263	96	0	1 359	1.0 %
Libya	0	168	0	168	0.1 %
Others	16 651	370	3 794	20 815	15.8 %
TOTAL	111 843	748	19 025	131 616	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.3. Trade balance

India has a positive trade balance both in terms of volume and value. The net surplus in India's international seafood trade in 2018 amounted to no less than USD 6.8 billion.

Table 8: India seafood trade balance 2018

Volume in tonnes; value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	387	553	-166	6 746	10 919	-4 173
Crustaceans & Molluscs, live, fresh, chilled, etc.	791 395	4 698	786 697	5 255 620	43 839	5 211 781
Crustaceans and molluscs, prepared or preserved	36 964	179	36 785	385 032	1 083	383 949
Fish, dried, salted, or smoked	12 233	1 377	10 856	92 668	2 769	89 899
Fish, fresh, chilled or frozen	478 053	26 312	451 741	1 033 678	52 055	981 623
Fish, prepared or preserved	15 240	135	15 105	42 086	510	41 576
Inedible	1 788	67	1 721	1 102	4 424	-3 322
Meals	88 372	18 627	69 745	106 534	24 892	81 642

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Oils	9 453	482	8 971	14 142	5 711	8 431
Sponges, corals, shells	2 223	2 443	-220	2 885	6 806	-3 921
TOTAL	1 436 108	54 873	1 381 235	6 940 493	153 008	6 787 485

FISH TRADE STUDY – COUNTRY REPORT

INDONESIA¹ (REPUBLIC OF INDONESIA)

Area	1 826 440 km ²
Population 2019 (World Bank)	273 523 615
Coastline	104 000 km
EEZ	6 159 032 km ²
Total Fish Production MT (FAO, 2018):	22 032 744 MT (incl. aquatic plants)
Total Fish Production MT (FAO, 2018):	12 668 063 MT (excl. aquatic plants)
Inland aquaculture (MT)	3 546 103
Marine aquaculture (MT)	11 226 001
Total Aquaculture (MT)	14 772 104
Inland capture fisheries (MT)	508 712
Marine capture fisheries (MT)	6 751 928
Total capture fisheries (MT)	7 260 640
Fish Exports Volume & Value (FAO, 2018)	1 106 086 MT / USD 4.7 billion
Fish Imports Volume & Value (FAO, 2018)	273 093 MT / USD 423.6 million
GDP (World Bank, 2018) / Per capita	USD 1 015.4 billion/ USD 4 420
Fish consumptions per capita	44.67 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

Indonesia is the largest archipelagic country in the world consisting of 17 504 islands and with coastlines that measure a total of over 100 000 km. The country lies strategically between two oceans, the Pacific Ocean and the Indian Ocean. With a unique geographical character, Indonesia encompasses 1 826 440 km² of land mass and 3 257 483 km² of water areas that include inland seas, bays, shelf, and other bodies of water as well as an exclusive economic zone with an area of around 6.2 million km². Indonesia is the world's fourth most populous country with a total population of 274 million in 2019.

2. Overview of the fisheries sector

The fisheries sector in Indonesia plays an important role in supporting national food security, since most of the communities are in the coastal areas and fish is one of the main components in the peoples' diet. In 2015, the country's average fish consumption was 44.67 kg/capita/year.

Fisheries production of Indonesia that comes from capture fisheries and aquaculture has increased gradually during 2011 - 2018. In 2018, the total production reached about 22.0 million tonnes (including aquatic plants). For capture fisheries (inland and marine), the production trend was steady in 2011 - 2018, while there was a steep increase in the production from aquaculture during the same period.

In Indonesia, the number of fishing boats (by type and by size) had increased from 581 845 in 2011, rising steeply to about 625 633 boats in 2014. This trend was influenced by the program of the government that provides boats to fishermen as well as the continued renewal of fishing permits. In 2015 however, the number had decreased as an effect of the moratorium on issuance of new fishing licenses which was made effective in late 2014.

Indonesia encompasses vast areas of inland waters that measure a total of around 13.85 million ha. These areas consist of river ecosystems and flood plains (12.0 million ha), lakes (1.8 million ha), and man-made lakes or reservoirs (0.05 million ha) that spread across the archipelagic islands such as Kalimantan, Sumatra, Papua, Celebes and Java, Bali and Nusa Tenggara Island (Sukadi and Kartamihardja, 1995). However, the areas that have potentials for inland capture fisheries in Indonesia have not been optimally utilized. This could be because inland capture fisheries are not as popular as marine capture fisheries, and are mostly done as side activities. Thus, information on production from inland capture fisheries is limited.

2.1. Membership in regional fisheries bodies

- Asia-Pacific Fishery Commission (APFIC)
- Commission for the Conservation of Southern Bluefin Tuna (CCSBT)
- Indian Ocean Tuna Commission (IOTC)
- Inter-American Tropical Tuna Commission (IATTC)
- Network of Aquaculture Centers in Asia-Pacific (NACA)
- Southeast Asian Fisheries Development Center (SEAFDEC)
- Western and Central Pacific Fisheries Commission (WCPFC)

2.2. Seafood production

Indonesia ranks as one of the largest seafood producers in the world, with a total production of 12.7 million tonnes (excluding aquatic plants) in 2018. Of the total production, 6.8 million tonnes came from capture fisheries, and 5.5 million tonnes from aquaculture. The aquaculture production of aquatic plants amounted to 9.3 million tonnes.

2.2.1. Capture fisheries

Of the total production in 2018 of 7.3 million tonnes, Indonesia ranked as the second largest capture fisheries nation in the world after China. As much as 43.7 % consists of pelagic species, and 21.6 % of demersal marine fish. However, shrimp and cephalopods are also important commercial species.

The country's production from marine capture fisheries showed a steady growth between 2011 and 2018.

In Indonesia marine fisheries can be grouped into two main segments: small-scale and large-scale. Furthermore, small-scale fisheries consist of two major segments: artisanal and commercial, while large-scale fisheries are basically the so-called industrial fisheries. Commercial fisheries are characterized by large vessels that employ medium-size purse seines, Danish seines and gillnets.

Being in the tropics, catches include multiple species, comprising demersal and pelagic species such as snappers, groupers, sweetlips, mackerels, scads, anchovies, tunas (mostly skipjack, yellowfin, bigeye), penaeid shrimp, squids, and other.

Table 1: Indonesia capture production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	99 009	172 016	141 048	135 152	138 279
Aquatic Plants	70 514	48 740	41 194	46 919	44 383
Cephalopods	175 391	253 840	199 191	189 248	245 458
Crustaceans	386 369	413 526	454 456	538 827	511 524
Demersal Marine Fish	1 283 492	1 331 878	1 350 569	1 654 414	1 564 922
Freshwater and Diadromous Fish	529 312	558 741	500 950	507 410	572 461
Marine Fish NEI	672 660	1 066 459	976 621	452 529	935 694
Molluscs excl. Cephalopods	68 590	71 143	66 569	67 368	72 136
Pelagic Marine Fish	3 243 912	2 822 085	2 852 824	3 191 411	3 174 742
Others	1 158	1 230	967	622	1 042
TOTAL	6 530 407	6 739 658	6 584 389	6 783 899	7 260 640

NEI = Not Elsewhere Included

2.2.2. Aquaculture

The Indonesian archipelago is excellently suited for aquaculture, for several reasons. The many islands, with their bays and inlets, give good protection against rough seas, and Indonesia is outside the monsoon belt which can create a lot of problems for other countries in the region.

An important drawback is that the infrastructure is not well developed, and many regions still rely on a fleet of sailing ships for transport. This makes it difficult to bring products from the producing regions to market.

With a total production of 14.8 million tonnes, Indonesia ranks as the second largest aquaculture producer in the world. But as much as 63.1% of the total aquaculture production consists of aquatic plants, leaving 5.5 million tonnes of fish, crustaceans and molluscs.

Table 2: Indonesia aquaculture production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	138	2 029	648	2 304	695
Aquatic Plants	10 076 992	11 269 341	11 050 301	10 547 552	9 320 298

Cephalopods	0	0	0	0	0
Crustaceans	613 892	608 610	721 165	931 752	946 220
Demersal Marine Fish	20 255	23 971	18 934	70 617	23 634
Freshwater and Diadromous Fish	3 616 267	3 704 613	4 141 121	4 474 926	4 403 919
Marine Fish NEI	3 344	3 242	18 743	27 906	3 025
Molluscs excl. Cephalopods	...	...	...	...	49 450
Pelagic Marine Fish	0	0	0	0	0
Other	44 399	37 505	51 406	63 181	24 863
TOTAL	14 375 287	15 649 311	16 002 319	16 118 238	14 772 104

NEI = Not Elsewhere Included

2.2.3. Processing

Over the years, Indonesia has built up a considerable processing industry, and in 2018, the production of processed products amounted to 2.1 million tonnes (product weight). Freezing is the most common preservation method, but traditional methods like drying, salting and smoking are also important, especially for the domestic market.

Table 3: Processed production – Indonesia

Volume in tonnes. Source: FAO FishStatJ, 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	239 261	253 757	277 131	281 755	320 675
Crustaceans and molluscs, prepared or preserved	64 402	64 901	65 916	46 512	60 145
Fish, dried, salted, or smoked	586 563	600 302	615 260	654 145	542 944
Fish, fresh, chilled or frozen	1 025 860	945 150	942 110	1 056 880	1 006 505
Fish, prepared or preserved	125 960	130 060	124 410	134 360	142 460
Meals	17 700	18 200	50 000	50 000	45 000
Oils	5 000	7 000	6 300	5 000	5 000
TOTAL	2 064 746	2 019 370	2 081 127	2 228 652	2 122 729

2.2.4. Utilization and consumption

Eighty-five percent of the fisheries production of Indonesia goes to the local market, while the rest are exported, mainly to Asian markets. Fishery products coming from small-scale fisheries are mostly distributed to local markets either for direct consumption or for processing (e.g. smoked, salted). Some fishery products are supplied to hotels, restaurants, catering services, and retail stores. Fishery products coming from medium to large-scale fisheries are generally processed into canned products (e.g. sardines) or used as raw materials for processing into export products, boiled fish products, fish bait, and fortification products.

Fish is consumed fresh, frozen, smoked and canned. Post-harvest activities range from traditional drying, salting, and smoking, to canning and more modern forms of processing (e.g. production of fish loins).

About 55 % of fish production is consumed fresh. There are severe limits to the supply of ice and availability of refrigerated storage and transport facilities, so the balance is processed and consumed as dried and salted, smoked or fermented fish. There are about 10 000 small fish processing operations, generally using traditional methods. Less than 2 % of the catch is canned. The canneries utilize pelagic species, mostly oil sardines and skipjack. Some fish, most shrimp and tuna are frozen

and exported. Only a small proportion is converted into fish oil, fishmeal and silage, that is into products for animal feed or other usages. Production of fishmeal takes place mostly in conjunction with canning of fish.

People in Sumatra, Kalimantan, and other islands generally consume inland fishery products, the majority of which are catfishes (*Pangasius hypophthalmus*), milkfish (*Chanos chanos*), carps, some freshwater prawns as well as endemic fishes.

2.3. International trade²

Indonesia is an important player on the international market for seafood and ranks as one of the world's largest seafood exporters.

The country's quantity and value of exported fishery products showed an increasing trend during 2014 - 2018 but with a slight fall in 2015.

2.3.1. Exports

The most valuable export products include shrimp and molluscs, as well as fresh and frozen fish. Total exports in 2018 amounted to USD 4.7 billion, placing the country fifteenth on the list of the world's largest seafood exporters.

Indonesian exports target the big international markets, and USA, China and Japan top the list of the most important markets. Together, these three markets account for almost 64 % of Indonesia's total seafood exports.

But Asia is the dominant market area for Indonesian fishery products and the major destinations include China, Thailand, Japan, Malaysia, Singapore, Taiwan, and South Korea.

Table 4: Exports of seafood commodities – Indonesia

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	241 040	170 196	132 917	169 265	223 311
Crustaceans & Molluscs, live, fresh, chilled, etc.	1 997 624	1 599 529	1 816 015	2 102 235	2 148 794
Crustaceans and molluscs, prepared or preserved	732 832	600 955	627 762	520 463	698 126
Fish, dried, salted, or smoked	77 809	60 793	62 189	68 153	78 728
Fish, fresh, chilled or frozen	1 030 784	992 022	1 015 701	1 096 713	1 079 163
Fish, prepared or preserved	365 413	338 839	327 983	405 734	456 126
Inedible	4 085	4 813	3 992	3 039	5 471
Meals	4 110	6 846	6 546	1 322	3 092
Oils	2 854	5 455	5 549	2 447	1 052
Sponges, corals, shells	11 013	9 347	10 702	13 857	9 279
TOTAL	4 467 564	3 788 795	4 009 356	4 383 228	4 703 142

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FshStatJ. Consequently, figures from the two sources may differ somewhat.

Table 5: Indonesia exports by destination 2019

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
USA	1 203 654	64 482	0	1 268 136	33.8 %
China	589 249	1 374	0	590 623	15.7 %
Japan	459 209	78 768	4 484	542 461	14.4 %
Vietnam	144 935	799	7 168	152 902	4.1 %
Malaysia	128 166	3 955	627	132 748	3.5 %
Taiwan	124 935	5 343	213	130 491	3.5 %
Hong Kong	84 298	817	0	85 115	2.3 %
Singapore	82 054	2 806	0	84 860	2.3 %
Thailand	78 905	50 415	0	129 320	3.4 %
South Korea	55 032	4 722	4	59 758	1.6 %
Italy	50 009	46 832	0	96 841	2.6 %
Saudi Arabia	3 816	66 916	0	70 732	1.9 %
Australia	32 592	26 720	0	59 312	1.6 %
UK	15 506	15 980	0	31 486	0.8 %
Spain	7 399	11 967	0	19 366	0.5 %
Others	209 043	91 402	199	300 644	8.0 %
TOTAL	3 268 802	473 298	12 695	3 754 795	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates.

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.2. Imports

With a large domestic production of seafood, Indonesia does not need to import large quantities. In 2018, total imports amounted to 273 000 tonnes worth USD 423.7 million. The most important import products include fresh, chilled and frozen fish and prepared or preserved crustaceans.

The most important suppliers of seafood to Indonesia again include the large seafood nations: USA, China and Norway.

In general, the country's import quantity and value of fish product by major commodities between 2014 and 2018 decreased steadily. Fishmeal imports also showed a declining trend during this period, and went from 101 372 tonnes in 2014 to 67 564 tonnes in 2018.

Table 6: Imports of seafood commodities – Indonesia

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	2 176	4 235	1 048	2 869	11 253
Crustaceans & Molluscs, live, fresh, chilled, etc.	71 932	58 147	77 438	79 952	89 209
Crustaceans and molluscs, prepared or preserved	3 248	2 746	4 835	2 529	2 204
Fish, dried, salted, or smoked	1 478	1 024	1 116	941	1 492
Fish, fresh, chilled or frozen	136 950	136 679	156 366	197 845	200 079
Fish, prepared or preserved	22 717	21 675	27 860	23 053	21 708
Inedible	6 107	3 754	4 153	3 302	6 761
Meals	90 513	75 614	74 966	67 290	67 564
Oils	20 004	14 336	17 415	19 722	22 950

Commodity	2014	2015	2016	2017	2018
Sponges, corals, shells	404	405	639	504	444
TOTAL	355 529	318 615	365 836	398 007	423 664

Table 7: Indonesia imports by origin 2019

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
China	61 480	2 187	198	63 865	10.2 %
Norway	45 787	6	1 971	47 764	7.7 %
Canada	31 159	0	5 182	36 341	5.8 %
USA	21 554	260	196 831	218 645	35.1 %
Seychelles	15 169	0	229	15 398	2.5 %
Argentina	14 283	0	0	14 283	2.3 %
Japan	12 715	357	111	13 183	2.1 %
Russia	9 907	0	0	9 907	1.6 %
Chile	9 346	0	1 117	10 463	1.7 %
Australia	7 610	0	41	7 651	1.2 %
Taiwan	6 824	63	30	6 917	1.1 %
Malaysia	6 516	9 598	330	16 444	2.6 %
Thailand	499	3 611	6 019	10 129	1.6 %
Singapore	529	1 267	0	1 796	0.3 %
South Korea	722	405	11 424	12 551	2.0 %
Philippines	1 011	706	0	1 717	0.3 %
New Zealand	555	0	36 955	37 510	6.0 %
Italy	0	47	18 656	18 703	3.0 %
Netherlands	749	0	8 556	9 305	1.5 %
Others	52 695	1 304	16 870	70 869	11.4 %
TOTAL	299 110	19 811	304 520	623 441	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates.

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs.

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.3. Trade balance

Indonesia has a large surplus in its trade balance with seafood. The only commodities which show a deficit are fish meal and fish oil, which go into the fish feed production in the country.

Table 8: Indonesia seafood trade balance 2018

Volume in tonnes; value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	202 651	835	201 816	223 311	11 253	212 058
Crustaceans & Molluscs, live, fresh, chilled, etc.	340 615	9 776	330 839	2 148 794	89 209	2 059 585
Crustaceans and molluscs, prepared or preserved	60 047	416	59 631	698 126	2 204	695 922
Fish, dried, salted, or smoked	11 104	320	10 784	78 728	1 492	77 236
Fish, fresh, chilled or frozen	372 616	139 107	233 509	1 079 163	200 079	879 084

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Fish, prepared or preserved	101 372	9 164	92 208	456 126	21 708	434 418
Inedible	2 179	418	1 761	5 471	6 761	-1 290
Meals	4 437	99 192	-94 755	3 092	67 564	-64 472
Oils	207	13 052	-12 845	1 052	22 950	-21 898
Sponges, corals, shells	10 858	813	10 045	9 279	444	8 835
TOTAL	1 106 086	273 093	832 993	4 703 142	423 664	4 279 478

FISH TRADE STUDY – COUNTRY REPORT

IRAN¹ (ISLAMIC REPUBLIC OF IRAN)

Area	1 636 000 km ²
Population 2019 (World Bank)	83 992 949
Coastline	2 700 km
EEZ	168 718 km ²
Total Fish Production MT (FAO, 2018):	1 268 590 MT (incl. aquatic plants)
Total Fish Production MT (FAO, 2018):	1 268 590 MT (excl. aquatic plants)
Inland aquaculture (MT)	369 959
Marine aquaculture (MT)	69 759
Total Aquaculture (MT)	439 718
Inland capture fisheries (MT)	105 624
Marine capture fisheries (MT)	723 248
Total capture fisheries (MT)	828 872
Fish Exports Volume & Value (FAO, 2018)	119 881 MT / USD 386.5 million
Fish Imports Volume & Value (FAO, 2018)	34 751 MT / USD 89.9 million
GDP (World Bank, 2018)/Per capita	USD 454.0 billion / USD 5 628
Fish consumption per capita (FAO 2018)	11.73 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

Iran is located in Western Asia. It borders on Armenia and Azerbaijan to the northwest, the Caspian Sea to the north, Turkmenistan to the northeast, to Afghanistan to the east, Turkey and Iraq to the west, and the Persian Gulf and the Gulf of Oman to the south. Iran covers an area of 1 648 195 km² with a population of 84 million. It is the second largest country in the Middle East, and its capital and largest city is Teheran.

2. Overview of the fisheries sector

Iranian fisheries include the Caspian Sea, the Southern Seas (the Persian Gulf, the Oman Sea and the Indian Ocean), inland water fisheries and aquaculture. The most important fish species in the Caspian Sea are kutum (an endemic roach), grey mullets, sturgeon and kilka (brackish water anchovies). Tuna is the dominant species in the Southern Seas. Chinese carps and rainbow trout are the most important fish in aquaculture and freshwater fishery.

The catch composition of the Caspian Sea includes especially bony fish species and sturgeons. These fish species are also based on the artificial propagation to produce fry and fingerling for restocking. In recent years, there has also been an increase in the aquaculture production and fishery industry in Iran.

The total number of people employed in fisheries has risen from 9 200 in 1993 to 186 900 by 2010, of which the number directly employed in aquaculture was 35 900.

2.1. Membership in regional fisheries bodies

- Indian Ocean Tuna Commission (IOTC)
- Network of Aquaculture Centers in Asia-Pacific (NACA)
- Regional Commission for Fisheries (RECOFI)

The Iran Fisheries Organization is responsible for Iran's fisheries and aquaculture development. The Iran Fisheries Organization represents Iran in the following regional organizations:

1. RECOFI – this is a regional committee for fisheries in the Persian Gulf and Gulf of Oman. The RECOFI is responsible for regional fisheries management and a scheme for collaboration and coordination of 7 member states under FAO Article XIV rules and regulations.
2. NACA – it is the network for aquaculture in Asia and Pacific. Iran is member of this network for aquaculture development and collaboration.
3. INFOFISH – Iran is member of INFOFISH for marketing collaboration and information transfer.
4. IOTC – the Indian Ocean Tuna Commission, under FAO's Article XIV rules and regulations, is a regional fisheries management organisation (RFMO) for tuna fisheries in the Indian Ocean. Iran participates fully in this Commission.
5. Caspian Sea Commission for Aquatic Resources - a Commission among five coastal states for collaboration and coordination in fisheries management.

2.2. Seafood production

In general, the fisheries of Iran can be divided into two major regions: the northern region, bordering on the Caspian Sea, is a freshwater/brackish fishing region. The southern region, bordering on the Persian Gulf and the Gulf of Oman, is a saltwater fishery.

2.2.1. Capture fisheries

Iran's capture production consists of mainly three species groups: marine pelagic fish, demersal marine fish and freshwater and diadromous fish. Total landings in 2018 reached 828 872 tonnes. Landings have shown a steady growth over recent years.

The largest species groups are marine pelagic fish and marine demersal fish.

Table 1: Iran capture production.

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	510	1 523	2 405	1 807
Aquatic Plants	0	0	0	0	0
Cephalopods	6 177	3 343	3 856	4 083	3 855
Crustaceans	10 469	11 413	12 943	13 645	11 566
Demersal Marine Fish	108 980	124 860	159 374	170 922	193 572
Freshwater and Diadromous Fish	92 210	88 871	94 160	96 722	103 228
Marine Fish NEI	25 917	24 014	22 735	23 983	30 933
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	376 674	378 111	395 131	470 720	483 911
Other	0	0	0	0	0
TOTAL	620 427	631 122	689 722	782 480	828 872

NEI = Not Elsewhere Included

2.2.2. Aquaculture

Extensive culture technologies are used in inland lakes, dams and agricultural reservoirs, especially along Iran's Caspian coast. These culture systems rely on stocking of fish financed by the government and are undertaken with fishermen's participation.

Since the first hatchery was established in 1968, significant progress has been made in aquaculture. The production of farmed fish has risen constantly since 1985, and expanded rapidly thanks to suitable environmental conditions and the country's climate. Rivers, natural lakes, artificial reservoirs, irrigation canals, aqueducts and ponds are used for fish culture.

Iran's aquaculture production consists mainly of freshwater and diadromous species, such as tilapia, European seabass, and seabream. Total production in 2018 came to 439 718 tonnes. Aquaculture production has shown an increase over the years, and the Government is actively promoting aquaculture.

The southern coast of the Caspian Sea is part of northern Iran. The coast runs for about 900 km, and is the site for tourism, fisheries, aquaculture and transportation. Due to a favourable climate and a vast forest area, tourism is very popular in this region. Another characteristic of the southern coast of the Caspian Sea is its high population density along the coastline.

Table 2: Iran aquaculture production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	0	0	0	0	0
Cephalopods	0	0	0	0	0
Crustaceans	22 545	17 886	21 400	32 384	47 896

Species group	2014	2015	2016	2017	2018
Demersal Marine Fish	0	0	0	0	7 800
Freshwater and Diadromous Fish	297 506	325 767	366 567	366 453	369 922
Marine Fish NEI	123	2 465	10 162	14 050	14 100
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	0	0	0	0	0
Other	0	0	0	0	0
TOTAL	320 174	346 118	398 129	412 887	439 718

NEI = Not Elsewhere Included

2.2.3. Processing

Shrimp processing plants have been built as the supply of shrimps from capture fisheries and aquaculture has grown and the export trade developed. Most of the shrimp processing plants have been certified as safe suppliers of shrimps to the EU.

The processing industry is mainly focused on prepared and preserved fish.

Table 3: Processed production – Iran

Volume in tonnes. Source: FAO FishStatJ, 2020

Commodity	2014	2015	2016	2017	2018
Fish, prepared or preserved	95 685	197 465	199 802	302 698	302 081
Meals	65 701	60 522	36 100	66 163	71 245
TOTAL	161 386	257 987	235 902	368 861	373 326

2.2.4. Consumption

In Iran, fish consumption per person was 11.73 kg in 2017. Although fish consumption is increasing from year to year, Iran is still a little behind the world average in fish consumption.

Until recently residents in the interior and urban communities ate little fish, and preferred other sources of animal protein. This is slowly changing. During the past decades processing of fish has been growing steadily, particularly canning of fish.

2.3. International trade²

2.3.1. Exports

In more recent years, Iran has exported about 120 000 tonnes of seafood worth around USD 400 million. By far the largest commodity has been fresh, chilled and frozen fish, but in recent years, live, fresh and chilled crustaceans (shrimp) have become an important commodity and in 2018 accounted for almost 29 % of the total export value.

Iran's exports are targeting the Far East (Hong Kong, Vietnam, Thailand, and China) and neighbouring countries such as Iraq, UAE, and Kuwait.

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FishStatJ. Consequently, figures from the two sources may differ somewhat.

Table 3: Exports of seafood commodities – Iran

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	0	0	7	12	17
Crustaceans & Molluscs, live, fresh, chilled, etc.	61 768	60 472	87 520	136 366	110 853
Crustaceans and molluscs, prepared or preserved	16	0	0	0	24
Fish, dried, salted, or smoked	118	236	630	693	1 511
Fish, fresh, chilled or frozen	182 346	144 337	253 542	267 000	256 651
Fish, prepared or preserved	12 329	7 204	8 344	10 163	17 380
Inedible	0	0	0	0	0
Meals	0	24	5	55	48
Oils	0	0	0	2	0
Sponges, corals, shells	2	2	0	0	0
TOTAL	256 579	212 275	350 048	414 291	386 484

Table 4: Iran exports by destination 2018

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Hong Kong	96 997	2	0	96 999	28.9 %
Iraq	65 968	10 214	0	76 182	22.7 %
Vietnam	41 888	0	0	41 888	12.5 %
UAE	29 437	1 091	0	30 528	9.1 %
Thailand	28 885	0	0	28 885	8.6 %
Kuwait	26 382	72	0	26 454	7.9 %
China	5 396	0	0	5 396	1.6 %
Qatar	4 252	142	0	4 394	1.3 %
Russia	2 658	17	0	2 675	0.8 %
Sri Lanka	2 482	0	0	2 482	0.7 %
Oman	2 394	170	0	2 564	0.8 %
Malaysia	1 902	0	0	1 902	0.6 %
Lebanon	1 655	809	0	2 464	0.7 %
France	881	12	0	893	0.3 %
Spain	527	0	0	527	0.2 %
Afghanistan	8	4 708	6	4 722	1.4 %
Azerbaijan	218	958	5	1 181	0.4 %
Pakistan	87	585	0	672	0.2 %
Turkmenistan	17	349	0	366	0.1 %
Turkey	36		2 237	2 273	0.7 %
Others	1 718	380	12	2 110	0.6 %
TOTAL	313 788	19 509	2 260	335 557	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates.

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs.

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.2. Imports

Iran's imports of seafood have been declining for a number of years, and in 2018 fell to 34 750 tonnes worth just under USD 90 million. The main import commodity has been fresh, chilled and frozen fish.

The main suppliers have been China, South Korea, Ghana and the Seychelles.

Table 5: Imports of seafood commodities – Iran

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	2 141	1 239	1 711	1 856	1 261
Crustaceans & Molluscs, live, fresh, chilled, etc.	16	0	178	119	231
Crustaceans and molluscs, prepared or preserved	0	0	0	0	0
Fish, dried, salted, or smoked	0	0	89	103	0
Fish, fresh, chilled or frozen	166 713	146 687	180 285	137 628	85 975
Fish, prepared or preserved	3	0	82	43	1
Inedible	0	0	0	4	0
Meals	2 361	468	141	526	0
Oils	2 391	2 469	1 822	2 374	2 411
Sponges, corals, shells	0	0	0	0	0
TOTAL	173 625	150 863	184 308	142 653	89 879

Table 6: Iran imports by origin 2018

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
China	18 768	0	0	18 768	33.1 %
South Korea	9 881	0	0	9 881	17.4 %
Ghana	9 522	0	0	9 522	16.8 %
Seychelles	5 221	0	0	5 221	9.2 %
India	3 249	0	0	3 249	5.7 %
France	2 736	0	0	2 736	4.8 %
Spain	2 527	0	0	2 527	4.5 %
Norway	1 727	0	0	1 727	3.0 %
Australia	864	0	0	864	1.5 %
Indonesia	360	0	0	360	0.6 %
Poland	296	0	0	296	0.5 %
Malaysia	247	0	0	247	0.4 %
Thailand	234	1	0	235	0.4 %
South Africa	185	0	0	185	0.3 %
USA	183	0	0	183	0.3 %
Denmark	135	0	0	135	0.2 %
Vietnam	127	0	0	127	0.2 %
New Zealand	105	0	0	105	0.2 %
UAE	100	0	0	100	0.2 %
Others	179	0	0	179	0.3 %
TOTAL	56 646	1	0	56 647	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates.

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs.

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.3. Trade balance

Because of the very limited and declining imports and the slightly increasing exports, Iran shows a surplus in the trade balance for seafood.

Table 8: Iran seafood trade balance 2018

Volume in tonnes; value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	39	120	-81	17	120	-103
Crustaceans & Molluscs, live, fresh, chilled, etc.	27 100	198	26 902	110 853	198	110 655
Crustaceans and molluscs, prepared or preserved	10	0	10	24	0	24
Fish, dried, salted, or smoked	931	0	931	1 511	0	1 511
Fish, fresh, chilled or frozen	88 528	34 250	54 278	256 651	34 250	222 401
Fish, prepared or preserved	3 106	0	3 106	17 380	0	17 380
Inedible	0	0	0	0	0	0
Meals	167	0	167	48	0	48
Oils	0	183	-183	0	183	-183
Sponges, corals, shells	0	0	0	0	0	0
TOTAL	119 881	34 751	85 130	386 484	34 751	351 733

FISH TRADE STUDY – COUNTRY REPORT

KENYA¹ (THE REPUBLIC OF KENYA)

Area	569 250 km ²
Population 2019 (World Bank)	53 771 296
Coastline (continental coastline)	640 km
EEZ	116 942 km ²
Total Fish Production MT (FAO, 2018):	138 524 MT
Inland aquaculture (MT)	15 120
Marine aquaculture (MT)	404
Total Aquaculture (MT)	15 524
Inland capture fisheries (MT)	98 000
Marine capture fisheries (MT)	25 000
Total capture fisheries (MT)	123 000
Fish Exports Volume & Value (FAO, 2018)	7 624 MT / USD 31.7 million
Fish Imports Volume & Value (FAO, 2018)	27 828 MT / USD 29.8 million
GDP (World Bank, 2018) / Per capita	USD 79.3 billion / USD 1 578
Fish consumption per capita (2017)	3.98 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

The Republic of Kenya, with a total land surface area of about 570 000 km², sits astride the equator. It is blessed with numerous aquatic resources of immense ecological value indicative of a productive and valuable ecosystem. Its geographic and climatic regions cover a portion of the Indian Ocean coastline, swamps, wetlands, a part of Lake Victoria, which is the largest freshwater lake in Africa and the second largest lake in the world, and many large rivers. Its varied habitats, including the deep oceanic waters, show a rich biological diversity.

2. Overview of the fisheries sector

The fisheries sector generates employment for more than 2 million Kenyans through fishing, gear and craft repair, fish processing and distribution, and other related activities.

As at 2008, 80 000 people were directly engaged as fishers and fish farmers while the sector provided livelihoods for about 2.3 million Kenyans mainly involved in fish processing and trade.

2.1. Membership in regional fisheries bodies

- Committee on Inland Fisheries and Aquaculture of Africa (CIFAA)
- Indian Ocean Tuna Commission (IOTC)
- International Whaling Commission (IWC)
- Lake Victoria Fisheries Organization (LVFO)
- Southwest Indian Ocean Fisheries Commission (SWIOFC)

2.2. Seafood production

A prominent feature of Kenya's rich heritage is its over 600 kilometres of coastline on the Indian Ocean, with productive ecosystems, which play a highly significant role in the economic and social wellbeing of the people. The coastline comprises 12 nautical miles of territorial waters and a 200-nautical mile Exclusive Economic Zone (EEZ) with a total area of 116 942 km². Kenya has important, well-defined and well-developed marine and freshwater fisheries.

Species caught in Kenya's marine waters can be categorized as demersal, pelagic, sharks and rays, crustaceans, molluscs and deep sea/big-game fish. Fishing is mainly artisanal, subsistence and inshore. The Kenyan marine waters host a large variety of fish species, including pelagics, such as kingfish, barracuda, mullets, queenfish, cavalla jacks, little mackerels, barracudas, milkfish, sailfish, bonitos, tunas, dolphins and mixed pelagics; demersal species such as rabbitfish, snapper, rock cod, scavenger, parrotfish, sturgeon, unicorn fish, grunter, pouter, blackskin, goatfish, steaker and mixed demersals; crustaceans and invertebrates such as prawns, lobsters, crabs, and sea-cucumbers, etc; and molluscs such as squids and octopus.

2.2.1. Capture fisheries

Kenya's marine fisheries can be classified into two subsectors: the coastal artisanal fishery, and the Exclusive Economic Zone (EEZ) fishery. A basic feature of the coastal fishery is the largely subsistence and artisanal nature of the fishers who operate small craft propelled by wind sails and manual paddles. This fishery mainly targets crustaceans, molluscs, rock cod, beche-de-mer, dry shark fins, marine shells, livers and roes and other sea products. The EEZ fishery, on the other hand, is characterized by distant-water fishing vessels which mainly employ purse-seine and long line in the exploitation of tuna.

Kenya has about 570 000 km² total land surface area, of which inland waters cover 13 400 km². It has many seasonal and perennial rivers, most of which empty into the western Indian Ocean basin. Of these, the two major perennial rivers are Tana River and Sabaki River. Tana River, stretching approximately 850 km in length with a catchment area of 95 000 km², is the longest river. Its regular replenishment is accomplished by a number of tributaries with headwaters on Mount Kenya.

The most productive fishery in Kenya is the Lake Victoria fishery, where valuable species such as Nile perch and tilapia are caught.

Table 1: Kenya capture fisheries by major commodities

Volume in tonnes. Source: FAO FishStatJ 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	24	171	6	13	15
Aquatic Plants	0	0	0	0	0
Cephalopods	588	757	2 197	1 971	2 085
Crustaceans	582	840	797	702	745
Demersal Marine Fish	5 303	4 311	7 698	12 478	13 245
Freshwater and Diadromous Fish	159 185	156 444	127 214	98 579	98 000
Marine Fish NEI	527	249	0	1 074	1 135
Molluscs excl. Cephalopods	35	24	0	0	0
Pelagic Marine Fish	2 723	2 385	4 035	6 833	7 580
Others	194	186	186	186	195
TOTAL	169 161	165 367	142 133	121 836	123 000

NEI = Not Elsewhere Included

2.2.2. Aquaculture

Aquaculture has great potential in Kenya, given its numerous aquatic resources. The country has over 1.14 million hectares of potential area suitable for fish farming.

Because of insufficient extension services, shortage of quality fish seed, and poor technical skills especially amongst extension personnel, the number of productive ponds decreased sharply in the 1970s. It was not until the mid-1990s that a renewed interest in fish farming developed as a result of the renovation of many government fish farms, intensive training of fisheries extension workers and establishment of research programmes.

Fresh water aquaculture dominates fish farming in Kenya and may be classified into:

- Coldwater culture, involving the cultivation of rainbow trout (*Oncorhynchus mykiss*) in highland areas, and
- Warm water culture, involving the cultivation of various tilapia species, the African catfish (*Clarias gariepinus*), common carp (*Cyprinus carpio*) and a variety of ornamental fishes in low land regions of the country.

Kenya's aquaculture production has declined in recent years, from 24 500 tonnes in 2014 to 15 500 tonnes in 2018. Practically all of this production came from Lake Victoria.

Table 2: Kenya aquaculture production by major commodities

Volume in tonnes. Source: FAO FishStatJ 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	400	400	400	400	400
Cephalopods	0	0	0	0	0
Crustaceans	0	0	0	0	0
Demersal Marine Fish	0	0	0	0	0
Freshwater and Diadromous Fish	24 098	18 658	14 957	12 360	15 124

Species group	2014	2015	2016	2017	2018
Marine Fish NEI	0	0	0	0	0
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	0	0	0	0	0
Other	0	0	0	0	0
TOTAL	24 498	19 058	15 357	12 760	24

NEI = Not Elsewhere Included

2.2.3. Processing

There is some processing going on both on the shores of Lake Victoria and on the marine coast of the Indian Ocean. But production of processed products has declined in recent years.

Table 3: Kenya processed production

Volume in tonnes. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	381	375	840	778	780
Fish, dried, salted, or smoked	18 602	18 324	14 350	10 650	11 000
Fish, fresh, chilled or frozen	25 775	25 390	17 800	12 000	12 550
TOTAL	44 758	44 089	32 990	23 428	24 330

2.3. International trade²

2.3.1. Exports

Exports of seafood products have fluctuated between 20 000 and 50 000 tonnes. The decline experienced in 2016 – 2017 was probably due to problems with the Nile perch fishery on Lake Victoria.

In 2018, Kenya exported 7 624 tonnes of seafood worth USD 31.7 million. Most of this went to the EU, Uganda and Israel.

Table 4: Kenya exports by major commodities

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	6	6	0	0	7
Crustaceans & Molluscs, live, fresh, chilled, etc.	3 069	2 978	5 080	6 199	9 058
Crustaceans and molluscs, prepared or preserved	17	26	0	8	8
Fish, dried, salted, or smoked	798	1 184	1 096	1 726	5 045
Fish, fresh, chilled or frozen	29 427	23 704	12 086	12 607	15 246
Fish, prepared or preserved	14 564	5 344	82	9	8
Inedible	1 176	3 874	1 381	3 346	2 106
Meals	320	452	0	4	0
Oils	0	0	0	26	1

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FishStatJ. Consequently, figures from the two sources may differ somewhat.

Commodity	2014	2015	2016	2017	2018
Sponges, corals, shells	262	129	259	228	174
TOTAL	49 639	37 697	19 984	24 153	31 653

Table 5: Kenya exports by destination 2019

Value in USD 1000. Source: ITC TradeMaps

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Italy	5 696	0	0	5 696	17.2 %
Uganda	5 630	0	0	5 630	17.0 %
Portugal	3 605	0	0	3 605	10.9 %
Spain	2 948	0	0	2 948	8.9 %
Israel	2 770	0	0	2 770	8.4 %
Netherlands	2 727	0	0	2 727	8.2 %
Hong Kong	1 464	0	0	1 464	4.4 %
China	1 396	0	0	1 396	4.2 %
UAE	1 238	0	0	1 238	3.7 %
Myanmar	1 000	0	0	1 000	3.0 %
Greece	594	0	0	594	1.8 %
Congo DRC	528	0	0	528	1.6 %
Colombia	486	0	0	486	1.5 %
Others	3 065	5	0	3 070	9.3 %
Total	33 147	5	0	33 152	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates.

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs.

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other.

2.3.2. Imports

Kenya's seafood imports have increased moderately in recent years and reached 27 828 tonnes worth USD 29.8 million in 2018. The largest commodity group was fresh, chilled or frozen fish. The largest supplier by far was China, which accounted for no less than 78.3% of the total import value. A lot of this consisted of cheap frozen tilapia. Tanzania and Uganda accounted for 6.6% and 4.4% of Kenya's imports.

Table 6: Kenya imports by major commodities

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	81	53	51	43	138
Crustaceans & Molluscs, live, fresh, chilled, etc.	787	856	455	469	406
Crustaceans and molluscs, prepared or preserved	4	12	1	168	171
Fish, dried, salted, or smoked	35	34	29	29	22
Fish, fresh, chilled or frozen	19 948	17 710	19 997	23 464	28 225
Fish, prepared or preserved	902	974	574	514	542
Inedible	517	339	122	26	24
Meals	560	589	437	222	248
Oils	48	68	1 751	114	70

Commodity	2014	2015	2016	2017	2018
Sponges, corals, shells	2	5	0	0	0
TOTAL	22 884	20 640	23 417	25 049	29 846

Table 7: Kenya imports by origin 2019

Value in USD 1000. Source: ITC TradeMaps

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
China	21 672	58	0	21 730	78.3 %
Tanzania	1 766	0	63	1 829	6.6 %
Uganda	1 210	0	0	1 210	4.4 %
Taiwan	425	0	0	425	1.5 %
Norway	289	0	0	289	1.0 %
Vietnam	189	0	0	189	0.7 %
Oman	116	0	0	116	0.4 %
France	73	7	0	80	0.3 %
Pakistan	46	0	0	46	0.2 %
South Korea	44	0	0	44	0.2 %
UAE	41	10	0	51	0.2 %
Somalia	35	0	0	35	0.1 %
India	31	0	0	31	0.1 %
Seychelles	25	0	0	25	0.1 %
Thailand	13	993	0	1 006	3.6 %
Indonesia	0	99	0	99	0.4 %
South Africa	3	44	0	47	0.2 %
Italy	8	34	0	42	0.2 %
Switzerland	0	16	0	16	0.1 %
UK	0	13	0	13	0.0 %
Côte d'Ivoire	0	0	223	223	0.8 %
Mauritius	0	0	106	106	0.4 %
Singapore	3	0	23	26	0.1 %
Others	25	11	23	59	0.2 %
TOTAL	26 014	1 285	438	27 737	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates.

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs.

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.3. Trade balance

Kenya has a slight surplus in the trade balance with seafood. There is a significant deficit with regard to fresh, chilled or frozen fish, and a minor deficit in fish oil and fish meal.

Table 8: Trade balance – Kenya

Volume in tonnes; value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	33	13	20	7	138	-131
Crustaceans & Molluscs, live, fresh, chilled, etc.	1 720	54	1 666	9 058	406	8 652
Crustaceans and molluscs, prepared or preserved	3	26	-23	8	171	-163
Fish, dried, salted, or smoked	1 462	3	1 459	5 045	22	5 023
Fish, fresh, chilled or frozen	4 066	26 110	-22 044	15 246	28 225	-12 979
Fish, prepared or preserved	1	186	-185	8	542	-534
Inedible	50	240	-190	2 106	24	2 082
Meals	0	1 189	-1 189	0	248	-248
Oils	0	7	-7	1	70	-69
Sponges, corals, shells	289	0	289	174	0	174
TOTAL	7 624	27 828	-20 204	31 653	29 846	1 807

FISH TRADE STUDY – COUNTRY REPORT

MADAGASCAR¹ (REPUBLIC OF MADAGASCAR)

Area	581 540 km ²
Population 2019 (World Bank)	53 771 296
Coastline	4 828 km
EEZ	1 225 259 km ²
Total Fish Production MT (FAO, 2018):	142 326 MT (incl. aquatic plants)
Total Fish Production MT (FAO, 2018):	136 189 MT (excl. aquatic plants)
Inland aquaculture (MT)	2 424
Marine aquaculture (MT)	10 334
Total Aquaculture (MT)	12 758
Inland capture fisheries (MT)	17 870
Marine capture fisheries (MT)	111 698
Total capture fisheries (MT)	129 568
Fish Exports Volume & Value (FAO, 2018)	24 261 MT / USD 151.3 million
Fish Imports Volume & Value (FAO, 2018)	8 255 MT/ USD 16.4 million
GDP (World Bank, 2018) / Per capita	USD 11.5 billion / USD 450
Fish consumption per capita (2018)	5.29 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

Madagascar, previously known as the Malagasy Republic, is an island country in the Indian Ocean, approximately 400 kilometres (250 miles) off the coast of East Africa. Madagascar is the world's second largest island country. The nation comprises the island of Madagascar (the fourth-largest island in the world) and numerous smaller peripheral islands. Following the prehistoric breakup of the Gondwana supercontinent, Madagascar split from the Indian subcontinent around 88 million years ago, allowing native plants and animals to evolve in relative isolation. Consequently, Madagascar is a biodiversity hotspot; over 90% of its wildlife is found nowhere else on earth. The island's diverse ecosystems and unique wildlife are threatened by the encroachment of the rapidly growing human population and other environmental threats.

2. Overview of the fisheries sector

In Madagascar, marine fisheries dominate the fishery sector with a contribution of about three quarters to the national fish production, mainly from traditional coastal fisheries. The current national fishery production is estimated to be around 130 000 tonnes per year, excluding catches of tuna and tuna-like species by distant water fleet nations (DWFNs) in the Exclusive Economic Zone (EEZ). Inland fisheries and aquaculture contribute to about 30 000 and 10 000 tonnes per year, respectively.

Direct employment in the marine fishery sector is estimated at approx. 100 000 people, of which approx. 2 300 work in the industrial sub-sector. When considering indirect employment in the sector and the poor level of development of many villages on the coast, it is likely that the marine fishery sector provides a livelihood for about 1 million people. Direct employment in the inland fishery sector might largely exceed 18 000 people, which was the figure derived from an 1988/89 frame survey.

Fish consumption per capita is low at 5.3 kg per year, far below the African average of 9.4 kg. At the same time, however, fisheries products are said to be a favourite food item for Malagasy consumers and the main source of animal protein. The average consumption of fish in Madagascar's rural zones is 1.3 times per week.

Fishery products represent 17.4% of total animal protein intake, below the African average (19.1%) and well below some other island countries in the region such as the Comoros and Seychelles (70.2% and 46.8% respectively).

2.1. Membership in regional fisheries bodies

- Southwest Indian Ocean Fisheries Commission (SWIOFC)
- Indian Ocean Tuna Commission (IOTC)
- Committee on Inland Fisheries and Aquaculture in Africa (CIFAA)

2.2. Seafood production

As the fourth largest island in the world, Madagascar has one of the larger EEZs in the Indian Ocean with a surface area of 1 225 259 km². The continental shelf area is estimated at 117 000 km², with a more pronounced extension in the northwestern and southern part of the island. The coastline is estimated to be over 4 800 km long. Madagascar is thus endowed with a considerable maritime area that includes important fishery resources.

Marine and coastal ecosystems are influenced by a single current system derived from the South Equatorial Current (SEC) whose waters encircle most of the island. Upwelling occurs mainly off the southeast coast, north of Tolagnaro in the south. The west coast is characterized by many estuaries and bays, and colonized by dense mangrove forests covering an estimated area of 3 300 km². The

eastern coast is comparatively straight and featureless, with few estuaries, capes and bays. The coastal habitats and shallow-water marine ecosystem are dominated by coral reefs, mangroves, seagrass beds, estuarine mud flats, steep beaches and rocky shorelines. Demersal fish, which are closely associated with these habitats, form the basis of traditional fisheries in Madagascar.

The main species in the EEZ are the highly valued tropical tuna and tuna-like species that migrate seasonally in Malagasy waters. The main tuna species occurring in the EEZ and adjacent high seas are yellowfin tuna, skipjack tuna and bigeye tuna. Large pelagic sharks in significant quantity are also found in the Malagasy EEZ. Tuna and tuna-like species are principally caught by foreign distant water vessels.

2.2.1. Capture fisheries

Total capture fisheries increased until 2017, when it reached 161 600 tonnes. But in 2018 landings dropped to 129 500 tonnes.

Crustaceans (shrimp) is the most valuable catch but relatively large quantities of unspecified fish are also caught.

Table 1: Madagascar capture fisheries

Volume in tonnes. Source: FAO FishStatJ 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	2 121	1 598	535	922	853
Aquatic Plants	800	800	800	800	800
Cephalopods	2 790	1 483	2 013	3 784	8 098
Crustaceans	15 208	15 687	17 803	26 771	26 252
Demersal Marine Fish	5 660	5 654	5 651	5 639	5 632
Freshwater and Diadromous Fish	22 000	25 940	30 461	35 993	17 870
Marine Fish NEI	38 343	53 105	70 938	73 937	54 039
Molluscs excl. Cephalopods	222	1 799	5 473	5 221	7 534
Pelagic Marine Fish	8 677	8 685	8 659	8 539	8 490
Other	0	0	0	0	0
TOTAL	95 821	114 751	142 333	161 606	129 568

NEI = Not Elsewhere Included

2.2.2. Aquaculture

Aquaculture started to take off in Madagascar in the 1980s. The majority of aquaculture in Madagascar includes the cultivation of sea cucumbers, seaweed, fish and shrimp.

Marine aquaculture includes the culture of shrimp and seaweed. Some operations for the farming or harvesting of sea cucumbers have also been recently developed by NGOs and development projects on the west coast.

Freshwater aquaculture is dominated by fishpond systems for the culture of tilapia and carp. Two research units and several stations aimed at producing fingerlings and providing extension services were created in the 1990's to support the development of freshwater aquaculture as well as to enhance fisheries in freshwater bodies. Fish production from freshwater aquaculture is estimated at 2 400 tonnes per year.

The main freshwater species being farmed is the common carp (*Cyprinus carpio*), which was introduced in 1959. Goldfish (*Carassius auratus*) introduced in 1861 is also bred, but on a much smaller scale. Nile tilapia (*Oreochromis niloticus*) introduced in 1956 is becoming increasingly more common in ponds and in cages.

Marine aquaculture is based mainly on the giant tiger prawn (*Penaeus monodon*), which is fished locally. Introduced in 1998, tropical marine seaweed (*Eucheuma striatum*) Zanzibar strain is currently being farmed in the coastal zones.

Table 2: Madagascar aquaculture production by major species groups

Volume in tonnes. Source: FAO FishStatJ 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	1	25	36	99	50
Aquatic Plants	6 970	15 377	17 423	17 407	5 337
Cephalopods	0	0	0	0	0
Crustaceans	4 696	3 452	4 139	5 439	4 947
Demrsal Marine Fish	0	0	0	0	0
Freshwater and Diadromous Fish	3 773	3 840	4 400	5 390	2 424
Marine Fish NEI	0	0	0	0	0
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	0	0	0	0	0
Other	0	0	0	0	0
TOTAL	15 440	22 694	25 998	28 335	12 758

NEI = Not Elsewhere Included

2.2.3. Processing

Most of the processing done in the country consists of either traditional methods (smoking, drying, salting) of products for the domestic market, or freezing for export.

Table 3: Madagascar processed production

Volume in tonnes. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	16 035	15 321	12 112	19 292	22 629
Fish, dried, salted, or smoked	27	17 503	11 304	4 335	8 704
Fish, fresh, chilled or frozen	6 099	6 096	6 616	4 223	3 491
Fish, prepared or preserved	27 325	31 725	26 668	7 372	7 419
Meals	1 676	516	50	18	29
TOTAL	51 162	71 161	56 750	35 240	42 272

2.3. International trade²

2.3.1. Exports

Fish exports are mostly composed of frozen shrimp from industrial fishing and aquaculture, as well as processed tuna from canneries. The traditional fishery sub-sector targeting high-value species such as octopus, crabs and holothurians, however, also contributes significantly to exports through systems involving fishmongers, fish collectors and fish export companies. Over 80% of fish and fishery products are exported to EU markets.

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FshStatJ. Consequently, figures from the two sources may differ somewhat.

Madagascar exported a total of 24 261 tonnes of marine fishery and aquaculture products in 2018, valued at approximately USD 151.3 million.

The bulk of shrimp caught by industrial and artisanal fleets are exported to European and Japanese markets. The export price varies greatly depending on the destination, the species (five species), the size of the shrimp and the type of fishery product. Shrimps caught by traditional fishing are mostly sold on the domestic market.

Table 4: Madagascar exports by major commodities

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	550	647	1 014	959	751
Crustaceans & Molluscs, live, fresh, chilled, etc.	103 975	69 920	98 552	129 782	108 529
Crustaceans and molluscs, prepared or preserved	455	450	369	270	210
Fish, dried, salted, or smoked	545	550	691	312	264
Fish, fresh, chilled or frozen	3 935	5 626	5 658	5 577	7 322
Fish, prepared or preserved	49 203	35 697	29 657	40 075	34 153
Inedible	13	15	0	0	0
Meals	0	0	0	0	0
Oils	0	0	0	0	0
Sponges, corals, shells	155	112	104	95	84
TOTAL	158 831	113 017	136 045	177 070	151 313

France is the largest market, accounting for as much as two thirds of the total export value. But China is also an important market, with 9.5% of the total export value. Regional markets (Mauritius) are also important.

Table 4: Madagascar exports by destination 2019

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
France	83 999	14 584	0	98 583	67.1 %
China	13 923	0	0	13 923	9.5 %
Spain	4 915	8 492	0	13 407	9.1 %
Mauritius	3 674	12	0	3 686	2.5 %
Japan	1 861	0	0	1 861	1.3 %
Malaysia	1 264	0	0	1 264	0.9 %
Hong Kong	1 080	8	0	1 088	0.7 %
South Korea	990	0	0	990	0.7 %
Portugal	840	0	0	840	0.6 %
Netherlands	641	2 348	0	2 989	2.0 %
USA	347	104	0	451	0.3 %
Côte d'Ivoire	279	0	0	279	0.2 %
New Zealand	235	0	0	235	0.2 %
Comoros	175	0	0	175	0.1 %
Morocco	0	2 512	0	2 512	1.7 %
Belgium	1	1 705	0	1 706	1.2 %
Italy	3	1 342	0	1 345	0.9 %
UK	16	628	0	644	0.4 %

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Germany	0	192	0	192	0.1 %
Others	489	166	0	655	0.4 %
TOTAL	114 732	32 093	0	146 825	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates.

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs.

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other.

2.3.2. Imports

Madagascar imports a significant quantity of frozen tuna, which is then processed in canneries before being exported or sold on the local market. In 2018, Madagascar imported 8 255 tonnes of fish in total, valued at USD 16.4 million.

The largest supplier by far was the Seychelles, which accounted for 61.4% of the total import value. Spain was the second largest supplier, accounting for 29.6%.

Table 5: Madagascar imports by major commodities

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	12	17	26	22	22
Crustaceans & Molluscs, live, fresh, chilled, etc.	173	180	197	308	544
Crustaceans and molluscs, prepared or preserved	19	33	24	39	25
Fish, dried, salted, or smoked	78	83	105	142	139
Fish, fresh, chilled or frozen	31 176	19 456	18 397	24 153	10 755
Fish, prepared or preserved	475	557	473	1 333	3 483
Inedible	423	707	520	474	762
Meals	3 468	174	361	474	184
Oils	0 0	2	15	13	2
Sponges, corals, shells	798	669	527	520	477
TOTAL	36 622	21 878	20 645	27 478	16 393

Table 6: Madagascar imports by origin 2019

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
Seychelles	17 716	0	518	18 234	61.4 %
Spain	8 778	8	0	8 786	29.6 %
France	353	68	15	436	1.5 %
Netherlands	92	0	0	92	0.3 %
Falklands	58	0	0	58	0.2 %
Norway	32	5	0	37	0.1 %
China	14	63	0	77	0.3 %
India	7	46	0	53	0.2 %
Italy	4	8	0	12	0.0 %
Morocco	0	1 480	0	1 480	5.0 %
Thailand	0	36	0	36	0.1 %
Mauritius	0	28	213	241	0.8 %
Germany	0	18	0	18	0.1 %

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
Others	80	77	0	157	0.5 %
TOTAL	27 134	1 837	746	29 717	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates.

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs.

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other.

2.3.3. Trade balance

Madagascar has a positive seafood trade balance, but for fresh, chilled or frozen fish the balance is negative. However, this is corrected by the very large surplus in shrimp trade.

Table 7: Trade balance – Madagascar

Volume in tonnes. Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	1 120	1	1 119	751	22	729
Crustaceans & Molluscs, live, fresh, chilled, etc.	12 618	63	12 555	108 529	544	107 985
Crustaceans and molluscs, prepared or preserved	23	4	19	210	25	185
Fish, dried, salted, or smoked	130	19	111	264	139	125
Fish, fresh, chilled or frozen	2 981	5 953	-2 972	7 322	10 755	-3 433
Fish, prepared or preserved	7 076	1 752	5 324	34 153	3 483	30 670
Inedible	0	229	-229	0	762	-762
Meals	0	140	-140	0	184	-184
Oils	0	0	0	0	2	-2
Sponges, corals, shells	313	94	219	84	477	-393
TOTAL	24 261	8 255	16 006	151 313	16 393	134 920

FISH TRADE STUDY – COUNTRY REPORT

MALAYSIA¹

Area	328 550 km ²
Population 2019 (World Bank)	32 365 999
Coastline	4 810 km
EEZ	665 474 km ²
Total Fish Production MT (FAO, 2018):	1 853 678 MT
Inland aquaculture (MT)	101 770
Marine aquaculture (MT)	290 207
Total Aquaculture (MT)	391 977
Inland capture fisheries (MT)	6 089
Marine capture fisheries (MT)	1 455 612
Total capture fisheries (MT)	1 461 701
Fish Exports Volume & Value (FAO, 2018)	262 745 MT / USD 762.9 million
Fish Imports Volume & Value (FAO, 2018)	762 883 MT / USD 1.06 billion
GDP (World Bank, 2018) / Per capita	USD 314.7 billion / USD 10 118
Fish consumption per capita (FAO 2018)	57.62 kg/ person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

The country consists of two geographical regions divided by the South China Sea, the Peninsular Malaysia (West Malaysia) on the Malay Peninsula bordered by Thailand on the north and Singapore in the south, and Malaysian Borneo (East Malaysia) located on the northern and western part of the island of Borneo in the South China Sea, bordering Indonesia and surrounding Brunei Darussalam. The country shares maritime borders with the Philippines and Vietnam.

The federal constitutional monarchy consists of thirteen states and three federal territories. Kuala Lumpur is the national capital and largest city while Putrajaya, just outside of Kuala Lumpur, is the seat of the federal government.

2. Overview of the fisheries sector

The fishery sector has for decades been playing an important role as a major supplier of animal protein to the Malaysian population. Fisheries are generally considered to consist of two major components, namely marine capture fisheries and aquaculture. The bulk of the fish landings has always come from the capture fisheries, constituting 79 percent of the total production for the year 2018, with the rest coming from aquaculture. Production from the inland fisheries is small, standing at around 0.3 percent. The production pattern has not changed much over the last couple of years.

The total number of fishers in 2017 was estimated to be about 132 305 with an additional 21 156 people engaged in aquaculture full-time. There were 2 867 non-motorized vessels reported under 12 m LOA, while an additional 49 640 decked, motorized vessels were estimated for 2017.

The majority of fish from the marine capture sector is sold in fresh and chilled form, while those from aquaculture are mostly marketed in live form, directly to restaurants, with higher price compared to other markets.

With more wealth and understanding of the health benefits of fish, demand for fish is increasing. Per capita consumption of fish is quite elevated at about 57.6 kg in 2019, which is one of the highest in the world.

2.1. Membership in regional fisheries bodies

- Asia-Pacific Fishery Commission (APFIC)
- Indian Ocean Tuna Commission (IOTC)
- Network of Aquaculture Centers in Asia-Pacific (NACA)
- Southeast Asian Fisheries Development Center (SEAFDEC)

2.2. Seafood production

2.2.1. Capture fisheries

The marine capture fisheries are further sub-divided into coastal fisheries and offshore fisheries. Production from the marine capture fisheries was estimated to be 1.5 million tonnes in 2018. It is generally well accepted that the coastal fishery resources have been fully exploited. There is possibly some extent of overfishing. Over the years, the Department of Fisheries (DOF) has tried various measures in an attempt to reduce the coastal fishing effort. Further expansion of capture fisheries would need to come from the offshore sub-sector, namely in the South China Sea.

A great variety of fish species is caught from the warm tropical waters off the country.

Several pelagic fish species consistently dominate the catches, with just one or two demersal fish “groups” appearing in the list of dominant groups. Shrimp catches have always been significant.

Squid (mainly *Loligo spp.*) generally come in third on the list of dominant groups. Trawlers generally contribute nearly 90 percent of these catches, with the balance coming from a wide range of other fishing gears.

Malaysia does not have large river systems, or natural lakes, and with increasing industrialization, many of the river systems are being polluted, leading to a decline in river fisheries. There are, however, a number of sizeable man-made reservoirs in Peninsular Malaysia (e.g. the Perak and Terengganu dams) that are being developed for inland fisheries and aquaculture.

Table 1: Malaysia capture fisheries production

Volume in tonnes. Source: FAO FishStatJ 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	5 326	17 311	11 363	9 197	14 582
Aquatic Plants	0	0	0	0	0
Cephalopods	88 856	72 929	73 880	71 243	69 691
Crustaceans	122 317	129 523	126 410	131 235	132 300
Demersal Marine Fish	322 857	332 789	360 503	363 393	344 619
Freshwater and Diadromous Fish	40 349	39 963	38 408	39 374	44 231
Marine Fish NEI	306 567	296 586	321 202	320 906	309 744
Molluscs excl. Cephalopods	8 268	6 288	8 053	9 141	6 560
Pelagic Marine Fish	570 106	596 586	640 472	525 801	535 894
Other	4 080	4 080	4 080	4 080	4 080
TOTAL	1 468 726	1 496 055	1 584 371	1 474 370	1 461 701

NEI = Not Elsewhere Included

2.2.2. Aquaculture

The aquaculture sector has long been identified as having the greatest potential for further development.

Among the various culture systems, the traditional culture of cockle on coastal mudflats on the west coast of Peninsular Malaysia has dominated, with cockle landings amounting to more than half the total aquaculture production (excluding seaweeds) until 1999, but in later years cockle farming has declined and the farming of other species has grown significantly.

In recent years, foreign investors have set up large systems of floating cages on lakes and dams to produce tilapia. Along the coast there have also been attempts at starting floating cage aquaculture.

Table 2: Malaysia aquaculture production

Volume in tonnes. Source: FAO FishStatJ 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	563	556	554	513	581
Aquatic Plants	245 332	260 760	205 989	202 966	174 083
Cephalopods	0	0	0	0	0
Crustaceans	61 907	53 058	43 805	46 346	46 234
Demersal Marine Fish	24 323	26 208	22 187	21 984	23 568
Freshwater and Diadromous Fish	142 427	143 906	120 869	133 468	122 991
Marine Fish NEI	278	308	2 258	2 479	3 925
Molluscs excl. Cephalopods	42 681	19 371	12 226	16 194	18 352
Pelagic Marine Fish	3 502	2 798	0	3 566	2 242

Species group	2014	2015	2016	2017	2018
Other	0	0	0	0	0
TOTAL	521 014	506 965	407 887	427 516	391 977

NEI = Not Elsewhere Included

2.2.3. Processing

The bulk of fish, especially that from the marine capture sector, is sold in fresh and chilled form. Mud crab, molluscs, and freshwater fishes from the inland areas, however, are more likely to be sold in live form. A small amount of shucked cockle and mussel meat is available in the market.

Most aquaculturists prefer to market their products in live form, especially directly to restaurants, hoping to obtain higher unit prices than in other markets. However, the market for live fish is small, and most farmed fish is now marketed in chilled form.

Anchovies (“ikan bilis”) are always sold in dried form. The fish is usually cooked in brine on board the vessels and sun-dried on land before being marketed. A significant portion of small marine shrimp, especially that caught by coastal driftnets and bag-nets, is also processed into the dried form for marketing.

Fish processing such as the making of shrimp paste (belacan), pickled shrimp (chincaluk), salted fish, dried cuttlefish, jelly fish, fish sauce, fermented fish (budu), fish crackers, fish balls and fish cake, has traditionally been family operations in fishing villages. However, there has been an increasing trend towards commercial operations lately, with industrial scale set-ups. The trend is likely to continue with the small family businesses being slowly phased out in the coming years. The making of fish balls and surimi is for example mostly industrial in nature now.

There is some canning of fish, cockle meat, and –to a much lesser extent - mussels and cuttlefish.

Table 3: Processed production – Malaysia

Volume in tonnes. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	62 050	47 550	39 000	47 300	48 500
Crustaceans and molluscs, prepared or preserved	6 670	5 750	5 725	6 170	5 346
Fish, dried, salted, or smoked	7 400	7 400	8 100	9 200	16 080
Fish, fresh, chilled or frozen	12 050	11 400	10 350	8 000	8 450
Fish, prepared or preserved	20 350	21 750	22 850	21 290	20 080
Meals	109 000	90 000	86 000	55 900	52 000
TOTAL	217 520	183 850	172 025	147 860	150 456

2.3. Seafood trade²

With the growing population, increasing affluence, and the recognition that fish is actually the healthier source of animal protein, the demand for fish has been on the increase. Per capita consumption of fish was estimated to be 57.6 kg (live weight equivalent) in 2017.

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FshStatJ. Consequently, figures from the two sources may differ somewhat.

2.3.1. Exports

Malaysian seafood exports are considerable, and in 2018 were valued at USD 763 million. A wide variety of products are exported. The most valuable include crustaceans, followed by fresh, chilled and frozen fish and prepared or preserved fish.

The main markets for Malaysian seafood are in Asia, with China accounting for almost 30% of Malaysian exports, followed by Singapore and South Korea. Exports to Europe and North America are now rather modest.

Table 4: Malaysia exports by major commodity groups

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	1 528	2 280	1 979	3 021	2 648
Crustaceans & Molluscs, live, fresh, chilled, etc.	497 894	340 454	312 967	334 619	344 344
Crustaceans and molluscs, prepared or preserved	45 380	33 249	33 426	46 044	40 918
Fish, dried, salted, or smoked	7 462	13 091	23 155	26 688	31 369
Fish, fresh, chilled or frozen	169 754	151 443	179 926	148 446	159 581
Fish, prepared or preserved	102 848	101 827	106 902	120 102	125 277
Inedible	159	146	591	1 188	1 080
Meals	38 061	44 643	52 898	35 010	51 949
Oils	2 563	918	566	3 169	5 562
Sponges, corals, shells	402	221	322	342	155
TOTAL	866 051	688 272	712 732	718 629	762 883

Table 5: Malaysia exports by destination 2019

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
China	227 368	5 869	14 453	247 690	29.3 %
Singapore	95 537	37 123	149	132 809	15.7 %
South Korea	62 829	1 607	604	65 040	7.7 %
Japan	40 109	2 227	8 678	51 014	6.0 %
Thailand	18 156	4 174	431	22 761	2.7 %
Taiwan	36 356	323	6 326	43 005	5.1 %
Australia	30 656	20 774	33	51 463	6.1 %
USA	19 602	10 572	27	30 201	3.6 %
Saudi Arabia	19 046	404	0	19 450	2.3 %
Vietnam	12 939	3 580	19 456	35 975	4.3 %
Indonesia	10 373	11 640	1 808	23 821	2.8 %
Brunei	8 657	2 818	0	11 475	1.4 %
France	4 299	12 982	0	17 281	2.0 %
Philippines	2 869	2 546	105	5 520	0.7 %
New Zealand	2 333	1 163	0	3 496	0.4 %
Italy	2 124	1 325	0	3 449	0.4 %
UAE	1 561	556	0	2 117	0.3 %
Hong Kong	25 214	9 271	1	34 486	4.1 %
Canada	263	4 232	0	4 495	0.5 %

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
UK	141	4 084	0	4 225	0.5 %
Others	28 747	6 208	1 281	36 236	4.3 %
TOTAL	649 179	143 478	53 352	846 009	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates.

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs.

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other.

2.3.2. Imports

Malaysia's imports of seafood are dominated by fresh, chilled and frozen fish and crustaceans. The main suppliers include countries in the region: Indonesia, China, Thailand, and Vietnam. These four countries together account for over 60% of Malaysia's imports.

Table 6: Malaysia exports by major commodity groups

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	14 045	13 219	19 142	21 599	16 573
Crustaceans & Molluscs, live, fresh, chilled, etc.	389 756	284 250	261 088	271 508	282 339
Crustaceans and molluscs, prepared or preserved	33 410	41 263	46 511	44 039	47 426
Fish, dried, salted, or smoked	28 904	23 963	29 963	40 896	49 645
Fish, fresh, chilled or frozen	540 079	465 275	484 227	500 913	554 958
Fish, prepared or preserved	82 330	76 986	76 565	77 097	70 083
Inedible	746	815	1 335	854	897
Meals	24 286	24 811	21 254	23 586	21 506
Oils	18 036	14 682	15 777	18 545	16 219
Sponges, corals, shells	265	150	128	237	109
TOTAL	1 131 857	945 414	955 990	999 274	1 059 755

Table 7: Malaysia imports by origin 2019

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
Indonesia	191 691	4 997	604	197 292	18.0 %
China	179 763	36 949	6 977	223 689	20.4 %
Vietnam	125 519	4 665	10 401	140 585	12.8 %
Thailand	74 559	25 115	470	100 144	9.1 %
Norway	47 061	20	0	47 081	4.3 %
India	46 640	2 347	1 671	50 658	4.6 %
Myanmar	33 018	28	1 562	34 608	3.2 %
Japan	31 400	1 646	438	33 484	3.0 %
Hong Kong	23 181	521	2	23 704	2.2 %
Chile	21 930	2 054	0	23 984	2.2 %
Pakistan	16 559	4	0	16 563	1.5 %
Iran	12 099	0	0	12 099	1.1 %
USA	11 613	31	640	12 284	1.1 %
Oman	9 757	0	133	9 890	0.9 %
Netherlands	9 221	33	140	9 394	0.9 %

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
South Korea	9 188	142	744	10 074	0.9 %
Yemen	9 123	0	0	9 123	0.8 %
Singapore	8 921	2 931	465	12 317	1.1 %
Mexico	8 891	0	0	8 891	0.8 %
Venezuela	8 851	0	0	8 851	0.8 %
Ecuador	7 895	0	0	7 895	0.7 %
Argentina	7 040	0	0	7 040	0.6 %
Philippines	3 818	958	0	4 776	0.4 %
Taiwan	6 768	551	1 360	8 679	0.8 %
Australia	4 980	319	19 044	24 343	2.2 %
UK	2 337	196	16	2 549	0.2 %
New Zealand	6 875	0	1 853	8 728	0.8 %
Others	46 310	487	3 043	49 840	4.5 %
TOTAL	965 008	83 994	49 563	1 098 565	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates.

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs.

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other.

2.3.3. Trade balance

Malaysia has a trade deficit in seafood, mainly because of heavy imports of fresh, chilled and frozen fish. Malaysia has always been a net importer of fish in the sense that the total fishery production, both from capture fisheries and aquaculture, has not been able to cater to the demand for fish in the country. The situation is worsened by the fact that a significant amount of high-value fish species, such as shrimp and tuna, is exported. The shortfall in supply over demand is usually made good by the import of cheaper fish from the neighbouring countries. Nevertheless, a small quantity of high-value exotic fish species is also imported.

Table 8: Trade balance – Malaysia

Volume in tonnes. Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	1 120	1 793	-673	2 648	16 573	-13 925
Crustaceans & Molluscs, live, fresh, chilled, etc.	73 128	70 442	2 686	344 344	282 339	62 005
Crustaceans and molluscs, prepared or preserved	6 363	4 707	1 656	40 918	47 426	-6 508
Fish, dried, salted, or smoked	13 487	22 454	-8 967	31 369	49 645	-18 276
Fish, fresh, chilled or frozen	85 236	271 309	-186 073	159 581	554 958	-395 377
Fish, prepared or preserved	32 618	23 187	9 431	125 277	70 083	55 194
Inedible	1 884	394	1 490	1 080	897	183
Meals	45 318	18 949	26 369	51 949	21 506	30 443
Oils	3 438	9 086	-5 648	5 562	16 219	-10 657
Sponges, corals, shells	153	152	1	155	109	46
TOTAL	262 745	422 473	-159 728	762 883	1 059 755	-296 872

FISH TRADE STUDY – COUNTRY REPORT

MALDIVES¹ (REPUBLIC OF MALDIVES)

Area	300 km ²
Population (World Bank, 2020 estimate)	379 270
Coastline	640 km (1 190 islands)
EEZ	923 322 km ²
Total Fish Production MT (FAO, 2018):	151 013 MT
Inland aquaculture (MT)	0
Marine aquaculture (MT)	0
Total Aquaculture (MT)	0
Inland capture fisheries (MT)	0
Marine capture fisheries (MT)	151 013
Total capture fisheries (MT)	151 013
Fish Exports Volume & Value (FAO, 2018)	71 774 MT / USD 178.4 million
Fish Imports Volume & Value (FAO, 2018)	3 782 MT / USD 30.7 million
GDP (World Bank, 2018) / Per capita	USD 4.9 billion / USD 9 802
Fish consumption per capita (FAO 2019)	90.41 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

The Republic of Maldives is an archipelago of 26 natural atolls, consisting of 1 190 coral reef islands in the Indian Ocean. The islands are scattered over an area of 750 km from north to south and 120 km from east to west covering around 90 000 km², and about 99 percent of the country's territory consists of ocean.

The abundance of marine natural resources forms the basis of the country's two most important economic activities - fisheries and tourism. The fisheries sector has traditionally been the major contributor to the country's economy. Nevertheless, since 1978, the fisheries contribution to the GDP has shown a continual declining trend, mainly due to the rapid growth of the tourism sector in the economy and diversification of the fishery related businesses into other economic sectors such as export and labour. However, the fisheries sector's contribution to the GDP has remained significant, both in terms of employment, value added production and export returns, providing an important source of income. Fisheries and fish processing accounted for 5.1 percent of GDP in 2013 and 59 percent of the country total merchandise trade. In 2018, exports of fish and fishery products were valued at USD 151.0 million, while imports amounted to USD 30.7 million.

2. Overview of the fisheries sector

In 2017 there were around 17 589 fishers employed in the fisheries sector engaged in skipjack, yellowfin and reef fisheries. There are an estimated 6 000 jobs in the secondary sector engaged in processing, marketing and administrative work.

The sector is also the main domestic food provider – Maldives having one of the highest per capita fish consumption in the world at 90.4 kg in 2019. In the past ten years, the fisheries sector has been modernized and expanded, with new and larger vessels catching tunas (mainly skipjack and yellowfin, which together represent over 90 percent of the total catch). The annual fish harvest had been increasing up to a peak of over 186 000 tonnes in 2005 and 2006. Since then, annual fish catch has declined but in the past five years it has increased again.

Correspondingly, both the number of fishers and the number of active boats has been significantly reduced. All other fisheries, except tuna fisheries, target 'reef fishery resources' that include sharks, jacks, scads, breams, and jobfish.

2.1. Membership in regional fisheries bodies

- Bay of Bengal Programme Inter-Governmental Organization (BOBP-IGO)
- Indian Ocean Tuna Commission (IOTC)
- Southwest Indian Ocean Fisheries Commission (SWIOFC)

2.2. Seafood production

2.2.1. Capture fisheries

Skipjack tuna is the most important species in the Maldivian fishery. It contributes about 65 -75% of the total fish catch, while yellowfin tuna accounted for 10-17% . In 2018, pelagic fish (including tunas) accounted for 98.5 % of total landings. The two species are caught predominantly by pole and line fishing.

In the Maldives, the term "reef fishery" refers to all fisheries except tuna fisheries. These are reported as one category in the national statistics and hence the reef fisheries component in the statistics includes reef and oceanic sharks, jacks, scads, breams, jobfish, sail fish, seer-fish, rainbow runners and dolphin fish (mahi mahi).

The reef fishery resources were hardly exploited until the late 1990s. However, with the increase in socioeconomic benefits from the expansion of the tourism sector, together with the improved air

and sea transportation, reef fisheries have developed significantly for both local consumption and export.

An aquarium fishery has recently started in the Maldives and has begun to pick up. This fishery is also considered as a reef fishery.

Table 1: Maldives capture production.

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	99	0
Aquatic Plants	0	0	0	0	0
Cephalopods	0	0	0	0	0
Crustaceans	0	0	0	0	0
Demersal Marine Fish	64	15	0	0	0
Freshwater and Diadromous Fish	0 0	0 0	0 0	0 0	0 0
Marine Fish NEI	5 538	2 051	2 519	1 826	2 161
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	123 093	125 315	126 812	140 453	148 852
Other	0	0	0	0	0
TOTAL	128 695	127 381	129 331	142 378	151 013

2.2.2. Aquaculture

Aquaculture has been recognized an important agenda item for development and since 2001 some technical personnel have been financed by development funds to be trained in Southeast Asian countries in mariculture including pearls, groupers, snappers, seaweed and ornamental fish. However, there has been no substantive progress in aquaculture development apart from partial success in fish breeding. No commercial aquaculture production operation exists so far although investment in sea-cucumber farming has started. Mariculture has recently been recognized as potentially important activity.

2.2.3. Processing

The tuna fishery has created a processing industry (freezing and canning), and processing of fish has therefore increased over the years. In 2018, 110 751 tonnes (product weight) were processed. Most of this was either frozen or preserved/prepared. About 7 100 tonnes of traditional (dried) products were also produced.

Table 2: Processed production – Maldives

Volume in tonnes. Source: FAO FishStatJ, 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	2	115	119	99	98
Fish, dried, salted, or smoked	7 371	22 955	11 967	7 518	7 137
Fish, fresh, chilled or frozen	33 976	26 806	30 470	65 204	55 939
Fish, prepared or preserved	12 899	14 407	14 904	24 001	42 258
Meals	841	767	1 425	1 459	5 319
Oils	-	-	-	-	-
TOTAL	55 089	65 050	58 885	98 281	110 751

2.3. International trade²

The export-based grouper fishery started in 1994. At first, fishing was concentrated in the central atolls, but later it spread over other islands. Groupers are exported live or chilled mainly to China, Hong Kong SAR, Taiwan, Province of China and Thailand.

In the development of the tuna fisheries, Maldivian operators were joined by Japanese investors to start freezing and canning operations. Processing has grown, although the volume and exports vary from year to year.

2.3.1. Exports

The Maldives exports a considerable amount of seafood, and in 2018, the export value amounted to USD 178.4 million. The largest commodity groups were fresh, chilled and frozen fish, which included various tunas and some reef fish.

The country's exports have been mostly directed to large world markets, such as the EU and the USA, but some exports may also have been channelled through Thailand. Part of the export volume shipped to Thailand was raw material for Thailand's large tuna processing industry.

Table 3: Exports of seafood commodities – Maldives

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	350	552	360	597	240
Crustaceans and molluscs, prepared or preserved	0	0	0	14	0
Fish, dried, salted, or smoked	7 391	10 615	9 040	5 926	5 453
Fish, fresh, chilled or frozen	117 519	114 975	112 143	163 461	128 865
Fish, prepared or preserved	15 836	13 853	15 456	24 507	40 525
Meals	458	433	569	1 673	3 303
Oils	0	0	0	0	0
Sponges, corals, shells	0	0	0	0	0
TOTAL	141 554	140 428	137 568	196 178	178 386

Table 4: Maldives exports by destination 2019

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Thailand	57 573	0	0	57 573	38.0 %
France	15 012	0	0	15 012	9.9 %
USA	7 154	6 750	0	13 904	9.2 %
Italy	5 360	630	0	5 990	4.0 %
Sri Lanka	4 981	0	0	4 981	3.3 %
Germany	4 941	13 655	32	18 596	12.3 %
Vietnam	3 651	0	0	3 651	2.4 %
Spain	3 084	0	0	3 084	2.0 %
Japan	2 306	0	0	2 306	1.5 %

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FishStatJ. Consequently, figures from the two sources may differ somewhat.

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Hong Kong	2 159	0	0	2 159	1.4 %
Switzerland	1 834	1 584	0	3 418	2.3 %
UK	1 610	9 689	0	11 299	7.5 %
Taiwan	1 465	0	0	1 465	1.0 %
Netherlands	973	1 076	0	2 049	1.4 %
Costa Rica	863	0	0	863	0.6 %
Norway	2	1 331	0	1 333	0.9 %
Bagladesh	0	0	2 644	0	0.0 %
Sri Lanka	0	0	127	0	0.0 %
Others	3 480	345	37	3 825	2.5 %
TOTAL	116 448	35 060	2 840	151 508	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other.

2.3.2. Imports

Most of the imports into the Maldives consist of crustaceans (shrimp), which mainly goes to the tourist industry. In 2018, as much as two thirds of imports were accounted for by crustaceans. Fresh, chilled and frozen fish were also important import commodities.

Most imports come from neighbouring countries, led by India, UAE and Sri Lanka. Together, these three countries account for 73% of total imports.

Table 5: Imports of seafood commodities – Maldives

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	324	322	323	387	395
Crustaceans & Molluscs, live, fresh, chilled, etc.	16 373	16 304	16 505	20 284	19 399
Crustaceans and molluscs, prepared or preserved	581	696	652	333	290
Fish, dried, salted, or smoked	1 133	948	1 048	1 267	1 380
Fish, fresh, chilled or frozen	4 740	4 836	5 642	7 227	7 451
Fish, prepared or preserved	4 440	3 006	3 521	2 547	1 754
Inedible	1	0	1	1	0
Meals	0	0	0	0	0
Oils	14	2	20	35	20
Sponges, corals, shells	5	5	10	5	10
TOTAL	27 611	26 119	27 722	32 086	30 699

Table 6: Maldives imports by origin 2019

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
India	11 143	1	0	11 144	33.4 %
UAE	8 973	512	0	9 485	28.4 %
Sri Lanka	3 702	38	0	3 740	11.2 %
Australia	2 724	121	0	2 845	8.5 %
Germany	1 046	106	0	1 152	3.4 %

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
China	712	6	0	718	2.1 %
Singapore	637	0	0	637	1.9 %
Thailand	495	718	0	1 213	3.6 %
France	468	56	0	524	1.6 %
Spain	336	3	0	339	1.0 %
Bangladesh	229	0	0	229	0.7 %
Malaysia	172	4	0	176	0.5 %
Belgium	150	36	0	186	0.6 %
Vietnam	147	158	0	305	0.9 %
Others	623	99	0	722	2.2 %
TOTAL	31 557	1 858	0	33 415	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.3. Trade balance

The Maldives has a healthy surplus in its trade balance for seafood, both in terms of volume and value. However, there is a deficit with regard to crustaceans, probably because of high demand for crustaceans in the tourist industry.

Table 7: Maldives seafood trade balance 2018

Volume in tonnes; value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	0	37	-37	0	395	-395
Crustaceans & Molluscs, live, fresh, chilled, etc.	98	1 818	-1 720	240	19 399	-19 159
Crustaceans and molluscs, prepared or preserved	0	24	-24	0	290	-290
Fish, dried, salted, or smoked	1 575	67	1 508	5 453	1 380	4 073
Fish, fresh, chilled or frozen	56 330	1 421	54 909	128 865	7 451	121 414
Fish, prepared or preserved	8 452	411	8 041	40 525	1 754	38 771
Inedible	0	0	0	0	0	0
Meals	5 319	0	5 319	3 303	0	3 303
Oils	0	1	-1	0	20	-20
Sponges, corals, shells	0	3	-3	0	10	-10
TOTAL	71 774	3 782	67 992	178 386	30 699	147 687

FISH TRADE STUDY – COUNTRY REPORT

MAURITIUS¹ (THE REPUBLIC OF MAURITIUS)

Area	2 040 km ²
Population (World Bank, 2020 estimate)	1 271 768
Coastline	330 km
EEZ	1 284 997 km ²
Total Fish Production MT (FAO, 2018):	30 384 MT
Inland aquaculture (MT)	3
Marine aquaculture (MT)	2 067
Total Aquaculture (MT)	2 070
Inland capture fisheries (MT)	0
Marine capture fisheries (MT)	28 314
Total capture fisheries (MT)	28 314
Fish Exports Volume & Value (FAO, 2018)	141 222 MT / USD 473.4 million
Fish Imports Volume & Value (FAO, 2018)	169 687 MT / USD 327.0 million
GDP (World Bank, 2018)	USD 13.3 billion / USD 10 491
Fish consumption per capita (2018)	23.07 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

The Republic of Mauritius is an island nation in the Indian Ocean about 2 000 kilometres off the southeast coast of the African continent, east of Madagascar. It includes the main island (also called Mauritius), as well as Rodrigues, Agaléga and St. Brandon, and the Diego Garcia archipelago of islands. The islands of Mauritius and Rodrigues, along with nearby Réunion (a French overseas department), are part of the Mascarene Islands. The capital and largest city, Port Louis, is located on Mauritius, where most of the population is concentrated. The country spans 2 040 square kilometres and has an Exclusive Economic Zone covering almost 1.3 million square kilometres.

2. Overview of the fisheries sector

The fisheries sector represents an important economic sector of Mauritius; it generates employment, is a source of foreign income and ensures food security. Moreover, the fisheries sector contributes to about 1 % of GDP and employs some 22 000 people, directly and indirectly, with the majority operating in the fish processing sector. In 2018, local fish production was 30 384 tonnes and total exports of fish and fish products generated a revenue of about Rs. 13 billion, contributing about 19 % of the export value. Furthermore, the fishery sector makes a vital contribution to the life of coastal communities by supporting livelihoods of coastal communities, tourism, and ensuring supply of fresh fish on the local market.

Mauritius has one of the largest Exclusive Economic Zones (EEZ) of all countries in Southern and East Africa (1.28 million km²). There are disputed claims with the United Kingdom (Chagos archipelago including Diego Garcia) and France (Tromelin, Europa) over waters and island territories.

Mauritius has joint-venture as well as high-seas fishing interests. Over recent years, Mauritius has developed into a Seafood Hub and a centre of fishing business in the Western Indian Ocean. It has integrated shipping, reefer vessel charter, quay space, cold storage, and seafood processing, marketing and distribution into a special zone. In 2017 the fleet was estimated to contain 1 731 vessels, most undecked. Total fisheries employment was reported as 29 055 people. 291 of these were full-time deep-sea fishing, while the remainder was marine coastal fisheries. Four percent of the people employed in marine coastal fishing were women. A further 129 people were reported in aquaculture and 18 percent of these were women.

2.1. Membership in regional fisheries bodies

- Committee on Inland Fisheries and Aquaculture of Africa (CIFAA)
- Indian Ocean Tuna Commission (IOTC)
- South Indian Ocean Fisheries Agreement (SIOFA)
- Southwest Indian Ocean Fisheries Commission (SWIOFC)

2.2. Seafood production

2.2.1. Capture fisheries

In 2018, capture fisheries production amounted to 28 300 tonnes. Catches come from artisanal fisheries around Mauritius and Rodrigues Islands and from semi-industrial operations on Saya de Malha and Chagos fishing banks. These banks have been historically important sources of seafood for the population.

Table 1: Mauritius capture fisheries

Volume in tonnes. Source: FAO FishStatJ 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	0	0	0	0	0
Cephalopods	530	538	642	669	723
Crustaceans	5	4	4	4	2
Demersal Marine Fish	2 833	2 373	2 373	2 650	1 942
Freshwater and Diadromous Fish	0	0	0	0	0
Marine Fish NEI	1 771	2 051	2 022	2 123	1 706
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	9 516	10 830	13 170	19 541	23 941
Other	0	0	0	0	0
TOTAL	14 655	15 796	18 211	24 987	28 314

NEI = Not Elsewhere Included

2.2.2. Aquaculture

Aquaculture has been practiced in Mauritius for over three decades, but the production was negligible until 2004, when total production levels jumped from less than 50 tonnes in previous years to 350 tonnes due to the development of marine cage culture of red drum. In 2018 aquaculture production reached 2 070 tonnes and the two major species produced are red drum grown in marine cages and European seabass.

Table 2: Mauritius aquaculture production

Volume in tonnes. Source: FAO FishStatJ 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	0	0	0	0	0
Cephalopods	0	0	0	0	0
Crustaceans	2	1	1	1	1
Demersal Marine Fish	703	770	1 014	1 246	2 048
Freshwater and Diadromous Fish	70	2	3	3	3
Marine Fish NEI	-	-	-	...	...
Molluscs excl. Cephalopods	3	3	3	3	18
Pelagic Marine Fish	0	0	0	0	0
Other	0	0	0	0	0
TOTAL	778	776	1 021	1 254	2 070

2.2.3. Processing

There is no processing registered in FAO statistics.

2.3. Domestic markets and demand

The country's per capita fish consumption was estimated at 23.1 kg/person/year in 2019. This contribution raised the interest of the Government, leading to establishing an independent Fisheries Ministry in 2012, for the first time.

2.4. International trade²

2.4.1. Exports

According to FAO and ITC statistics, Mauritius exports vastly more than it produces. This is of course because of the tuna fishery, which is operated by foreign fleets, but to some extent landed and processed in Mauritius. In 2018, Mauritius exports 141 222 tonnes worth USD 473.4 million. The largest commodity, in terms of value, was prepared and preserved fish, i.e. mostly canned tuna, followed by fresh, chilled and frozen fish, which mostly consisted of frozen tuna.

Most of the frozen tuna went to Spain, Italy, Japan and France, where it went into local processing plants.

Table 3: Mauritius exports by major commodities

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	0	0	2	0	2
Crustaceans & Molluscs, live, fresh, chilled, etc.	10	5	0	195	1 212
Crustaceans and molluscs, prepared or preserved	0	0	1	10	8
Fish, dried, salted, or smoked	62	12	88	154	227
Fish, fresh, chilled or frozen	41 451	24 698	28 692	118 546	150 289
Fish, prepared or preserved	310 098	245 779	253 478	296 120	287 539
Inedible	0	0	0	16 644	15 068
Meals	16 040	16 164	14 825	14 139	13 990
Oils	2 108	2 716	3 112	4 840	5 052
Sponges, corals, shells	0	0	0	0	0
TOTAL	369 769	289 374	300 198	450 648	473 387

Table 4: Mauritius exports by destination 2019

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Japan	31 472	0	812	32 284	8.2 %
Thailand	15 761	0	0	15 761	4.0 %
USA	15 544	6 557	0	22 101	5.6 %
Spain	13 093	37 066	1 341	51 500	13.2 %
China	11 704	0	2 355	14 059	3.6 %
Taiwan	9 700	0	2 959	12 659	3.2 %
Italy	5 134	39 038	0	44 172	11.3 %
France	4 183	19 410	0	23 593	6.0 %
South Korea	3 286	0	0	3 286	0.8 %
Singapore	1 972	0	0	1 972	0.5 %
Belgium	1 962	3 153	0	5 115	1.3 %
Canada	1 630	0	0	1 630	0.4 %
South Africa	1 317	78	61	1 456	0.4 %

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FshStatJ. Consequently, figures from the two sources may differ somewhat.

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Portugal	1 266	13 318	0	14 584	3.7 %
Vietnam	1 250	0	1 478	2 728	0.7 %
UK	1 188	72 357	0	73 545	18.8 %
Russia	871	61	0	932	0.2 %
Netherlands	262	35 905	0	36 167	9.2 %
Sweden	0	8 094	0	8 094	2.1 %
Finland	0	8 018	0	8 018	2.0 %
Indonesia	48	0	3 768	3 816	1.0 %
Australia	388	36	574	998	0.3 %
India	0	0	562	562	0.1 %
Others	1 311	10 357	743	12 411	3.2 %
TOTAL	123 342	253 448	14 653	391 443	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.4.2. Imports

Mauritius “imported” a large amount of fish in 2018: 169 687 tonnes. Most of this was tuna caught by foreign vessels in Mauritian waters and landed in Mauritius. In 2018, the import value of fresh, chilled or frozen fish reached USD 266.9 million. Other imports consisted of crustaceans, fresh and frozen fish and some preserved fish, all of which went for consumption in the tourist industry or domestic consumption.

The main suppliers of fish to Mauritius were Seychelles, Spain, France and Taiwan, all of which were landing tuna in Mauritius. Together, these four countries accounted for two thirds of the value of Mauritian imports in 2018.

Table 5: Mauritius imports by major commodities

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	380	255	450	302	364
Crustaceans & Molluscs, live, fresh, chilled, etc.	18 655	15 694	20 056	20 617	23 287
Crustaceans and molluscs, prepared or preserved	1 031	1 070	1 227	1 184	1 217
Fish, dried, salted, or smoked	1 532	1 177	1 641	2 003	1 930
Fish, fresh, chilled or frozen	295 926	225 405	274 071	322 766	266 878
Fish, prepared or preserved	20 006	16 393	16 904	21 180	18 682
Inedible	15 381	14 448	15 541	21 691	13 770
Meals	1 120	2 517	634	86	902
Oils	111	28	1	65	0
Sponges, corals, shells	2	4	0	0	2
TOTAL	354 144	276 991	330 525	389 894	327 032

Table 6: Mauritius imports by origin 2019

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
Seychelles	62 190	76	0	62 266	22.2 %
Spain	56 363	32	0	56 395	20.1 %
France	38 174	427	0	38 601	13.7 %
Taiwan	31 948	0	0	31 948	11.4 %
India	12 877	0	0	12 877	4.6 %
China	12 115	2 093	0	14 208	5.1 %
South Korea	10 908	0	0	10 908	3.9 %
Indonesia	8 585	0	0	8 585	3.1 %
Madagascar	4 583	13	0	4 596	1.6 %
Malaysia	4 410	1 378	0	5 788	2.1 %
Vietnam	3 651	245	0	3 896	1.4 %
New Zealand	2 892	0	0	2 892	1.0 %
Italy	1 853	31	0	1 884	0.7 %
El Salvador	1 367	0	0	1 367	0.5 %
Mozambique	1 237	0	0	1 237	0.4 %
Norway	1 236	31	0	1 267	0.5 %
South Africa	1 137	2 311	0	3 448	1.2 %
Morocco	1	5 023	0	5 024	1.8 %
Thailand	234	2 628	0	2 862	1.0 %
Singapore	0	1 387	0	1 387	0.5 %
Namibia	0	1 151	0	1 151	0.4 %
UK	826	828	0	1 654	0.6 %
Brazil	1	0	71	72	0.0 %
Egypt	0	0	47	47	0.0 %
Others	5 619	928	1	6 548	2.3 %
TOTAL	262 207	18 582	119	280 908	100%

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates.

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other.

2.4.3. Trade balance

The balance of trade in seafood shows a deficit in terms of volume, but a sizeable surplus in terms of value. This is mainly because so much of imports consist of raw materials for the tuna canning industry, while exports consist of canned tuna and some high-value reef fish.

Table 7: Trade balance – Mauritius

Volume in tonnes. Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	0	65	-65	2	364	-362
Crustaceans & Molluscs, live, fresh, chilled, etc.	192	3 994	-3 802	1 212	23 287	-22 075
Crustaceans and molluscs, prepared or preserved	0	146	-146	8	1 217	-1 209

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Fish, dried, salted, or smoked	49	252	-203	227	1 930	-1 703
Fish, fresh, chilled or frozen	60 411	150 575	-90 164	150 289	266 878	-116 589
Fish, prepared or preserved	58 844	5 815	53 029	287 539	18 682	268 857
Inedible	8 110	8 197	-87	15 068	13 770	1 298
Meals	11 893	643	11 250	13 990	902	13 088
Oils	1 723	0	1 723	5 052	0	5 052
Sponges, corals, shells	0	0	0	0	2	-2
TOTAL	141 222	169 687	-28 465	473 387	327 032	146 355

FISH TRADE STUDY – COUNTRY REPORT

MOZAMBIQUE¹ (REPUBLIC OF MOZAMBIQUE)

Area	784 090 km ²
Population 2019 (World Bank)	31 255 435
Coastline	2,515 km
EEZ	603 978 km ²
Total Fish Production MT (2018)	348 241
Inland aquaculture (MT)	127
Marine aquaculture (MT)	0
Total Aquaculture (MT)	127
Inland capture fisheries (MT)	97 020
Marine capture fisheries (MT)	231 256
Total capture fisheries (MT)	328 276
People employed in fisheries sector**	850 000
Fish Exports Volume & Value (FAO 2018)	14 520 MT / USD 72.4 million
Fish Imports Volume & Value (FAO 2018)	40 604 MT / USD 78.9 million
GDP (World Bank, 2019) /Per capita	USD 12.6 billion / USD 441
Fish consumption per capita (FAO 2018)	11.46 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

Mozambique, being the sixteenth largest country in Africa, is located on the east coast of southern Africa on the Indian Ocean. The country is bordered by the United Republic of Tanzania in the north, South Africa in the south and west, Swaziland in the southwest and Zimbabwe and Zambia in the west, and Malawi in the northwest. The country has a total area of 801 590 km². The land borders have a length of 4 445 km, while the coastline measures 2 515 km. Mozambique’s Exclusive Economic Zone (EEZ) is expansive, spanning for 603 978 km². It has about 13 000km² of inland waters, thus the country possesses abundant marine and freshwater fishery resources.

2. Overview of the fisheries sector

Mozambique is endowed with rich marine and inland waters that yield a wide range of living aquatic resources, providing livelihoods, food security, export revenues, and potential for further economic development. The fishery sector can be divided into the following subsectors: marine and inland capture fisheries and aquaculture.

The fishery sector contributes to about 3 - 4 per cent of the country’s GDP and about 850 000 families – around 20 per cent of the population – depend on fishing for part of their income, while a larger proportion relies on the fishery sector for subsistence, with the sector accounting for 30 per cent of total animal protein consumed nationally.

2.1. Memberships in regional fisheries bodies

- Committee on Inland Fisheries and Aquaculture in Africa (CIFAA)
- Indian Ocean Tuna Commission (IOTC)
- Southwest Indian Ocean Fisheries Commission (SWIOFC)

2.2. Seafood production

Mozambique’s total fisheries production has increased significantly from 254 202 tonnes in 2014, to 348 241 tonnes in 2018. Over 94% comes from marine capture fisheries, with some 5% from inland fisheries. Aquaculture production was just 127 tonnes in 2018.

2.2.1. Capture fisheries

Capture fisheries production has increased in recent years, and in 2018 amounted to over 328 000 tonnes. Most of this consisted of freshwater and diadromous fish (29.6% of the total), and various marine fishes (60.9% of the total).

Artisanal fisheries are the most important by volume and contribution to the economy, as they provide income to over quarter of a million people, and contribute over 94% of the total fishery production in 2018. Industrial and semi-industrial fishing is also practised in Mozambique, of which the latter comprises mainly small trawlers involved in domestic coastal shrimp fisheries.

Fish products are either sold in local markets or exported. Industrial fishing includes large vessels flagged in Mozambique and other countries, mostly targeting crustaceans – coastal shrimp and deep-sea shrimp – usually processed at sea and for export, mainly to Japan and Europe.

Table 1: Mozambique capture fisheries production

Volume in tonnes. Source: FAO FishStatJ 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	0	0	0	0	0
Cephalopods	2 178	2 102	2 512	4 482	4 480
Crustaceans	13 512	16 351	20 132	21 259	21 260

Species group	2014	2015	2016	2017	2018
Demersal Marine Fish	673	1 298	1 786	1 969	315
Freshwater and Diadromous Fish	83 851	93 020	96 142	97 021	97 020
Marine Fish NEI	148 361	169 518	175 663	199 777	199 780
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	4 448	4 428	3 518	5 053	5 421
Other	0	0	0	0	0
TOTAL	253 023	286 717	299 753	329 561	328 276

NEI = Not Elsewhere Included

2.2.2. Aquaculture

Although aquaculture is encouraged by the government, production has declined dramatically since the beginning of the century. Aquaculture production peaked in 2003, with a total production of over 5 600 tonnes. At that time, Chinese investors were operating a large shrimp farm near Beira, but they later pulled out, and total aquaculture production gradually dropped to just 127 tonnes in 2018.

Table 2: Mozambique aquaculture production

Volume in tonnes. Source: FAO FishStatJ 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	0	0	0	0	0
Cephalopods	0	0	0	0	0
Crustaceans	0	0	0	0	0
Demersal Marine Fish	150	0	0	0	0
Freshwater and Diadromous Fish	1 029	1 133	1 180	1 835	127
Marine Fish NEI	0	0	0	0	0
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	0	0	0	0	0
Other	0	0	0	0	0
TOTAL	1 179	1 133	1 180	1 835	127

2.2.3. Processing

Several processing plants are in operation in Maputo and Beira, and total processed production has varied between 17 000 and 30 000 tonnes (product weight). In 2018, processed production was almost 20 000 tonnes.

Shrimp is a main product that is being processed into various frozen products for exports. There is also some production of dried, salted and smoked products, main targeting the domestic market.

Table 3: Mozambique processed production

Volume in tonnes. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	12 142	12 360	13 294	13 390	13 525
Fish, dried, salted, or smoked	4 010	16 845	5 812	6 000	5 700
Fish, fresh, chilled or frozen	834	607	1 757	710	740
Fish, prepared or preserved	0	0	0	0	0
TOTAL	16 986	29 812	20 863	20 100	19 965

2.3. Domestic markets and demand

Domestic fish demand is high in Mozambique in relation with the growing population, which is now over 31 million (2019). Fish contributes about 30% of the total animal protein intake nationally. Mozambique's fish consumption rate is 11.5 kilos per capita (according to government figures), compared to global rate of 20.3 kg. A large population relies on subsistence fishing – hence its importance to food security especially in rural areas.

Domestic markets for fish and fishery products are diverse and widespread, ranging from formal urban wholesalers, retailers, fish shops, restaurants, hotels etc – to informal markets such as road-side and landing site vending.

2.4. International trade²

2.4.1. Exports

Total exports were some 14 520 tonnes valued at USD 72.4 million in 2018. The major export commodity groups are crustaceans (shrimp and crab), with various fish species and tuna also.

Asia is an important market for fishery products from Mozambique, but the EU is by far the most important market, accounting for more than 57 percent of exports in 2018. China is also an important market, taking 21 % of Mozambique's seafood exports (by value).

Table 4: Mozambique exports by major commodity group

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	0	0	0	0	0
Crustaceans & Molluscs, live, fresh, chilled, etc.	51 863	31 653	39 002	34 226	62 615
Crustaceans and molluscs, prepared or preserved	1	0	2	24	1 405
Fish, dried, salted, or smoked	6 099	5 360	2 373	2 464	2 382
Fish, fresh, chilled or frozen	1 924	319	3 020	4 188	4 199
Fish, prepared or preserved	11	0	2	0	1
Inedible	0	0	0	0	0
Meals	0	0	6	2	40
Oils	1 289	1 092	1 800	1 324	1 707
Sponges, corals, shells	343	138	163	181	72
TOTAL	61 530	38 562	46 368	42 409	72 421

Table 5: Mozambique exports by destination 2019

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Spain	16 794	0	0	16 794	25.7 %
Portugal	16 317	0	0	16 317	25.0 %
China	13 684	0	0	13 684	21.0 %
France	4 347	0	0	4 347	6.7 %
South Africa	3 069	2	0	3 071	4.7 %

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FshStatJ. Consequently, figures from the two sources may differ somewhat.

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
USA	2 295	0	0	2 295	3.5 %
Thailand	1 889	0	0	1 889	2.9 %
Zimbabwe	1 815	0	0	1 815	2.8 %
Japan	1 314	0	0	1 314	2.0 %
Mauritius	1 176	0	0	1 176	1.8 %
Taiwan	566	0	0	566	0.9 %
Italy	547	0	0	547	0.8 %
Malawi	516	0	0	516	0.8 %
Hong Kong	217	0	0	217	0.3 %
UK	71	1	0	72	0.1 %
Others	690	1	0	691	1.1 %
TOTAL	65 307	4	0	65 311	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates.

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other.

2.4.2. Imports

Fish imports into Mozambique have over the past years been dominated by low-value horse mackerel from Namibia, which accounts for almost 99% of the total import volume and 95% of the value. In addition to Namibia, South Africa is also an important supplier of seafood to Mozambique. Various other species are imported to satisfy domestic demand, but also for further processing and re-exports. Fish feed is imported for the domestic aquaculture sector.

The decrease in fish imports may have been influenced by the greater availability of fish produced domestically, coupled with lower demand from horse mackerel importers.

Table 6: Mozambique imports by major commodity group

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	3	0 0	0 0	7	40
Crustaceans & Molluscs, live, fresh, chilled, etc.	534	376	356	207	307
Crustaceans and molluscs, prepared or preserved	74	41	85	42	36
Fish, dried, salted, or smoked	790	570	313	242	544
Fish, fresh, chilled or frozen	86 448	79 998	59 117	70 765	74 924
Fish, prepared or preserved	4 420	4 597	1 810	2 242	2 574
Inedible	0	0	0	0	1
Meals	412	249	182	538	479
Oils	7	5	0	0	4
Sponges, corals, shells	0	0	0	0	0
TOTAL	92 688	85 836	61 863	74 043	78 909

Table 7: Mozambique Imports by origin 2019

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
Namibia	72 476	1 234	0	73 710	73.5 %
South Africa	8 873	639	284	9 796	9.8 %
Spain	4 252	10	0	4 262	4.2 %
Portugal	2 052	700	380	3 132	3.1 %
China	2 020	218	0	2 238	2.2 %
New Zealand	1 119	0	0	1 119	1.1 %
Angola	721	0	0	721	0.7 %
Italy	606	6	0	612	0.6 %
India	434	0	0	434	0.4 %
Netherlands	344	0	0	344	0.3 %
Japan	338	0	0	338	0.3 %
South Korea	287	0	0	287	0.3 %
Chile	215	0	0	215	0.2 %
Oman	210	0	0	210	0.2 %
Thailand	10	222	0	232	0.2 %
Hong Kong	155	76	0	231	0.2 %
Morocco	20	63	0	83	0.1 %
UAE	139	24	0	163	0.2 %
Brazil	194	0	544	738	0.7 %
Zimbabwe	0	0	453	453	0.5 %
Argentina	0	19	43	62	0.1 %
Others	894	9	19	922	0.9 %
TOTAL	95 359	3 220	1 723	100 302	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates.

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs.

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.4.3. Trade balance

Mozambique has a negative trade balance in fisheries products, both in terms of volume and value. This is caused mainly by very large imports of fish (horse mackerel), which are not offset by the country's exports of high-value shrimp.

Table 8: Trade balance - Mozambique

Volume in tonnes. Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	0	14	-14	0	40	-40
Crustaceans & Molluscs, live, fresh, chilled, etc.	8 556	145	8 411	62 615	307	62 308
Crustaceans and molluscs, prepared or preserved	49	16	33	1 405	36	1 369
Fish, dried, salted, or smoked	3 400	51	3 349	2 382	544	1 838
Fish, fresh, chilled or frozen	1 813	38 183	-36 370	4 199	74 924	-70 725
Fish, prepared or preserved	1	1 889	-1 888	1	2 574	-2 573

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Inedible	0	0	0	0	1	-1
Meals	560	306	254	40	479	-439
Oils	122	0	122	1 707	4	1 703
Sponges, corals, shells	19	0	19	72	0	72
TOTAL	14 520	40 604	-26 084	72 421	78 909	-6 488

FISH TRADE STUDY – COUNTRY REPORT

OMAN¹ (SULTANATE OF OMAN)

Area	212 460 km ²
Population 2019 (World Bank)	5 106 626
Coastline	1 700 km
EEZ	533 180 km ²
Total Fish Production MT (FAO, 2018):	553 896 MT (incl. aquatic plants)
Total Fish Production MT (FAO, 2018):	553 896 MT (excl. aquatic plants)
Inland aquaculture (MT)	101
Marine aquaculture (MT)	350
Total Aquaculture (MT)	451
Inland capture fisheries (MT)	0
Marine capture fisheries (MT)	553 445
Total capture fisheries (MT)	553 445
Fish Exports Volume & Value (FAO, 2018)	283 034 tonnes / USD 324.3 million
Fish Imports Volume & Value (FAO, 2018)	32 284 tonnes / USD 66.6 million
GDP (World Bank, 2018) / Per capita	USD 70.8 billion / USD 15 170
Fish consumption per capita (2018)	28.54 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

The Sultanate of Oman is a country on the south-eastern coast of the Arabian Peninsula in Western Asia and the oldest independent state in the Arab world. Located in a strategically important position at the mouth of the Persian Gulf, the country shares land borders with the United Arab Emirates to the northwest, Saudi Arabia to the west, and Yemen to the southwest, and shares marine borders with Iran and Pakistan. The coast borders on the Arabian Sea on the southeast and the Gulf of Oman on the northeast.

The Madha and Musandam exclaves are surrounded by the UAE on their land borders, with the Strait of Hormuz (which it shares with Iran) and the Gulf of Oman forming Musandam's coastal boundaries.

2. Overview of the fisheries sector

The Sultanate of Oman has a long coastline, the vast majority of which faces the Gulf of Oman and the Arabian Sea. The main economic activity of many coastal communities is fishing, which provides an important supply of fish to local communities, urban areas and for export markets. Oman is one of the largest fish producers in the region and a net exporter of fish and fish products.

2.1. Membership in regional fisheries bodies

- Indian Ocean Tuna Commission (IOTC)
- International Whaling Commission (IWC)
- Regional Commission for Fisheries (RECOFI)

2.2. Seafood production

Fisheries and agriculture are among the oldest and most important production sectors in the Omani economy. They play a vital part in feeding the population, providing employment for large numbers of Omanis and helping to boost the country's GDP. Fishing is considered one of the country's oldest occupations. Capture production comes mainly from marine waters, providing nearly 99.9 percent of total fish landings. The quality of the catches has improved, following the creation of the Fisheries Quality Control Centre.

A total 24 050 fishing vessels were reported in 2017, of which 4 860 vessels were not powered with engines and over 96% of powered vessels were less than 12m in length. The fishery sector provided about 54 410 direct employment in 2017.

Inland production from aquaculture of 100 - 200 tonnes were registered between 2009 and 2011. Fish farming in Oman is now a growing industry and is technically supported by the Fish Farming Centre.

2.2.1. Capture fisheries

Total capture production was quite stable between 2005 and 2011 at around 155 000 tonnes per year but in 2012 started growing significantly and in 2018 reached 553 445 tonnes. This growth was due to both small pelagic and tuna species. There are also important catches of bream, shrimp, lobsters and cephalopods. Industrial fishing is practised by trawlers catching about 20 000 tonnes. Some of these trawlers are operated under charter arrangement.

Several important fish stocks have come under increasing pressure, particularly the high-valued species of rock lobster, abalone and some demersal species, and are generally considered fully exploited.

Since 2010, small pelagic fish made up the bulk of the landings. These species include sardines, followed by Indian mackerel and small jacks.

The most important large pelagics fished were the longtail tuna, large jacks, kingfish and yellowfin tunas. Demersal catch occupied the third position and consisted mainly of ribbonfish, emperor, croaker and catfish. Sharks and rays came in fourth followed by crustaceans represented by lobsters, shrimp and molluscs (abalone and cuttlefish).

Table 1: Oman capture production by species groups

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	0	0	0	0	0
Cephalopods	7 422	5 118	7 500	9 535	16 191
Crustaceans	1 441	1 261	1 323	848	1 611
Demersal Marine Fish	65 962	71 923	74 489	98 658	91 166
Freshwater and Diadromous Fish	0 0	0 0	0 0	0 0	0 0
Marine Fish NEI	1 574	2 600	2 616	8 396	4 591
Molluscs excl. Cephalopods	50	0 0	55	-	-
Pelagic Marine Fish	134 588	176 120	193 623	230 102	439 886
Other	0	0	0	0	0
TOTAL	211 037	257 022	279 606	347 539	553 445

NEI = Not Elsewhere Included

2.2.2. Aquaculture

Aquaculture production in 2018 was of only 451 tonnes. However, Oman’s environmental advantage provides a good potential for the development of aquaculture and there is a strong commitment from the government to develop this sector in a competitive and sustainable manner that is in harmony with the social, economic, cultural and historic values of the country.

Nile tilapia (*Oreochromis niloticus*) is the only species farmed in freshwater. This species represented 101 tonnes of the total aquaculture production in 2018.

Table 2: Oman aquaculture production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	0	0	0	0	0
Cephalopods	0	0	0	0	0
Crustaceans	277	150	70	0	0
Demersal Marine Fish	0	0	0	0	350
Freshwater and Diadromous Fish	5	20	33	77	101
Marine Fish NEI	0	0	0	0	0
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	0	0	0	0	0
Other	0	0	0	0	0
TOTAL	282	170	103	77	451

NEI = Not Elsewhere Included

2.2.3. Processing

While most of the catch is sold fresh or frozen, there is some processing for exports in the form of freezing or reduction to fishmeal and fish oil. Production of fishmeal and fish oil has fluctuated somewhat but in 2018 reached 25 700 tonnes and 8 845 tonnes, respectively.

Table 3: Processed production – Oman

Volume in tonnes. Source: FAO FishStatJ, 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	0	0	0	0	0
Fish, fresh, chilled or frozen	24 000	30 000	32 500	40 500	66 400
Meals	0	11 000	9 400	7 000	25 700
Oils	0	4 000	2 690	2 400	8 845
TOTAL	24 000	45 000	44 590	49 900	100 945

2.2.4. Demand and consumption

Consumption of seafood in Oman in 2019 was 28.5 kg per person per year.

Freshly landed fish is generally sold directly to consumers or to processing companies. Numerous factors affect consumer choice for fish, particularly the product price and freshness as well as the ability to recognizing the fish species. Income is another factor. In Oman, fresh and frozen fish are the most commonly traded product forms in both the domestic and export markets. Fresh, chilled or frozen fish represent approximately 70 and 60 percent, respectively, of the fish exported and imported.

Marketing operations have been streamlined across the country and exports are now better regulated in terms of handling procedures and food safety, particularly with regard to high-valued fish.

2.3. International trade²

2.3.1. Exports

The bulk of frozen fish products, which account for 67 percent of the total fish production, is exported to Vietnam, Thailand and China. Much of this is exported as frozen products that to a certain extent is processed in the importing countries.

Neighbouring countries like Saudi Arabia, UAE, Egypt and Qatar are also importing considerable amounts of seafood from Oman.

Table 4: Exports of seafood commodities – Oman

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	13 778	20 329	22 136	13 124	77 839
Crustaceans and molluscs, prepared or preserved	0	88	1 818	16 040	11 097
Fish, dried, salted, or smoked	5 602	1 416	1 564	1 951	2 390
Fish, fresh, chilled or frozen	117 148	110 812	139 161	66 687	185 563
Fish, prepared or preserved	4 524	5 888	7 778	8 346	18 388

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FshStatJ. Consequently, figures from the two sources may differ somewhat.

Commodity	2014	2015	2016	2017	2018
Inedible	22	0	342	0	0
Meals	524	2 356	1 791	1 519	13 113
Oils	0	3 229	4 685	7 392	15 888
Sponges, corals, shells	0	0	0	0	0
TOTAL	141 598	144 118	179 275	115 059	324 278

Table 5: Oman exports by destination 2018

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Vietnam	70 970	0	8 454	79 424	26.1 %
Thailand	44 932	0	0	44 932	14.8 %
China	17 171	90	0	17 261	5.7 %
Saudi Arabia	16 918	817	437	18 172	6.0 %
UAE	15 480	3 333	0	18 813	6.2 %
Brazil	11 276	1 637	0	12 913	4.2 %
Egypt	11 012	127	123	11 262	3.7 %
Taiwan	7 927	0	1 314	9 241	3.0 %
Bangladesh	7 515	0	0	7 515	2.5 %
Qatar	7 114	2 337	0	9 451	3.1 %
Indonesia	6 747	0	0	6 747	2.2 %
USA	6 720	0	0	6 720	2.2 %
Côte d'Ivoire	4 933	0	0	4 933	1.6 %
Spain	4 389	0	0	4 389	1.4 %
Italy	4 134	0	0	4 134	1.4 %
Malaysia	3 086	0	59	3 145	1.0 %
Kuwait	396	7 175	0	7 571	2.5 %
Libya		4 603	0	4 603	1.5 %
Yemen	117	472	0	589	0.2 %
India	1 935	301	2 808	5 044	1.7 %
Jordan	326	210	0	536	0.2 %
France	2 922	0	0	2 922	1.0 %
Ghana	2 057	33	0	2 090	0.7 %
Others	21 646	308	0	21 954	7.2 %
TOTAL	269 723	21 443	13 195	304 361	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates.

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish egg.

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.2. Imports

Oman imports fish and fish products for local use but the quantities are relatively low. Seafood imports in 2018 amounted to only 32 284 tonnes valued at USD 66.6 million. Some companies, hotels and restaurants import certain fisheries products either because they are not available locally in sufficient quantities (particularly during the closed fishing seasons) or simply because they are not available in Omani waters but are in high demand.

Most of the imports came from neighbouring countries, with the UAE accounting for over 43% of the total import value, followed by Yemen (11.9%) and India (7.9%). Imports from Thailand, Vietnam, Indonesia and Singapore were also important.

Table 6: Imports of seafood commodities – Oman

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	34	109	31	63	111
Crustaceans & Molluscs, live, fresh, chilled, etc.	11 159	11 289	9 457	13 382	17 327
Crustaceans and molluscs, prepared or preserved	1 334	731	950	957	1 864
Fish, dried, salted, or smoked	1 083	915	1 009	853	964
Fish, fresh, chilled or frozen	31 444	36 130	47 782	31 646	27 112
Fish, prepared or preserved	14 368	18 674	19 980	15 945	19 210
Inedible	25	11	23	0	0
Meals	722	1 671	3	20	0
Oils	47	1 736	110	98	57
Sponges, corals, shells	0 0	20	2	3	0
TOTAL	60 216	71 286	79 347	62 967	66 645

Table 7: Oman imports by origin 2018

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
UAE	21 957	8 058	0	30 015	43.2 %
Yemen	7 690	618	0	8 308	11.9 %
India	5 437	23	0	5 460	7.9 %
France	4 111	2 250	0	6 361	9.1 %
Vietnam	1 959	7	0	1 966	2.8 %
Iran	1 651	125	0	1 776	2.6 %
Turkey	1 403	0	0	1 403	2.0 %
Somalia	787	0	0	787	1.1 %
Thailand	651	4 349	0	5 000	7.2 %
Myanmar	616	0	0	616	0.9 %
Pakistan	596	3	0	599	0.9 %
Norway	589	2	0	591	0.9 %
Netherlands	490	3	0	493	0.7 %
Indonesia	442	1 432	0	1 874	2.7 %
Singapore	432	607	0	1 039	1.5 %
Saudi Arabia	310	0	0	310	0.4 %
Qatar	308	85	0	393	0.6 %
UK	21	191	0	212	0.3 %
Switzerland	0	155	0	155	0.2 %
Philippines	0	133	0	133	0.2 %
Others	867	1 170	0	2 037	2.9 %
TOTAL	50 317	19 211	0	69 528	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.3. Trade balance

Oman has a healthy and positive trade balance in fishery products, both in terms of volume and value. In 2018, the trade showed a surplus of USD 257.6 million.

Table 8: Oman seafood trade balance 2018

Volume in tonnes; value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	0	13	-13		111	-111
Crustaceans & Molluscs, live, fresh, chilled, etc.	14 915	4 116	10 799	77 839	17 327	60 512
Crustaceans and molluscs, prepared or preserved	2 119	427	1 692	11 097	1 864	9 233
Fish, dried, salted, or smoked	2 825	985	1 840	2 390	964	1 426
Fish, fresh, chilled or frozen	234 818	23 210	211 608	185 563	27 112	158 451
Fish, prepared or preserved	6 079	3 531	2 548	18 388	19 210	-822
Inedible	0	0	0	0	0	0
Meals	10 435	0	10 435	13 113	0	13 113
Oils	11 843	2	11 841	15 888	57	15 831
Sponges, corals, shells	0	0	0	0	0	0
TOTAL	283 034	32 284	250 750	324 278	66 645	257 633

FISH TRADE STUDY – COUNTRY REPORT

SEYCHELLES¹ (REPUBLIC OF SEYCHELLES)

Area	455 km ²
Population 2020 (World Bank)	98 347
Coastline	491 km
EEZ	1 336 559 km ²
Total Fish Production MT (2018)	145 614
Inland aquaculture (MT)	0
Marine aquaculture (MT)	0
Total aquaculture (MT)	0
Inland capture fisheries (MT)	0
Marine capture fisheries (MT)	145 614
Total capture fisheries (MT)	145 614
Fish Exports Volume & Value (FAO, 2018)	166 657 MT / USD 496.8 million
Fish Imports Volume & Value (FAO, 2018)	78 834 MT / USD 163.8 million
GDP (World Bank, 2019) /Per capita	USD 1.5 billion / USD 15 536
Fish consumption per capita (FAO, 2018)	58.9 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

The Republic of Seychelles is an archipelago in the western Indian Ocean consisting of 115 islands and spread across an Exclusive Economic Zone (EEZ) of about 1.3 million km². The land area is limited to 455 km² with a coastline length of about 491 km. Natural resources (apart from fishery resources in the EEZ), land space, arable land and freshwater resources are all limited, and the national economy is largely based on the tourism and fishery sectors and related service activities.

Other important sectors of the Seychelles economy include construction and services industries such as information & communication and financial services.

2. Overview of the fisheries sector

Although industrial fisheries are a major pillar of the economy, artisanal fisheries remain of great importance for food security, employment and cultural identity. Revenue and capacity building generated by the industrial fisheries sub-sector have supported significant national investment in the development and management of artisanal fisheries, and the two sub-sectors have complemented each other well.

Between 2014 and 2018, total capture production has been fluctuating between 75 000 and 146 000 tonnes. Over 95 percent of the catches are usually of tuna species caught by industrial Seychelles-flagged vessels, and mainly exported. The direct contribution of fisheries to the national economy (GDP) was 7% - 8% and value addition grew by 3% in 2016.

Purse seine and long-line fisheries for tuna, undertaken by foreign licensed vessels as well as the national fleet, constitute the industrial fisheries sub-sector. Seychelles has a semi-industrial sub-sector comprising of smaller long-line vessels fishing for swordfish, tuna and shark. Artisanal fisheries exploit a high diversity of species and habitats with a wide array of boat-gear combinations and strategies and produce some 4 500 tonnes per year.

At last estimate (2016) 457 undecked vessels and 16 decked vessels were reported in the artisanal fishery, all less than 24 meters in length. The semi-industrial fleet had increased to 29 vessels. In 2017 the long-line and purse seine fleet was reported to consist of 81 vessels with most between 36 - 60 meters LOA.

Fisheries provided direct employment of 1 810 people in 2017. In addition, food manufacture provides a large number of jobs including a tuna canning factory with annual throughput of 90 000 tonnes that is the largest single employer in the country.

There is a high reliance on marine resources for protein. With 58.9 kg of fish per person per year (2017), Seychelles is among the higher per-capita-fish-consuming countries in the world.

2.1. Membership in regional fisheries bodies

- Indian Ocean Tuna Commission (IOTC)
- South Indian Ocean Fisheries Agreement (SIOFA)
- Southwest Indian Ocean Fisheries Commission (SWIOFC)

2.2. Seafood production

2.2.1. Capture production

The Seychelles Exclusive Economic Zone is at the centre of the south-west Indian Ocean tuna fishing area. The port of Victoria is the closest point to 90 % of the region's tuna fishing areas, it is less than two days' sailing from the region's fishing grounds, and it is outside the area affected by cyclones. Around 80 % of the tuna catch in the south-west Indian Ocean is landed or trans-shipped in the port of Victoria.

There is a large tuna cannery operated by Indian Ocean Tuna (IOT), which is one of the largest canneries in the world and the main employer in the Seychelles. The Seychelles economy is heavily dependent on IOT's operations, which are in turn highly dependent on the EU market. Given its relatively high cost, any erosion of the preference for importing Seychelles tuna into the EU could have wide-ranging economic repercussions.

The artisanal fishery in Seychelles is a multi-species fishery exploited by a variety of vessel categories and gear types which interact with each other. The resources vary considerably in their nature, from sedentary to highly mobile migratory species. The fleet is composed of around 400 artisanal boats of different types ranging from 5 - 7m fiberglass open boats powered by outboard engines to larger 10 - 15m decked whalers and schooners equipped with inboard engines. Most boats are based on the three main islands of Mahé, Praslin and La Digue.

The semi-industrial fishery was introduced in 1995 with the objective of relieving pressure on demersal resources by targeting swordfish and tuna caught in deeper waters outside the continental plateau.

Industrial fishing in the Seychelles' EEZ is conducted by both Seychelles-flagged tuna vessels and foreign tuna fleets, in particular European purse seiners and Taiwanese long-liners. The purse seiners mainly target surface swimming tuna (skipjack and yellowfin) and the long-liners target larger, deep swimming, big-eye and yellowfin tuna.

Production from the artisanal fleet has been stagnating in recent years around 3 000 tonnes per year. It should be noted that there is a strong seasonal pattern to artisanal fisheries catches in the Seychelles, with catches tending to be highest around the inter-tropical monsoon periods of March-May and October-November, when sea conditions are most conducive to fishing.

Table 1: Seychelles capture fisheries production.

Volume in tonnes. Source: FAO FishStatJ 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	762	691	440	334	334
Aquatic Plants	0	0	0	0	0
Cephalopods	23	15	11	36	36
Crustaceans	58	25	38	96	96
Demersal Marine Fish	2 204	1 673	1 587	2 381	2 713
Freshwater and Diadromous Fish	0	0	0	0	0
Marine Fish NEI	1 601	890	2 980	3 992	3 904
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	70 468	101 690	122 072	135 926	138 531
Other	0	0	0	0	0
TOTAL	75 116	104 984	127 128	142 765	145 614

NEI = Not Elsewhere Included

2.2.2. Aquaculture

There are only two aquaculture production facilities, one producing black-lip oysters (*Pinctada margaritifera*) and the other producing maxima clams (*Tridacna maxima*), both of which are located on Praslin. A shrimp production facility closed in 2008.

The aquaculture sector in Seychelles is fairly recent and is still in its infancy stage. Development of the sector started in 1989 with a pilot project to grow black tiger prawns (*Penaeus monodon*) on Coëtivy Island, situated approximately 130 km from the main island of Mahé. It later grew into a fully-fledged commercial, integrated project based on 200 grow-out ponds supplied by two

hatcheries. The farm ceased all operational activities in December 2008 due mainly to high operating costs and lack of economic viability.

Giant clam (*Tridacna maxima*) and pearl oyster (*Pinctada margaritifera*) farming started on Praslin in 1993 and 1995, respectively. To date, Seychelles is the only country in the Western Indian Ocean region that has a commercial giant clam farm; the clams are reared in raceways. Although the quality of pearls produced from the black-lipped pearl oyster match the quality of those obtained from the Pacific islands, the pearl farm has been facing difficulties keeping up production due to the high loss of pearl oysters on the grow-out lines. During its peak period, the aquaculture sector employed up to 400 people.

Table 2: Seychelles aquaculture production

Volume in tonnes. Source: FAO FishStatJ 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	0	0	0	0	0
Cephalopods	0	0	0	0	0
Crustaceans	0	0	0	0	0
Demersal Marine Fish	0	0	0	0	0
Freshwater and diadromous Fish	0	0	0	0	0
Marine Fish NEI	0	0	0	0	0
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	0	0	0	0	0
Other	0.1	0.1	0	0.1	0
TOTAL	0.1	0.1	0	0.1	0

NEI = Not Elsewhere Included

2.2.3. Processing

Approximately 85 percent of the tuna catch from purse seiners operating in the SWIO are trans-shipped in the port of Victoria. It is estimated that the IOT, which is one of the largest tuna canneries in the world, buys about 20 percent of all tuna landed or trans-shipped in the Seychelles and produces 1.3 million cans of tuna per day. Skipjack, yellowfin and bigeye tuna are the main canning species. Tuna and bycatch that is not off-loaded either goes into containers for forward transportation on cargo vessels or into refrigerated vessels.

The production of canned tuna averaged 30 000 tonnes per year in the period 2008-2011 but has increased considerably in recent years and in 2018 was estimated at about 50 000 tonnes.

The artisanal and semi-industrial fisheries have traditionally provided the major source of protein for the Seychellois population and for visiting tourists, and most of the catch is consumed fresh and is sold in the district markets, of which the most important is Victoria. High quality species, such as red snapper, are usually sold to the main export and fish processing companies and are then sold on to hotels or exported fresh on ice to Réunion and Europe. It should be noted that in recent years an increasingly lucrative export market has developed for high quality fish products.

Occasionally fish is frozen for distribution, mostly for the lower end of the market. With regard to the local market, fish processing is limited and mainly focuses on the smoking of marlin and sailfish, e.g. for the hotel market. Some vessels fishing in the southern group of islands undertake longer trips and seasonally salt fish for sale on the main islands. The shark fishery exports to the Far East. Sea cucumbers are salted and also exported to the Far East.

The two small fish processing companies (Oceana Fisheries Co. Ltd and Sea Harvest Pty. Ltd), which buy fresh fish from artisanal and semi-industrial fishers, also buy frozen bycatch from the purse seiners for processing for the local and international markets. Bycatch from the EU fleets may include dorado, bonito kingfish, trevally, barracuda, sailfish, marlin and shark.

Table 3: Seychelles processed production.

Volume in tonnes. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	64	52	43	28	92
Fish, dried, salted, or smoked	107	111	117	128	167
Fish, fresh, chilled or frozen	70 712	101 554	123 163	136 906	134 348
Fish, prepared or preserved	32 394	32 068	35 569	40 480	51 077
Meals	6 883	6 820	6 382	8 322	8 061
Oils	870	373	390	375	368
TOTAL	111 030	140 978	165 664	186 239	194 113

2.3. International seafood trade²

Seychelles is a member of the Common Market for Eastern and Southern Africa (COMESA), the Indian Ocean Commission (IOC) and the Southern African Development Community (SADC).

Seychelles has been operating under the Free Trade Area of COMESA since 2009 and is currently negotiating its participation under the Free Trade Agreement of SADC.

Seychelles has an open-trade regime; 94 percent of imports enter with a 0 percent rate, with an average tariff of 4.6 percent on agricultural (including fisheries) products.

2.3.1. Exports

The production and export of fish and fishery products, in particular canned tuna, constitute a very important economic activity for the Seychelles. Other fish products include fresh and frozen fish (including tuna loins), dried shark fin and sea cucumber, fish meal and fish oil.

In 2018, the Seychelles exported a total of 166 657 tonnes valued at about USD 496.8 million. EU markets are the main destination, with France, the UK and Italy accounting for nearly 70% of the total exported value.

Table 4: Seychelles exports by major commodity groups

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	0	0	0	0	0
Crustaceans & Molluscs, live, fresh, chilled, etc.	783	687	580	2 738	3 341
Crustaceans and molluscs, prepared or preserved	0	0	0	0	2
Fish, dried, salted, or smoked	2 979	3 538	2 579	73	0 0
Fish, fresh, chilled or frozen	91 688	128 569	212 496	259 245	181 263
Fish, prepared or preserved	319 696	228 392	256 761	256 076	274 952
Inedible	0	0	0	0	0

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FishStatJ. Consequently, figures from the two sources may differ somewhat.

Commodity	2014	2015	2016	2017	2018
Meals	13 514	11 978	7 492	15 574	17 681
Oils	2 376	2 759	3 763	2 564	19 562
Sponges, corals, shells	0	0	1	0	0
TOTAL	431 036	375 923	483 672	536 270	496 801

Table 5: Seychelles exports by destination 2019

Value in USD 1000. Source: FAO FishStatJ 2020

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
France	1 101	95 495	107	96 703	30.8 %
UK	850	75 556	0	76 406	24.3 %
Italy	8 150	34 759	0	42 909	13.7 %
Mauritius	12 912	0	292	13 204	4.2 %
Spain	9 753	0	0	9 753	3.1 %
Thailand	9 743	0	0	9 743	3.1 %
Hong Kong	4 672	0	216	4 888	1.6 %
Japan	3 203	0	3 198	6 401	2.0 %
Côte d'Ivoire	2 980	0	0	2 980	0.9 %
China	2 648	0	0	2 648	0.8 %
Tunisia	1 892	0	0	1 892	0.6 %
Turkey	1 603	130	0	1 733	0.6 %
Sri Lanka	1 507	0	1 057	2 564	0.8 %
USA	1 457	0	1 705	3 162	1.0 %
Vietnam	684	0	0	684	0.2 %
Morocco	644	0	0	644	0.2 %
Denmark	0	10 585	0	10 585	3.4 %
Germany	0	7 830	0	7 830	2.5 %
Netherlands	0	4 107	0	4 107	1.3 %
Finland	0	1 893	0	1 893	0.6 %
Poland	0	1 244	0	1 244	0.4 %
Lithuania	0	535	0	535	0.2 %
Australia	9	0	3 717	3 726	1.2 %
Taiwan	207	0	3 097	3 304	1.1 %
India	64	0	674	738	0.2 %
Madagascar	57	0	491	548	0.2 %
Others	2 874	469	176	3 519	1.1 %
TOTAL	67 010	232 603	14 730	314 343	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.2. Imports

Fish imports are dominated by the import of frozen tuna to supply the canning factory. In 2018, the Seychelles imported a total of 78 834 tonnes, valued at approximately USD 163.8 million. Large quantities of frozen tuna are imported from European vessels operating in the Indian Ocean. By far the largest share of this consisted of raw materials for the tuna cannery. Smaller quantities of fresh

fish, molluscs and crustaceans and prepared fish for local consumption and the tourism industry made up the remainder of fish imports.

The main suppliers are France and Spain (mainly frozen tuna), while other seafood is imported from South Africa and some Asian countries.

Table 6: Seychelles imports by major commodity groups.

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	20	52	35	40	47
Crustaceans & Molluscs, live, fresh, chilled, etc.	2 726	3 757	3 947	4 892	5 164
Crustaceans and molluscs, prepared or preserved	87	229	54	292	169
Fish, dried, salted, or smoked	283	326	329	445	286
Fish, fresh, chilled or frozen	126 071	92 412	119 482	159 007	157 864
Fish, prepared or preserved	734	205	854	236	271
Meals	1	0	0	31	11
Oils	0	0	42	40	2
Sponges, corals, shells	14	20	2	7	11
TOTAL	129 936	97 001	124 745	164 990	163 825

Table 7: Seychelles imports by origin 2019.

Value in USD 1000. Source: FAO FishStatJ 2020

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
France	53 512	67	0	53 579	47.9 %
Spain	46 158	5	0	46 163	41.3 %
South Africa	2 694	9	0	2 703	2.4 %
Papua New Guinea	1 510	0	0	1 510	1.4 %
Thailand	1 390	5	1	1 396	1.2 %
UAE	1 384	65	0	1 449	1.3 %
India	1 272	1	0	1 273	1.1 %
China	941	2	3	946	0.8 %
Belgium	427	10	0	437	0.4 %
Slovakia	262	0	0	262	0.2 %
Vietnam	251	3	0	254	0.2 %
USA	178	1	0	179	0.2 %
Portugal	116	2	0	118	0.1 %
UK	14	27	0	41	0.0 %
Italy	0	24	0	24	0.0 %
Japan	21	15	0	36	0.0 %
Malaysia	7	14	0	21	0.0 %
Netherlands	25	12	0	37	0.0 %
Hong Kong	0	0	850	850	0.8 %
Others	460	55	4	519	0.5 %
TOTAL	110 622	317	858	111 797	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates.

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other.

2.3.3. Trade balance

The Seychelles have a positive trade balance when it comes to seafood. The country imports raw material for the tuna canning, and exports canned tuna and other fish at a higher value.

Table 8: Trade balance - Seychelles

Volume in tonnes. Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	0	5	-5	0	47	-47
Crustaceans & Molluscs, live, fresh, chilled, etc.	54	510	-456	3 341	5 164	-1 823
Crustaceans and molluscs, prepared or preserved	0	22	-22	2	169	-167
Fish, dried, salted, or smoked	0	21	-21	0	286	-286
Fish, fresh, chilled or frozen	118 215	78 198	40 017	181 263	157 864	23 399
Fish, prepared or preserved	35 468	64	35 404	274 952	271	274 681
Inedible	0	0	0	0	0	0
Meals	11 559	6	11 553	17 681	11	17 670
Oils	1 361	0	1 361	19 562	2	19 560
Sponges, corals, shells	0	8	-8	0	11	-11
TOTAL	166 657	78 834	87 823	496 801	163 825	332 976

FISH TRADE STUDY – COUNTRY REPORT

SINGAPORE¹ (REPUBLIC OF SINGAPORE)

Area	683 km ²
Population 2019 (World Bank)	5 850 342
Coastline	193 km
EEZ	1 772 km ²
Total Fish Production MT (FAO, 2018):	7 013 MT
Inland aquaculture (MT)	854
Marine aquaculture (MT)	4 848
Total Aquaculture (MT)	5 702
Inland capture fisheries (MT)	0
Marine capture fisheries (MT)	1 311
Total capture fisheries (MT)	1 311
Fish Exports Volume & Value (FAO, 2018)	36 584 MT / USD 357.5 million
Fish Imports Volume & Value (FAO, 2018)	198 175 MT / USD 1.16 billion
GDP (World Bank, 2018) / Per capita	USD 323.9 billion / USD 56 746
Fish consumption per capita (2018)	15.0 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

The Republic of Singapore is a sovereign island city-state in maritime Southeast Asia. It lies about one degree of latitude (137 kilometres) north of the Equator, off the southern tip of the Malay Peninsula, bordering the Straits of Malacca to the west, the Riau Islands (Indonesia) to the south, and the South China Sea to the east. The country's territory is composed of one main island, 63 satellite islands and islets, and one outlying islet, the combined area of which has increased by 25% since the country's independence in 1965 as a result of extensive land reclamation projects.

Singapore has the second greatest population density in the world. The country has almost 5.9 million residents, 61% (3.4 million) of whom are Singaporean citizens. There are four official languages in Singapore: English, Malay, Mandarin and Tamil, with English being the business language. Multiracialism is enshrined in the constitution and continues to shape national policies in education, housing, and politics.

2. Overview of the fisheries sector

Fisheries, together with forestry and agriculture, contribute less than 0.5% to the country's GDP. Singapore is not a major fishing nation or food producer, currently producing less than 5% of the food it consumes.

The Government is promoting aquaculture and has built an impressive facility on St. John's Island in Singapore harbour – Marine Aquaculture Centre.

But Singapore is first and foremost a trading hub, and large amounts of seafood are imported and exported.

2.1. Membership in regional fisheries bodies

- Southeast Asian Fisheries Development Centre (SEAFDEC)

2.2. Seafood production

2.2.1. Capture fisheries

Singapore has very limited waters and does not have a large fishing fleet. The production from capture fisheries is mostly artisanal and subsistence in nature, and total production is just over 1 000 – 1 300 tonnes per year.

Table 1: Singapore capture production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	0	0	0	0	0
Cephalopods	71	63	62	51	74
Crustaceans	350	386	366	269	276
Demersal Marine Fish	465	389	405	419	523
Freshwater and Diadromous Fish	24	18	20	32	42
Marine Fish NEI	222	142	103	87	85
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	301	267	278	252	311
Other	0	0	0	0	0
TOTAL	1 433	1 265	1 234	1 110	1 311

NEI = Not Elsewhere Included

2.2.2. Aquaculture

Aquaculture production is somewhat larger (5 702 tonnes in 2018), but this is also mostly artisanal and using traditional methods. However, Singapore authorities are trying to introduce modern technology in fish farming and have built a modern research and development centre on St. John’s Island.

In Singapore, local food fish farms produce around 10 percent of Singapore’s consumption of food fish. As Singapore envisions production of 30 percent of Singapore’s nutritional needs locally by 2030, the country’s aquaculture industry needs to transform and adopt technology to raise productivity, strengthen climate resilience and overcome Singapore’s resource constraints. Some farms have already developed innovations such as floating closed containment farming systems and adopted modern technology. There is also an increasingly vibrant aquaculture R&D ecosystem that works closely with the industry to develop solutions and address technology gaps in the sector. In solving its own challenges, Singapore has the potential to become a leader in tropical aquaculture technology and develop innovations that can benefit the world.

Aquaculture in Singapore can be categorized as land-based and sea-based. In 2018, Singapore produced about 5 700 tonnes of foodfish from its 122 licensed foodfish farms. This constitutes around 10 percent of its annual total consumption of live and chilled food fish.

There are 110 sea-based farms in coastal and southern waters that contribute around 85 percent of local foodfish production. Coastal farms are found within designated farming sites located along the Straits of Johor. Most coastal farms occupy farming sites that are about 0.5 to 1 ha in size. Coastal farming sites are generally sheltered and shallow at about 5 - 9 m deep, with some sites having slightly deeper waters of about 10 - 15 m deep. Most of the coastal farms practice traditional open net-cage culture and are made of wooden frame structures floated by 200-L HDPE drums.

Table 2: Singapore aquaculture production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	324	490	531	519	516
Aquatic Plants	0	0	0	0	0
Cephalopods	0	0	0	0	0
Crustaceans	265	240	203	212	211
Demersal Marine Fish	1 018	972	986	1 160	1 095
Freshwater and Diadromous Fish	2 989	4 015	3 645	3 365	3 342
Marine Fish NEI	54	50	22	32	19
Molluscs excl. Cephalopods	469	906	527	353	397
Pelagic Marine Fish	143	224	197	251	123
Other	0	0	0	0	0
TOTAL	5 262	6 896	6 112	5 891	5 702

NEI = Not Elsewhere Included

2.2.3. Processing

Singapore is also a major trading/transshipment base for seafood and products that are manufactured from seafood and has developed a seafood processing industry. There are 94 licensed seafood processing businesses operating in Singapore.

The seafood processing industry is largely based on imported raw materials. In 2018, this industry produced just over 47 000 tonnes of seafood products (product weight). The largest commodity groups were frozen fish and prepared and preserved seafood.

Table 3: Processed production – Singapore

Volume in tonnes. Source: FAO FishStatJ, 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	2 157	2 095	2 357	2 117	2 681
Crustaceans and molluscs, prepared or preserved	870	873	1 170	1 229	1 809
Fish, dried, salted, or smoked	208	210	210	115	100
Fish, fresh, chilled or frozen	24 463	24 568	24 610	24 720	24 300
Fish, prepared or preserved	18 432	18 366	18 424	21 238	18 277
Meals	-	-	-	-	-
TOTAL	46 130	46 112	46 771	49 419	47 167

2.3. International trade²

International trade is very important to Singapore, which has become a major trading hub in Asia. This means that both imports and exports are considerable. In addition, Singapore is well known as a food city, and seafood is particularly popular.

About 88% of supplies are imported. Singapore imports most of its seafood products from Indonesia, Malaysia, Thailand, and Vietnam.

The balance of 12% is supplied by a local aquaculture industry, which comprises about six land-based farms and about 97 sea-based farming operations, which are involved in the production of fish, prawns, crustaceans and molluscs. Production is increasing because of government promotion of the development of new offshore farms to increase seafood supply as part of its overall food security policies.

2.3.1. Exports

In 2018, Singapore exported some 36 584 tonnes of seafood worth USD 357.5 million. Most of the trade is with neighbouring countries in Asia, such as China, Malaysia, Hong Kong and Indonesia, but the USA is also a major market for Singapore.

Table 4: Exports of seafood commodities – Singapore

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	2 753	2 725	2 656	3 208	2 386
Crustaceans & Molluscs, live, fresh, chilled, etc.	61 712	63 000	49 071	58 067	50 935
Crustaceans and molluscs, prepared or preserved	57 129	73 219	54 462	35 031	29 761
Fish, dried, salted, or smoked	41 419	53 153	54 955	38 984	32 214
Fish, fresh, chilled or frozen	128 370	148 428	160 737	167 707	199 120
Fish, prepared or preserved	26 355	29 772	32 980	29 291	33 475
Inedible	4 670	5 851	8 160	8 118	7 935

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FishStatJ. Consequently, figures from the two sources may differ somewhat.

Commodity	2014	2015	2016	2017	2018
Meals	16	23	1 574	1 914	911
Oils	360	307	1 054	605	701
Sponges, corals, shells	330	176	41	67	66
TOTAL	323 114	376 654	365 690	342 992	357 504

Over 32 percent of Singapore's seafood exports go to neighbouring countries (Malaysia, Indonesia, Thailand, Vietnam), while the largest market, China) takes 18.1 percent and Hong Kong 11.3 percent.

Table 5: Singapore exports by destination 2019

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
China	48 613	1 062	0	49 675	18.1 %
Malaysia	32 553	9 242	0	41 795	15.3 %
Hong Kong	26 670	4 372	0	31 042	11.3 %
USA	18 484	3 178	0	21 662	7.9 %
Indonesia	15 003	5 051	0	20 054	7.3 %
Vietnam	12 367	175	522	13 064	4.8 %
Thailand	11 894	2 120	0	14 014	5.1 %
Japan	11 458	186	1	11 645	4.3 %
Philippines	9 187	1 117	0	10 304	3.8 %
UK	8 249	147	0	8 396	3.1 %
Australia	3 964	1 498	0	5 462	2.0 %
Brunei	3 808	0	0	3 808	1.4 %
Taiwan	3 798	1 420	0	5 218	1.9 %
South Korea	2 901	1 619	0	4 520	1.7 %
Qatar	2 195	71	0	2 266	0.8 %
Germany	2 124	0	0	2 124	0.8 %
Russia	2 080	0	0	2 080	0.8 %
Canada	2 020	1 140	0	3 160	1.2 %
India	1 679	24	0	1 703	0.6 %
Netherlands	1 651	816	0	2 467	0.9 %
France	1 601	0	0	1 601	0.6 %
Italy	1 222	0	0	1 222	0.4 %
UAE	1 103	228	0	1 331	0.5 %
Brazil	1 023	0	0	1 023	0.4 %
Spain	1 023	0	0	1 023	0.4 %
Mauritius	905	1 142	0	2 047	0.7 %
Brunei	3 808	737	0	4 545	1.7 %
Vanuatu	3	606	0	609	0.2 %
New Zealand	495	306	0	801	0.3 %
Others	4 200	1 058	0	5 258	1.9 %
TOTAL	236 081	37 315	523	273 919	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.2. Imports

Singapore imports large amounts of seafood. In 2018, total imports amounted to 198 175 tonnes worth almost USD 1.2 billion. The largest commodity groups imported were crustaceans followed by fresh, chilled or frozen fish and prepared and preserved fish.

Most countries in the world export seafood to (or through) Singapore, but the largest suppliers include Malaysia, Indonesia and China. Norway is a big supplier because of large salmon imports, and because of the fact that Norwegian traders/processors are well established in Singapore.

Table 6: Imports of seafood commodities – Singapore

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	6 433	7 738	8 621	7 891	9 482
Crustaceans & Molluscs, live, fresh, chilled, etc.	300 583	287 700	282 294	303 457	310 166
Crustaceans and molluscs, prepared or preserved	213 171	212 861	199 308	169 018	167 866
Fish, dried, salted, or smoked	61 419	70 416	80 936	64 446	61 228
Fish, fresh, chilled or frozen	398 839	385 809	427 871	429 511	483 618
Fish, prepared or preserved	118 956	120 339	119 697	112 407	118 794
Inedible	4 967	6 020	8 307	8 474	8 925
Meals	318	53	54	0 0	9
Oils	4 571	1 931	2 511	1 392	2 319
Sponges, corals, shells	82	133	45	69	118
TOTAL	1 109 339	1 093 000	1 129 644	1 096 665	1 162 525

Table 7: Singapore imports by origin 2019

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
Malaysia	102 734	37 511	80	140 325	14.8 %
Indonesia	100 385	8 423	0	108 808	11.5 %
China	90 062	14 529	14	104 605	11.1 %
Vietnam	80 090	12 309	0	92 399	9.8 %
Norway	78 944	275	0	79 219	8.4 %
Japan	61 071	5 372	0	66 443	7.0 %
India	31 621	3 965	0	35 586	3.8 %
Spain	27 350	385	0	27 735	2.9 %
Thailand	23 618	18 584	0	42 202	4.5 %
Chile	19 953	3 371	0	23 324	2.5 %
UK	18 872	1 569	0	20 441	2.2 %
USA	17 979	569	0	18 548	2.0 %
France	16 663	1 559	0	18 222	1.9 %
Namibia	13 587	0	0	13 587	1.4 %
South Korea	12 655	905	0	13 560	1.4 %
Canada	12 427	50	3	12 480	1.3 %
Taiwan	12 289	2 538	0	14 827	1.6 %
Australia	12 038	389	0	12 427	1.3 %

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
Philippines	9 542	1 624	0	11 166	1.2 %
New Zealand	8 813	75	0	8 888	0.9 %
Hong Kong	8 763	326	0	9 089	1.0 %
Argentina	7 652	0	0	7 652	0.8 %
Sri Lanka	6 274	0	0	6 274	0.7 %
Myanmar	3 619	825	0	4 444	0.5 %
Italy	134	624	0	758	0.1 %
Poland	556	244	0	800	0.1 %
Others	50 231	1 060	0	51 291	5.4 %
TOTAL	827 922	117 081	97	945 100	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.3. Trade balance

Singapore has a large trade deficit both in terms of volume and value. This is partly because the country is not able to produce enough seafood domestically to feed its population, and partly because it is a large trading hub where large amounts of seafood go through the country.

Table 8: Singapore seafood trade balance 2018

Volume in tonnes; value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	176	1 289	-1 113	2 386	9 482	-7 096
Crustaceans & Molluscs, live, fresh, chilled, etc.	4 574	41 982	-37 408	50 935	310 166	-259 231
Crustaceans and molluscs, prepared or preserved	2 281	13 711	-11 430	29 761	167 866	-138 105
Fish, dried, salted, or smoked	1 703	6 294	-4 591	32 214	61 228	-29 014
Fish, fresh, chilled or frozen	14 518	95 116	-80 598	199 120	483 618	-284 498
Fish, prepared or preserved	6 654	31 998	-25 344	33 475	118 794	-85 319
Inedible	6 518	7 215	-697	7 935	8 925	-990
Meals	39	0	39	911	9	902
Oils	119	555	-436	701	2 319	-1 618
Sponges, corals, shells	2	15	-13	66	118	-52
TOTAL	36 584	198 175	-161 591	357 504	1 162 525	-805 021

FISH TRADE STUDY – COUNTRY REPORT

SOMALIA¹ (FEDERAL REPUBLIC OF SOMALIA)

Area	627 337 km ²
Population 2020 (World Bank)	15 893 222
Coastline	3 330 km
EEZ	825 052 km ²
Total Fish Production MT (2018)	30 000 MT
Inland aquaculture (MT)	0
Marine aquaculture (MT)	0
Total aquaculture (MT)	0
Inland capture fisheries (MT)	200
Marine capture fisheries (MT)	29 800
Total capture fisheries (MT)	30 000 MT
Fish Exports Volume & Value (FAO, 2018)	4 225 MT / USD 8.0 million
Fish Imports Volume & Value (Govt, 2019)	2 893 MT / USD 13.8 million
GDP (World Bank, 2019) / Per capita	USD 1.9 billion/ USD 127
Fish consumption per capita (FAO, 2018)	2.4 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

Somalia is situated in the Horn of Africa, at the junction of the Gulf of Aden and the Indian Ocean, and is bordered by Djibouti, Ethiopia and Kenya. Somalia has a surface area of about 637,700 km² and a very long coastline of approximately 3,330 km. The population of Somalia was estimated at about 15.9 million in 2020.

Somalia has undergone a prolonged period of conflict and insecurity over the last 30 years, with intense fighting, population displacement, food insecurity, humanitarian crisis and generalized lack of centralized governance structures. Somalia has been fractionalized into three *de facto* spatial and political entities, mainly South and Central Somalia where the official capital city (Mogadishu) is located, Puntland in the north-east, and Somaliland in the north.

The “Republic of Somaliland” was declared independent in May 1991 and its capital city is Hargeisa. The Constitution of the Somaliland Republic (2001) was approved by popular referendum; however, to date this self-declared Somali state is unrecognized by any country or international organization.

The “Puntland State of Somalia” was self-declared in 1998; however, unlike Somaliland, which declared full independence from Somalia, Puntland’s secession was aimed at reconstituting Somalia as a federation of semi-autonomous states.

Somalia is still characterized by a severe lack of basic economic and social statistics. The situation has worsened through the two-decade conflict and the resulting collapse of the country’s institutions. The existence of *de facto* spatial and political entities results in complex economic realities and exacerbates the issue of data reliability and consistency for Somalia as a whole.

2. Overview of the fisheries sector

Somaliland has a coastline of 850 km and claims an EEZ of 70 000 km². Puntland has a 1 600 km coastline and under the Puntland’s Fisheries Regulations (2004), the semi-autonomous regional state claims its own territorial sea (12 nautical miles), contiguous zone (24 nautical miles) and EEZ (200 nautical miles).

Since Somalia’s semi-autonomous regions are not a party to the Law of the Sea, it is legally impossible for these regions to make maritime territorial claims in accordance with the provisions of the United Nations Convention on the Law of the Sea (UNCLOS). In order for such maritime territorial claims to be legally valid, the regions must first obtain recognition as independent states, as the Somali EEZ cannot be sub-divided into semi-autonomous regions.

Somalia’s marine fishery dominates the fishery sector. There is no history of aquaculture but there is a small inland fishery sector mostly based on riverine systems. According to FAO FishStatJ data, total inland production has stagnated at 200 MT per year over the past decade.

2.1. Membership in regional fisheries bodies

- Southwest Indian Ocean Fisheries Commission (SWIOFC)
- Indian Ocean Tuna Commission (IOTC)

2.2. Seafood Production

2.2.1. Capture fisheries

The fishing fleet is almost entirely artisanal and consists of small boats. Although statistics are submitted, they appear to be unreliable. Therefore, we have very little data on this activity.

There are two fleets operating in Somali waters: an inshore fleet of nationally registered artisanal vessels and an offshore industrial fleet. In 2004, the artisanal fishery was producing up to 6 000 MT annually. The industrial fleet used to be licensed by the government but has all but ceased

operations in the current climate. This sector was mostly composed of foreign vessels and produced about 13 000 MT annually in the mid-2000's. It is also reported that illegal, unreported and unregulated (IUU) fishing in Somali waters is carried out on a large scale.

In 2014, Somalia joined the Indian Ocean Tuna Commission, and in 2019 an effort to collect and report data on the state of fish stocks started. It is expected that the first reports on this will be submitted in 2021. This work is also expected to improve the situation with regard to IUU fishing.

Table 1: Somalia capture fisheries production

Volume in tonnes. Source: FAO FishStatJ 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	0	0	0	0	0
Cephalopods	600	600	600	600	600
Crustaceans	500	500	500	500	500
Demersal Marine Fish	0	0	0	0	0
Freshwater and Diadromous Fish	200	200	200	200	200
Marine Fish NEI	28 700	28 700	28 700	28 700	28 700
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	0	0	0	0	0
Other	0	0	0	0	0
TOTAL	30 000	30 000	30 000	30 000	30 000

NEI = Not Elsewhere Included

2.2.2. Aquaculture

Somalia has no registered aquaculture production.

2.2.3. Processing

No organized processing is registered. However, both wholesalers and retailers do freeze fish, and there is some drying for the local market and for neighbouring countries.

In the past, unsold fish was dried and salted for the dhow trade, mainly to east African countries, and prices were usually low due to the poor processing methods and resultant poor product quality.

In Las Korye, the Las Korye canning factory was completely rehabilitated by the private sector with the support of UNDP. According to the FAO Fishery Country Profile, 2005, the factory was fully operational in the mid-2000's and canned fish products were exported to east Africa, Europe, Canada and the USA. Some fish products (frozen fillets or whole gutted frozen fish) and high quality lobster (processed as whole or frozen tails) used to be exported to the Arabian Gulf States and to Saudi Arabia.

With regard to the use of sharks, which represent about 40 percent of total artisanal fisheries in certain areas, most of the dry shark meat is well processed, and although there are still some low quality, poorly processed lots, there have been some improvements in the last decade or so. Transportation has also improved substantially through the use of cargo boats, usually from Mombasa, Kenya, which bring tea to Somalia and return with dried shark meat. Shark fins are also well processed, and are exported by air to the Arabian Gulf, mainly to the United Arab Emirates, and fetch high prices, between USD 90 – 100 per kg.

Table 2: Somalia processed production

Volume in tonnes. Source: FAO FishStatJ 2020

Commodity	2015	2016	2017	2018
Fish, dried, salted, or smoked	0	0	0	0
Fish, prepared or preserved	0	0	0	0
Meals	0	0	0	0
TOTAL	0	0	0	0

2.2.4. Domestic markets and demand

Somalis are not traditional fish-eaters and most fish is sold to export markets.

In local markets, fish is preferred fresh. However, with the exception of bigger cities and towns, where cold storage facilities are being rehabilitated, the general lack of processing, storage and transportation means throughout the country has hampered the development of fresh fish marketing on local markets.

2.3. Seafood trade²

2.3.1. Exports

Again, it must be pointed out that statistics are extremely unreliable. FAO statistics indicate an export value of USD 8.0 million in 2018, while ITC TradeMap indicates exports worth USD 36.1 million. In both cases, unprocessed fresh, chilled or frozen crustaceans and fish are dominating.

Table 3: Somalia exports by major commodity groups

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	31	378	494	625	2 606
Crustaceans and molluscs, prepared or preserved	17	21	0	0	20
Fish, dried, salted, or smoked	43	5	205	985	591
Fish, fresh, chilled or frozen	1 643	3 464	3 851	3 906	3 663
Fish, prepared or preserved	13	23	62	...	631
Inedible	0	0	0	0	0
Meals	0	0	0	0	0
Oils	0	13	445	413	445
Sponges, corals, shells	4	11	2	3	0
TOTAL	1 751	3 915	5 059	5 932	7 956

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FshStatJ. Consequently, figures from the two sources may differ somewhat.

Table 4: Somalia exports by destination 2019

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Japan	11 440	0	0	11 440	31.4 %
UAE	8 358	0	0	8 358	22.9 %
China	4 909	0	0	4 909	13.5 %
Côte d'Ivoire	2 792	0	0	2 792	7.7 %
South Korea	2 285	0	0	2 285	6.3 %
Hong Kong	1 753	0	0	1 753	4.8 %
Taiwan	1 622	0	0	1 622	4.5 %
Senegal	1 353	0	0	1 353	3.7 %
Jordan	872	0	0	872	2.4 %
Singapore	420	0	0	420	1.2 %
Lebanon	108	0	0	108	0.3 %
Saudi Arabia	98	0	0	98	0.3 %
UK	0	331	0	331	0.9 %
Others	91	0	0	91	0.2 %
TOTAL	36 101	331	0	36 432	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.2. Imports

Somalia imports more than it exports. In 2018, imports were estimated by FAO at 2 893 tonnes worth USD 13.8 million, while ITC estimated imports to be twice that. Prepared and preserved products were dominating imports, and the largest supplier by far was UAE.

Table 5: Somalia imports by major commodity groups

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	6	31	77	45	36
Crustaceans and molluscs, prepared or preserved	0	15	1	2	11
Fish, dried, salted, or smoked	0	34	17	3	3
Fish, fresh, chilled or frozen	587	1 462	1 106	1 149	1 756
Fish, prepared or preserved	11 451	13 769	12 127	17 608	11 892
Meals	0	0	0	0	0
Oils	0	4	0	44	5
Sponges, corals, shells	0	0	0	0	108
TOTAL	12 044	15 315	13 328	18 851	13 811

Table 6: Somalia imports by origin 2019

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
China	1 168	157	0	1 325	5.1 %
Italy	290	0	0	290	1.1 %
Netherlands	124	2	0	126	0.5 %
UAE	68	15 665	0	15 733	60.3 %
Germany	1	0	0	1	0.0 %
Kjenya	1	0	0	1	0.0 %
Thailand	0	7 824	0	7 824	30.0 %
Indonesia	0	550	0	550	2.1 %
Morocco	0	178	0	178	0.7 %
South Africa	0	35	0	35	0.1 %
Turkey	0	7	0	7	0.0 %
Others	0	0	0	0	0.0 %
TOTAL	1 652	24 418	0	26 070	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.3. Trade balance

In terms of volume, Somalia has a positive trade balance, but in terms of value, it is negative, with a deficit of USD 5.9 million. The big contributor to this deficit are the imports of prepared and preserved products, which tend to be rather expensive.

Table 7: Trade balance – Somalia

Volume in tonnes. Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Crustaceans & Molluscs, live, fresh, chilled, etc.	379	2	377	2 606	36	2 570
Crustaceans and molluscs, prepared or preserved	2	1	1	20	11	9
Fish, dried, salted, or smoked	226	0	226	591	3	588
Fish, fresh, chilled or frozen	3 308	536	2 772	3 663	1 756	1 907
Fish, prepared or preserved	104	2 342	-2 238	631	11 892	-11 261
Inedible	0	0	0	0	0	0
Meals	0	0	0	0	0	0
Oils	206	2	204	445	5	440
Sponges, corals, shells	0	10	-10	0	108	-108
TOTAL	4 225	2 893	1 332	7 956	13 811	-5 855

FISH TRADE STUDY – COUNTRY REPORT

SOUTH AFRICA¹ (REPUBLIC OF SOUTH AFRICA)

Area	1 219 912 km ²
Population 2019 (World Bank)	59 308 690
Coastline	3 623 km
EEZ	1 535 538 km ²
Total Fish Production MT (FAO, 2018)	578 413
Inland aquaculture (MT)	1 982
Marine aquaculture (MT)	5 886
Total aquaculture (MT)	7 868
Inland capture fisheries (MT)	900
Marine capture fisheries (MT)	569 645
Total capture fisheries (MT)	570 545
Fish Exports Volume & Value (FAO, 2018)	193 696 MT / USD 716.6 million
Fish Imports Volume & Value (Govt, 2019)	276 770 MT / USD 510.0 million
GDP (World Bank, 2019)/Per capita	USD 348.9 billion/ USD 6 120
Fish consumption per capita (FAO, 2018)	5.97 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

South Africa is the southernmost country in Africa. With over 59 million people, it is the world's 24th-most populous nation and covers an area of 1.2 million square kilometres. South Africa has three capital cities: executive Pretoria, judicial Bloemfontein and legislative Cape Town. The largest city is Johannesburg. About 80% of South Africans are of Black African ancestry, divided among a variety of ethnic groups speaking different African languages². The remaining population consists of Africa's largest communities of European, Asian, and multiracial ancestry.

South Africa is a multi-ethnic society encompassing a wide variety of cultures, languages, and religions. Its pluralistic makeup is reflected in the constitution's recognition of 11 official languages, the fourth-highest number in the world. According to the 2011 census, the two most spoken first languages are Zulu (22.7%) and Xhosa (16.0%). The two next ones are of European origin: Afrikaans (13.5%) developed from Dutch and serves as the first language of most coloured and white South Africans; English (9.6%) reflects the legacy of British colonialism, and is commonly used in public and commercial life. The country is one of the few in Africa never to have had a coup d'état, and regular elections have been held for almost a century. However, the vast majority of black South Africans were not enfranchised until 1994.

The country is bordered to the south by 3 623 kilometres of coastline of Southern Africa stretching along the South Atlantic and Indian Oceans; to the north by the neighbouring countries of Namibia, Botswana, and Zimbabwe; and to the east and northeast by Mozambique and Eswatini (former Swaziland); and it surrounds the enclaved country of Lesotho. South Africa is a biodiversity hotspot, with a diversity of unique biomes and plant and animal life.

2. Overview of the fisheries sector

Fisheries, especially marine, play an important role in South Africa. In 2018, capture fisheries produced almost 570 000 tonnes, of which only 900 tonnes were caught in inland waters. The main species caught were anchovy (260 000 tonnes), hakes (143 000 tonnes) and pilchard (79 500 tonnes).

In total, the fishing industry employs an estimated 28 000 people in the primary sector, while more than 80 000 people are employed in down-stream and up-stream activities.

South Africa has a coastline that spans two ecosystems over a distance of 3 623 km, extending from the Orange River in the west on the border with Namibia, to Ponta do Ouro in the east on the Mozambique border. The western coastal shelf has highly productive commercial fisheries similar to other upwelling ecosystems around the world, while the east coast is considerably less productive but has high species diversity, including both endemic and Indo-Pacific species.

While this country profile covers the entirety of the country, as do other of our IORA profiles, it should be noted that it is the east coast ecosystem which is of more relevance to the IORA region.

2.1. Membership in regional fisheries bodies

- Agreement on the Conservation of Albatrosses and Petrels (ACAP)
- Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)
- Commission for the Conservation of Southern Bluefin Tuna (CCSBT)
- Indian Ocean Tuna Commission (IOTC)
- International Commission for the Conservation of Atlantic Tunas (ICCAT)
- International Whaling Commission (IWC)

² "Mid-year population estimates" (PDF). Statistics South Africa. 29 July 2019.

- South East Atlantic Fisheries Organisation (SEAFO)
- Southwest Indian Ocean Fisheries Commission (SWIOFC)

2.2. Seafood production

Total seafood production has fluctuated between 530 000 and 620 000 tonnes per year during the last five years. Two species groups dominate: small pelagics and demersal fish (whitefish).

2.2.1. Capture fisheries

There are no inland commercial fisheries of any significance in South Africa. Recreational exploitation of freshwater fish on inland rivers and impoundments is extensive, with small subsistence fisheries in places. However, most freshwater or inland fisheries are related to a limited number of aquaculture developments.

Marine fisheries in South Africa are diverse, and because of the different ecosystems and irregular coastline, they are diversified, both with respect to species caught and gear deployed. In the offshore sector, the industrial fisheries are dominated in terms of volume and value by the demersal hake trawl fishery and the small pelagic purse seine fishery for anchovy and sardine. These two fisheries are primarily based on the South African west coast from the ports of Cape Town, Saldanha Bay and St. Helena Bay. There are also small fisheries for hake using demersal longlines and hake handline that collectively are allocated 10 percent of the allowable catch. A further 6 percent of the hake catch is allocated to a small inshore trawl fishery operating out of Mossel Bay and Port Elizabeth on the south coast. There is a small but significant midwater trawl fishery targeting horse mackerel on the Agulhas Bank. Other fishing sectors classified as “offshore” include a tuna bait and pole fishery for longfin and yellowfin tuna (operating from the Cape Town area), a large pelagic longline fishery for tuna, shark and billfish (operates around the whole coast and beyond the EEZ) and a restricted demersal longline fishery for Patagonian toothfish within the EEZ around the Prince Edward Islands.

The main commercial stocks fished in South Africa are sardine and anchovy, Cape hake, horse mackerel, rock lobster (“west” and “south” coast species), tunas and shark, loligo squid and a large group collectively referred to as “linefish”.

The largest sector by volume, the anchovy and sardine fishery, is closely associated with the Benguela Current ecosystem and in particular the high productivity of the upwelling on the west coast. To a lesser extent, the Agulhas Current ecosystem also plays a role with spawning and recruitment of both anchovy and sardine occurring in late spring and early summer. As is common in such fisheries with species that are short-lived, the biomass of both stocks fluctuates significantly from year to year – recruitment is sensitive to environmental conditions.

Table 1: South Africa capture production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	13 211	7 131	9 880	6 328	10 809
Cephalopods	7 111	7 109	9 587	1 177	14 172
Crustaceans	2 546	2 334	1 899	1 746	2 305
Demersal Marine Fish	178 103	173 598	174 312	169 791	162 283
Freshwater and Diadromous Fish	900	900	900	900	900
Marine Fish NEI	5 414	5 785	5 231	7 464	5 506

Species group	2014	2015	2016	2017	2018
Molluscs excl. Cephalopods	147	200	148	151	0
Pelagic Marine Fish	401 819	375 255	420 113	342 353	374 570
Other	0	0	0	0	0
TOTAL	609 251	572 312	622 070	529 910	570 545

NEI = Not Elsewhere Included

2.2.2. Aquaculture

Aquaculture management is presently divided into marine-based “mariculture” (managed by the Department of Environmental Affairs and Tourism, branch Marine and Coastal Management) and freshwater “aquaculture” (managed by the Department of Agriculture).

Mariculture operations include the production of abalone, black mussel, oyster, prawn, finfish and seaweed with abalone the most important of these in terms of volume and employment. This is a fast-developing sector and it is estimated that South Africa supplies about 20 percent of the global market for farmed abalone. Abalone culture is well established, centred in the Hermanus area on the Cape south coast. There is also an experimental offshore farm (cage culture) off Gansbaai for salmon as well as new developments in offshore cage culture in Mossel Bay for cob (*Argyrosomus sp.*). There is an established grow-out facility for fingerlings in Gansbaai as well as developing land-based cultures for finfish in East London. In 2018, mariculture production was comprised of abalone (1 037 tonnes), oysters (227 tonnes), mussels (737 tonnes), prawn (11 tonnes), finfish (3 tonnes) and seaweeds (1 834 tonnes). With the introduction of finfish culture, mariculture production is expected to increase substantially.

Freshwater fish culture is severely limited by the supply of suitable water. However, trout or salmon farming is practised in the Western Cape and other highland areas of South Africa. Other freshwater species cultivated on a small scale include catfish (*Clarias gariepinus*) freshwater crayfish and tilapia species. After reaching a record level of 2 200 tonnes in 2003, the total freshwater aquaculture production has declined to a level around 1 900 tonnes in recent years.

Table 2: South Africa aquaculture production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	2 000	1 300	2 500	862	1 687
Cephalopods	0	0	0	0	0
Crustaceans	5	4	4	7	4
Demersal Marine Fish	162	77	...	...	...
Freshwater and Diadromous Fish	1 800	1 835	1 873	1 677	2 007
Marine Fish NEI	0	0	0	0	0
Molluscs excl. Cephalopods	3 255	3 514	3 717	3 792	4 171
Pelagic Marine Fish	0	0	0	0	0
Other	0	0	0	0	0
TOTAL	7 222	6 730	8 094	6 338	7 868

NEI = Not Elsewhere Included

2.2.3. Processing

The small pelagic fishery, which is the largest by volume, forms the bulk of the fish production. The sardine catch is used both as bait and is canned - it is a popular protein source, whereas the anchovy is reduced to fishmeal and is either exported or used by the agricultural sector locally (exported volumes are dictated by price).

The demersal fishery for hake dominates the export market with value-adding in processing plants in Saldanha and Cape Town. South African hake is an important contributor to the global whitefish market, exporting mostly to Spain. This market is diversifying into Europe and America particularly since achieving MSC certification. Fresh longline-caught hake is exported directly to Europe and other value-added products (hake mostly) are also important fish products sold locally in supermarkets and fish shops.

There are many smaller processing plants scattered around the coast and in fishing ports. Generally, these do not add much value to the different commercial catches, but process, freeze and pack for export. Similarly, in most of the industrial fisheries, freezer vessels operate processing and packing for direct export – this includes hake, squid and lobster. With respect to the midwater trawl catch of horse mackerel, very little is consumed locally – the product is frozen whole on factory freezers and exported to African countries where there is demand for this bulk product as a source of essential protein. The squid jig fishery also uses sea-based factory freezers and export directly to Europe with only a fraction of the catch being consumed locally. Fresh and frozen lobster exports to Asian markets (mostly Japan, China, and Hong Kong) are also a valuable export commodity.

Table 3: Processed production – South Africa

Volume in tonnes. Source: FAO FishStatJ, 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	6 717	12 022	12 917	3 411	2 381
Crustaceans and molluscs, prepared or preserved	-	-	-	-	-
Fish, dried, salted, or smoked	2 080	1 347	1 860	1 414	1 810
Fish, fresh, chilled or frozen	134 445	116 361	125 841	114 667	110 303
Fish, prepared or preserved	10 085	8 661	9 090	9 346	8 676
Meals	70 000	65 754	78 200	64 600	71 407
Oils	5 977	7 014	6 400	6 996	6 400
TOTAL	229 304	211 159	234 308	200 434	200 977

2.2.4. Consumption

The per capita consumption of fish products in South Africa is relatively low (6.0 kg in 2018). Whereas South Africa’s coastal communities have traditionally had diets high in fish, much of the inland population (which is significantly higher than at the coast) eat relatively little fish.

2.3. International trade³

2.3.1. Exports

South Africa is a major exporter of seafood in Africa. In 2018, the country exported almost 200 000 tonnes worth over USD 716 million. The most important commodity groups were frozen fish (mainly whitefish and small pelagics) and crustaceans.

³ Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FshStatJ. Consequently, figures from the two sources may differ somewhat.

The main exports include fish fillets and lobster products but also crustaceans, tuna, skipjack, bonito, horse mackerel and octopus. Europe (and most notably Spain) is South Africa's leading market for exported fisheries products. Other countries include the United States, Australia, China, Hong Kong and Japan with recent increases in exports to South East Asia. The dominant countries taking South African fish products are:

- Japan – mostly tuna, squid, lobster and abalone
- Spain – whitefish, tuna, squid and all other fish products
- United Kingdom – whitefish and tuna
- United States of America – whitefish, lobster and tuna
- China – whitefish, lobster, fishmeal
- France – whitefish, lobster
- Australia – whitefish, fishmeal
- Mozambique – whitefish, horse mackerel

Table 4: Exports of seafood commodities – South Africa

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	2 337	1 401	2 114	2 217	2 521
Crustaceans & Molluscs, live, fresh, chilled, etc.	187 555	166 453	182 722	195 488	242 366
Crustaceans and molluscs, prepared or preserved	16 431	15 048	18 000	14 985	20 624
Fish, dried, salted, or smoked	9 750	5 554	7 998	7 019	7 766
Fish, fresh, chilled or frozen	286 020	223 816	250 902	244 725	295 623
Fish, prepared or preserved	60 414	43 699	44 213	51 375	43 894
Inedible	126	281	609	712	481
Meals	74 948	52 182	106 866	74 831	94 148
Oils	7 171	10 109	10 555	9 530	8 872
Sponges, corals, shells	223	165	147	418	346
TOTAL	644 975	518 708	624 126	601 300	716 641

Table 5: South Africa exports by destination 2019

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Spain	120 878	77	6 328	127 283	21.1 %
Italy	80 418	4 063	34	84 515	14.0 %
Portugal	42 279	0	0	42 279	7.0 %
USA	36 222	231	75	36 528	6.1 %
Hong Kong	34 803	0	295	35 098	5.8 %
China	26 983	271	7 694	34 948	5.8 %
Australia	22 779	2 220	14	25 013	4.2 %
UK	12 007	0	0	12 007	2.0 %
Netherlands	9 846	0	437	10 283	1.7 %
Mozambique	9 402	2 521	313	12 236	2.0 %
Namibia	8 738	4 968	1	13 707	2.3 %
France	7 937	0	3 067	11 004	1.8 %
Taiwan	7 922	0	2 937	10 859	1.8 %

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Japan	7 807	0	4 306	12 113	2.0 %
Greece	7 604	0	5 765	13 369	2.2 %
Cameroon	7 474	0	0	7 474	1.2 %
Congo DRC	4 220	0	1	4 221	0.7 %
South Korea	3 291	0	136	3 427	0.6 %
Singapore	3 108	0	0	3 108	0.5 %
Botswana	3 046	10 845	8	13 899	2.3 %
Mauritius	2 769	2 362	0	5 131	0.9 %
Eswatini	2 726	4 197	10	6 933	1.2 %
Seychelles	2 186	0	1	2 187	0.4 %
Germany	2 132	5 462	525	8 119	1.3 %
Lesotho	2 094	5 154	2	7 250	1.2 %
Denmark	269	0	13 959	14 228	2.4 %
Turkey	17	0	6 947	6 964	1.2 %
Zambia	1 966	431	2 160	4 557	0.8 %
Israel	1 755	0	1 563	3 318	0.6 %
Zimbabwe	399	102	1 256	1 757	0.3 %
Saudi Arabia	0	0	1 229	1 229	0.2 %
Others	23 956	2 210	997	27 163	4.5 %
TOTAL	497 033	45 114	60 060	602 207	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.2. Imports

South Africa imports large amounts of seafood, including a lot of prepared and preserved fish and crustaceans. However, the value of imports is rather low, which means that they consist of cheaper products.

The major suppliers include Namibia and Morocco as well as China and Argentina. And there are large imports of salmon from Norway, as salmon is now a well-established product in South Africa.

Table 6: Imports of seafood commodities – South Africa

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	2 525	1 704	2 142	2 702	4 260
Crustaceans & Molluscs, live, fresh, chilled, etc.	80 568	60 644	74 551	75 362	76 208
Crustaceans and molluscs, prepared or preserved	19 034	11 418	12 943	15 291	17 681
Fish, dried, salted, or smoked	5 001	5 507	2 262	2 328	3 400
Fish, fresh, chilled or frozen	149 352	120 675	169 701	204 936	244 348
Fish, prepared or preserved	165 993	122 200	97 728	123 400	160 725
Inedible	1 330	539	490	453	602
Meals	3 082	1 532	2 951	1 510	1 127
Oils	1 092	1 281	1 431	1 608	1 577
Sponges, corals, shells	228	155	75	261	64
TOTAL	428 205	325 655	364 274	427 851	509 992

Table 7: South Africa imports by origin 2019

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
Namibia	78 039	16 384	1 115	95 538	19.8 %
Morocco	52 500	297	0	52 797	11.0 %
Norway	28 773	86	191	29 050	6.0 %
China	23 392	23 066	0	46 458	9.6 %
Argentina	17 428	0	593	18 021	3.7 %
New Zealand	11 993	0	0	11 993	2.5 %
USA	11 485	35	0	11 520	2.4 %
India	11 334	0	0	11 334	2.4 %
Russia	8 984	0	0	8 984	1.9 %
Mauritania	7 715	0	0	7 715	1.6 %
Canada	7 191	181	0	7 372	1.5 %
Vietnam	5 778	0	0	5 778	1.2 %
Spain	4 945	104	3 521	8 570	1.8 %
Ecuador	4 820	0	0	4 820	1.0 %
Lesotho	4 798	0	16	4 814	1.0 %
Falklands	3 125	0	0	3 125	0.6 %
Taiwan	2 569	661	0	3 230	0.7 %
Saudi Arabia	2 539	0	0	2 539	0.5 %
Lithuania	2 385	7	0	2 392	0.5 %
Mozambique	2 057	0	3	2 060	0.4 %
Uruguay	1 851	0	127	1 978	0.4 %
Japan	1 621	14	0	1 635	0.3 %
Mauritius	1 369	82	59	1 510	0.3 %
Netherlands	1 209	0	3 375	4 584	1.0 %
Thailand	605	96 213	20	96 838	20.1 %
Poland	347	696	0	1 043	0.2 %
Brazil	15	0	10 733	10 748	2.2 %
UK	579	43	4 891	5 513	1.1 %
France	31	260	3 315	3 606	0.7 %
Denmark	0	28	1 042	1 070	0.2 %
Others	10 256	1 928	2 715	14 899	3.1 %
TOTAL	309 733	140 085	31 716	481 534	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.3. Trade balance

The trade balance shows a marked deficit in terms of volume, but a good surplus in terms of value. However, there is a considerable deficit in both volume and value for prepared or preserved fish.

Table 8: South Africa seafood trade balance 2018

Volume in tonnes; value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	974	6 120	-5 146	2 521	4 260	-1 739
Crustaceans & Molluscs, live, fresh, chilled, etc.	22 694	18 087	4 607	242 366	76 208	166 158
Crustaceans and molluscs, prepared or preserved	532	3 093	-2 561	20 624	17 681	2 943
Fish, dried, salted, or smoked	2 114	918	1 196	7 766	3 400	4 366
Fish, fresh, chilled or frozen	80 382	181 855	-101 473	295 623	244 348	51 275
Fish, prepared or preserved	13 031	65 400	-52 369	43 894	160 725	-116 831
Inedible	323	217	106	481	602	-121
Meals	67 284	840	66 444	94 148	1 127	93 021
Oils	6 141	200	5 941	8 872	1 577	7 295
Sponges, corals, shells	221	40	181	346	64	282
TOTAL	193 696	276 770	-83 074	716 641	509 992	206 649

FISH TRADE STUDY – COUNTRY REPORT

SRI LANKA¹ (DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA)

Area	64 740 km ²
Population 2019 (World Bank)	21 413 249
Coastline	1 340 km
EEZ	532 619 km ²
Total Fish Production MT (FAO, 2018):	541 458
Inland aquaculture (MT)	21 755
Marine aquaculture (MT)	8 845
Total Aquaculture (MT)	30 600
Inland capture fisheries (MT)	87 690
Marine capture fisheries (MT)	422 847
Total capture fisheries (MT)	510 537
Fish Exports Volume & Value (FAO, 2018)	28 337 MT / USD 286.7 million
Fish Imports Volume & Value (FAO, 2018)	94 320 MT / USD 213.4 million
GDP (World Bank, 2018)/ Per capita	USD 87.4 billion / USD 4 135
Fish consumption per capita (2018)	30.84 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

Sri Lanka (formerly known as Ceylon), is an island country in South Asia, located in the Indian Ocean southwest of the Bay of Bengal and southeast of the Arabian Sea. Sri Lanka has been called “the pearl of the Indian ocean” because of its shape and location. It is geographically separated from the Indian subcontinent by the Gulf of Mannar and the Palk Strait. Sri Jayawardenepura Kotte is its legislative capital, and Colombo is its largest city and centre of commerce.

2. Overview of the fisheries sector

Sri Lanka has traditionally relied on fish as an important element of animal protein supply to its population. Apparent per capita fish consumption was estimated to be 30.8 kg/year in 2018. The sector is also a large provider of employment, not only in fishing but also in processing, distribution and trade, as well as boatbuilding and maintenance.

In 2017, 22 898 people were employed in aquaculture with 6 percent of the workforce made up by women. In the fisheries sector, 269 694 people (7 percent women) were employed. The marine fishing fleet in 2016 was composed of 19 764 non-motorized vessels and 30 903 motorized vessels, mostly small vessels less than 12 m. Around 2 000 boats operated in offshore fishing.

2.1. Membership in regional fisheries bodies

- Asia-Pacific Fishery Commission (APFIC)
- Bay of Bengal Programme Inter-Governmental Organization (BOBP-IGO)
- Indian Ocean Tuna Commission (IOTC)
- Network of Aquaculture Centers in Asia-Pacific (NACA)

2.2. Seafood production

2.2.1. Capture fisheries

Total capture fisheries production reached 510 537 tonnes in 2018, of which marine fisheries accounted for about 422 847 tonnes, exceeding the catch levels prior to the destructive tsunami of December 2004. Since the end of war in May 2009, the Northern and Eastern provinces are now fully under government control and the coastal and offshore fishing has commenced. The fish production is increasing, and employment has been created. In the Presidential development programme “Spring of the North” aimed at rehabilitating the war-torn areas, fisheries and aquaculture received high priority.

Fishing is mainly undertaken by small-scale operators in near-shore waters. A successful offshore fleet has developed and exploits tuna stocks in many parts of the Indian Ocean.

Inland capture fisheries production was about 87 690 tonnes in 2018, mainly from water bodies also designed to improve water supplies for the local population and agriculture.

Table 1: Sri Lanka capture production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	3 360	2 560	1 190	1 090	1 100
Aquatic Plants	0	0	0	0	0
Cephalopods	4 140	3 790	4 280	7 930	10 640
Crustaceans	31 870	30 391	37 257	29 669	30 370
Demersal Marine Fish	42 179	41 466	42 902	38 601	31 805
Freshwater and Diadromous Fish	75 750	67 300	73 930	81 870	87 690
Marine Fish NEI	41 180	40 723	44 640	49 604	48 000

Molluscs excl. Cephalopods	2 590	1 545	590	1 040	1 620
Pelagic Marine Fish	326 639	312 627	314 277	294 668	298 983
Other	2 774	1 660	1 865	3 507	329
TOTAL	530 482	502 062	520 931	507 979	510 537

NEI = Not Elsewhere Included

2.2.2. Aquaculture

Aquaculture production was almost 31 000 tonnes in 2018, more than tripled from the 2011 - 2012 average level. Freshwater finfish aquaculture, mainly carps and tilapia, accounted for 72 percent of the total aquaculture production and over 25 percent came from marine shrimp farming.

Table 2: Sri Lanka aquaculture production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	3	61	29	196
Aquatic Plants	9	4 760	199	692	322
Cephalopods	0	0	0	0	0
Crustaceans	5 224	7 160	6 254	4 745	8 285
Demersal Marine Fish	0	0	0	0	0
Freshwater and Diadromous Fish	28 988	24 115	24 460	23 278	22 091
Marine Fish NEI	0	0	0	0	0
Molluscs excl. Cephalopods	0	0	0	12	27
Pelagic Marine Fish	0	0	0	0	0
Other	0	0	0	0	0
TOTAL	34 220	36 038	30 974	28 756	30 921

NEI = Not Elsewhere Included

2.2.3. Processing

There is a considerable production of processed products in Sri Lanka, and production reached almost 90 000 tonnes in 2018. Most of this consisted of dried, salted or smoked products, but an increasing amount is now also being frozen.

Table 3: Processed production – Sri Lanka

Volume in tonnes. Source: FAO FishStatJ, 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	6 770	4 790	5 610	7 550	7 400
Crustaceans and molluscs, prepared or preserved	...	...	...	2	240
Fish, dried, salted, or smoked	71 810	57 450	64 760	60 160	61 250
Fish, fresh, chilled or frozen	18 658	11 810	11 100	16 250	18 030
Fish, prepared or preserved	1 010	810	2 050	3 620	2 725
Meals	520	530	500	110	280
Oils	...	...	...	8	6
TOTAL	98 768	75 390	84 020	87 700	89 931

2.3. Seafood trade²

2.3.1. Exports

In 2018, total exports amounted to 28 337 tonnes worth USD 286.7 million. The most important export commodities were fresh chilled and frozen fish and live, fresh or chilled crustaceans.

The USA is the main market for Sri Lankan seafood, and in 2018 accounted for over 25% of the export value. Other main markets include Japan and the EU.

Table 4: Exports of seafood commodities – Sri Lanka

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	104	85	52	55	82
Crustaceans & Molluscs, live, fresh, chilled, etc.	67 918	44 506	49 877	71 716	77 210
Crustaceans and molluscs, prepared or preserved	5	45	2	36	711
Fish, dried, salted, or smoked	4 172	3 947	3 847	6 525	5 941
Fish, fresh, chilled or frozen	193 120	131 700	128 543	176 966	198 765
Fish, prepared or preserved	580	350	381	480	3 062
Inedible	20	20	-	0 0	-
Meals	1	0 0	2	0 0	0 0
Oils	474	132	240	190	128
Sponges, corals, shells	1 090	897	1 029	966	759
TOTAL	267 484	181 682	183 973	256 934	286 658

Table 5: Sri Lanka exports by destination 2017

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
USA	66 481	33	53	66 567	25.9 %
Japan	20 519	216	0	20 735	8.1 %
Netherlands	16 716	0	0	16 716	6.5 %
Italy	16 127	0	0	16 127	6.3 %
France	14 678	0	0	14 678	5.7 %
Canada	12 685	9	0	12 694	4.9 %
UK	11 465	4	0	11 469	4.5 %
Vietnam	11 163	0	0	11 163	4.4 %
Hong Kong	10 653	30	0	10 683	4.2 %
Taiwan	10 402	0	0	10 402	4.1 %
Germany	9 098	0	0	9 098	3.5 %
Saudi Arabia	7 935	17	0	7 952	3.1 %
Israel	5 721	0	0	5 721	2.2 %
Switzerland	5 179	0	0	5 179	2.0 %
UAE	5 040	0	0	5 040	2.0 %

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FshStatJ. Consequently, figures from the two sources may differ somewhat.

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Thailand	4 474	0	0	4 474	1.7 %
Maldives	3 406	25	0	3 431	1.3 %
Russia	2 503	0	0	2 503	1.0 %
China	1 887	286	0	2 173	0.8 %
Kuwait	1 816	0	0	1 816	0.7 %
Malaysia	1 743	0	0	1 743	0.7 %
Belgium	1 549	0	0	1 549	0.6 %
Australia	1 458	57	0	1 515	0.6 %
South Korea	572	51	0	623	0.2 %
Others	12 460	16	0	12 476	4.9 %
TOTAL	255 730	744	53	256 527	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.2. Imports

Sri Lanka imports only slightly less than it exports. In 2018 total imports amounted to 94 320 tonnes worth USD 213.4 million. The main import commodities were dried, salted or smoked fish, prepared or preserved fish, and fresh, chilled or frozen fish. The main suppliers of seafood to Sri Lanka are China, Thailand, and India.

Table 6: Imports of seafood commodities – Sri Lanka

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	141	203	150	312	154
Crustaceans & Molluscs, live, fresh, chilled, etc.	2 876	3 032	2 979	3 176	4 920
Crustaceans and molluscs, prepared or preserved	0 0	2	6	12	47
Fish, dried, salted, or smoked	68 300	81 586	98 533	94 835	93 971
Fish, fresh, chilled or frozen	34 347	51 142	70 872	58 603	46 531
Fish, prepared or preserved	39 456	87 578	66 151	62 978	53 334
Inedible	3 052	6 305	5 336	5 180	6 930
Meals	8 397	8 906	8 224	6 362	4 480
Oils	2 335	2 316	2 667	2 930	3 049
Sponges, corals, shells	2	5	2	8	0 0
TOTAL	158 906	241 075	254 920	234 396	213 416

Table 7: Sri Lanka imports by origin 2017

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
Thailand	49 834	680	50	50 564	21.7 %
India	16 860	29	266	17 155	7.4 %
China	15 954	57 308	381	73 643	31.6 %
Maldives	13 213	0	785	13 998	6.0 %
UAE	12 822	0	0	12 822	5.5 %
Vietnam	8 623	0	12	8 635	3.7 %

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
Taiwan	7 748	0	0	7 748	3.3 %
Indonesia	6 517	0	0	6 517	2.8 %
Yemen	4 144	0	0	4 144	1.8 %
Pakistan	3 797	0	734	4 531	1.9 %
Oman	3 080	0	0	3 080	1.3 %
Seychelles	2 513	1	1 448	3 962	1.7 %
Iran	2 149	0	0	2 149	0.9 %
Japan	1 418	344	0	1 762	0.8 %
South Korea	1 270	0	13	1 283	0.5 %
Norway	1 163	0	37	1 200	0.5 %
Chile	194	4 514	0	4 708	2.0 %
Spain	54	29	0	83	0.0 %
Malaysia	173	27	564	764	0.3 %
Italy	0	3	4 619	4 622	2.0 %
Australia	244	7	1 692	1 943	0.8 %
Austria	0	0	620	620	0.3 %
Denmark	0	5	613	618	0.3 %
USA	392	1	609	1 002	0.4 %
Brazil	24	1	449	474	0.2 %
Others	4 432	29	816	5 277	2.3 %
TOTAL	156 618	62 978	13 708	233 304	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.3. Trade balance

Sri Lanka's seafood trade balance shows a volume deficit and a value surplus, indicating that it imports cheap products and exports more expensive commodities.

For most products except fresh, chilled or frozen fish, Sri Lanka has a negative trade balance in terms of value. Because of the relatively high export prices of these products, the total trade balance is positive.

Table 8: Sri Lanka seafood trade balance 2018

Volume in tonnes; value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	54	19	35	82	154	-72
Crustaceans & Molluscs, live, fresh, chilled, etc.	7 404	2 376	5 028	77 210	4 920	72 290
Crustaceans and molluscs, prepared or preserved	31	25	6	711	47	664
Fish, dried, salted, or smoked	512	35 046	-34 534	5 941	93 971	-88 030
Fish, fresh, chilled or frozen	18 525	18 877	-352	198 765	46 531	152 234
Fish, prepared or preserved	1 477	28 068	-26 591	3 062	53 334	-50 272
Inedible	0	4 600	-4 600	0	6 930	-6 930
Meals	0	5 239	-5 239	0	4 480	-4 480

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Oils	5	70	-65	128	3 049	-2 921
Sponges, corals, shells	329	0	329	759	0	759
TOTAL	28 337	94 320	-65 983	286 658	213 416	73 242

FISH TRADE STUDY – COUNTRY REPORT

TANZANIA¹ (UNITED REPUBLIC OF TANZANIA)

Area	945,087 km ²
Population 2019 (World Bank)	59.7 million
Coastline	1,424 km
EEZ	241 888 km ²
Total Fish Production MT (2018)	391 278
Inland aquaculture (MT)	312,228
Marine aquaculture (MT)	63,527
Total aquaculture (MT)	16,527
Inland capture (MT)	312 228
Marine capture (MT)	63 527
Total capture (MT)	375 755
Number of fish farmers (FAO, 2018)	22,000
Fish Exports Volume & Value (FAO, 2018)	54,308 MT / USD 213 million
Fish Imports Volume & Value (Govt, 2019) ²	22,750 MT / USD 19.57 million
GDP (World Bank, 2019) / per capita	USD 53.2 billion / USD 975
Fish consumption per capita (FAO, 2018)	kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

² Source: Government Policy Brief, 2019 https://www.mifugouvuvu.go.tz/uploads/publications/en1595939454-CAPTURE%20FISH%20POLICY%20BRIEF_BRANDED%2014.06.2019.pdf

1. Background

Tanzania, being the thirteenth largest country in Africa, is located on the Indian Ocean Coast of East Africa. The country has borders with eight countries: Kenya and Uganda to the north, Rwanda, Burundi, and the Democratic Republic of Congo to the West, Zambia to the south west, and Malawi and Mozambique to the south. The country has a coastline of 1 424 km, and an Exclusive Economic Zone covering 241 888 km². The country has maritime borders with Kenya, Comoros, Seychelles and Mozambique – which are all member states of IORA. Tanzania is well endowed with inland waters and lakes, with a total area of 64 500 km². It shares the waters of important rift valley lakes with its neighbours, of which Lakes Victoria, Tanganyika and Nyasa are some of the world's largest inland water bodies.

Tanzania has one of the rapidly growing populations in Africa, now fifth in terms of population size, having grown from 44.3 million in 2010 to 59.7 million in 2019. The country's economic growth has also been one of the fastest in Africa. Its GDP has almost doubled since the last decade from USD 32.0 billion in 2010 to a record USD 53.2 billion in 2019, hence the country has now entered into the lower-middle income bracket as from 2019, according to the World Bank. However, the country's solid macroeconomic performance during the past decade is now being threatened by the COVID-19 pandemic, which has impacted primarily the travel and tourism sector, commodity prices, trade and foreign direct investment. Despite better economic fortunes, about 24 percent of Tanzanians remain below the national poverty line. Mining and agriculture are the mainstays of the economy, but agriculture (including fisheries) remain the main sources of employment, accounting for about half of the employed workforce and a quarter of GDP.

2. Overview of the fisheries sector

Tanzania is endowed with rich marine and inland waters that yield a wide range of living aquatic resources, providing livelihoods, food security, export revenues, and potential for further economic development – thus contributing to Sustainable Development Goals (SDGs). The fishery sector can be divided into the following subsectors: marine and inland capture fisheries, aquaculture, and fish processing.

2.1. Membership in regional fisheries bodies

- Committee on Inland Fisheries and Aquaculture of Africa (CIFAA)
- Indian Ocean Tuna Commission (IOTC)
- International Whaling Commission (IWC)
- Lake Tanganyika Authority (LTA)
- Lake Victoria Fisheries Organization (LVFO)
- Southwest Indian Ocean Fisheries Commission (SWIOFC)

2.2. Seafood production

According to FAO statistics, Tanzania's total fisheries production has increased from 359 000 tonnes in 2010, to around 391 000 tonnes in 2018. About 84% is from inland fisheries, 12% from marine fisheries and 4% from aquaculture (2018).

The sector's contribution to GDP for 2018 was 1.7%. The sector contributes about 10% of the national export earnings. Fish provides around 30% of total animal protein consumption. In terms of employment, for past 10 years the estimated population employed in fishing industry is around 202 050 fishers operating about 60 000 artisanal fishing vessels. The marine fisheries support about 53 000 artisanal fishermen operating almost 9 200 fishing vessels. Inland water employs about 146 000 fishers operating in about 50 000 fishing vessels. The sector also offers indirect jobs to about 4.5 million people, especially in other fisheries related activities (spin-offs) such as fish processing, marketing, boat building etc.

2.2.1. Capture fisheries

Over the past few years, capture fisheries production has hovered around 375 000 tonnes per year. The bulk of this comes from freshwater fisheries, mainly Lake Victoria, where Nile perch and dagaa are the main species. However, the Lake Victoria fisheries has been under pressure for various reasons, and landings from this fishery are declining.

Marine fisheries yield limited tonnage, dominated by various demersal species as well as some pelagic fish (including some tuna). There is a limited production of shrimp.

Table 1: Tanzania capture fisheries production

Volume in tonnes. Source: FAO FishStatJ 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	450	586	550	660	600
Cephalopods	1 908	2 413	2 399	2 061	3 387
Crustaceans	1 856	1 994	1 979	2 020	1 963
Demersal Marine Fish	26 305	27 007	26 936	26 080	25 686
Freshwater and Diadromous Fish	278 933	309 924	312 039	331 175	312 228
Marine Fish NEI	3 504	1 900	1 937	1 470	1 350
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	28 220	31 213	24 713	24 546	30 541
Others	836	413	600	1 014	-
TOTAL	342 012	375 450	371 153	389 026	375 755

NEI = Not Elsewhere Included

2.2.2. Aquaculture

There is limited aquaculture production in Tanzania, which in recent years has produced about 15 000 – 20 000 tonnes per year. Freshwater species are dominating.

Over the years, there have been some attempts at starting shrimp farming in the Ruffiji delta, but these attempts have stranded, partly because of political involvement, partly on lack of professional expertise and lack of finance. A very limited production of shrimp does take place, however, and it is considered that the potential is much greater than what has been realized so far.

Table 2: Tanzania aquaculture production

Volume in tonnes. Source: FAO FishStatJ 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	6 705	6 750	7 500	7 800	1 330
Cephalopods	0	0	0	0	0
Crustaceans	391	248	347	452	373
Demersal Marine Fish	0	0	0	0	0
Freshwater and Diadromous Fish	3 221	3 744	4 700	11 350	15 150
Marine Fish NEI	0	0	0	0	0
Molluscs excl. Cephalopods	0	0	0	0	0
Pelagic Marine Fish	0	0	0	0	0
Other	0	0	0	0	0
TOTAL	10 317	10 742	12 547	19 602	16 852

NEI = Not Elsewhere Included

2.2.3. Processing

Most of the processing taking place in Tanzania is based on traditional methods such as drying and smoking. There is some filleting and freezing being done along the shores of Lake Victoria, using Nile perch particularly as the raw material. Other production on Lake Victoria includes drying of dagaa, which is a very important and popular product in the region.

Table 3 Tanzania processed production

Volume in tonnes. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	288	684	2 726	5 284	1 268
Fish, dried, salted, or smoked	9 669	7 848	12 182	1 091	11 729
Fish, fresh, chilled or frozen	33 397	32 522	21 692	5 833	23 252
Meals	-	110	1 587	414	1 848
TOTAL	43 354	41 164	38 187	12 622	38 097

2.3. Domestic demand and consumption

Domestic fish demand is high in Tanzania in relation to the growing population, which is now 59.7 million (2019). Fish contributes about 24.4% of the total animal protein intake nationally. Tanzania's current fish consumption rate is 6.8 kg per capita, compared to global rate of 20.3 kg.

Domestic markets for fish and fishery products are diverse and widespread, ranging from formal urban wholesalers, retailers, fish shops, restaurants, hotels etc – to informal markets such as roadside and landing site vending.

Aside from Nile perch, which is processed mainly for export markets, most other freshwater finfishes such as tilapia, catfish and others are sold to the domestic market. Good quality sun-dried dagaa (a small pelagic from Lake Victoria) is particularly important for low-income consumers across the country. In several places, women buy fresh dagaa which is then salted, smoked and fried for home use and for street-side vending. Tilapia, which is one of the most favoured fish species in Tanzania, is widely found on local fish markets in both fresh and frozen form. Smoked, dried and salted tilapia products are also widespread.

A range of other marine finfishes, caught by artisanal fishers, are sold on the domestic market by seafood retail outlets mostly located in Dar es Salaam and other large urban centres. Some of the high value marine fish products such as crabs, lobsters, octopus, squid and shrimps feature on the local high-end seafood retail outlets, restaurants and hotels.

2.4. Seafood trade³

There is a good regional export market for Tanzanian fish products, operated by small-scale fish processors and traders. This is mostly informal. The DRC, with its large population and insatiable demand for fish, remains an important destination for most fish products from Tanzania, especially in dried but also frozen form.

Constructed in 2005, the Kirumba fish market remains a central hub for the trade of various dried fish products, mostly dagaa. The market receives fish and other fishery products from different fish landing sites located in and around Mwanza, Geita, Kagera, and the Mara Regions. Fishers and other

³ Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and in some cases adjusted the figures reported in FishStatJ. Consequently, figures from the two sources may differ somewhat.

processors bring their processed products to the market and sell to buyers who then deliver them to various destinations nationwide. Huge consignments will then find their way to East and Southern African countries (mostly Uganda, DRC Congo, Burundi, Rwanda, Kenya, Zambia and Malawi). Much of the trade is informal, and there are few reliable statistics available on traded quantities.

2.4.1. Exports

The country's total exports of fish and fishery products in 2018 were 54,308 tonnes valued at US\$213 million (Table 4 below). The export of Nile perch products, including maws (dried swim-bladders) has been stable or declining slightly in recent years. Nile perch fillets remain the most exported product in terms of volume and also accounting for just over 60% of total export revenue from fish and fishery products, according to FAO statistics of 2018. The EU remains the major destination of Nile perch fillets (in both fresh and frozen form). Tanzania is the biggest supplier of Nile perch products to the EU followed by Uganda and Kenya.

Tanzania also exports other high value species such as crabs, prawns, octopus, lobsters and squid to various destinations including the EU and Asian countries. There is also a flourishing ornamental fish export business in Tanzania. Raw and processed tuna products are also exported to various international destinations. Farmed seaweed is exported in dried form, mainly to the EU.

Table 4: Tanzania exports by major commodities

Value in USD 1000. Source: ITC TradeMap

Commodity	2014	2015	2016	2017	2018
Aquatic plants	2 500	2 799	5 219	5 830	6 127
Crustaceans & Molluscs, live, fresh, chilled, etc.	7 490	7 519	13 716	17 317	24 466
Crustaceans and molluscs, prepared or preserved	19	98	450	131	377
Fish, dried, salted, or smoked	7 395	3 802	5 027	16 990	36 730
Fish, fresh, chilled or frozen	149 900	147 144	118 042	147 035	145 313
Fish, prepared or preserved	1	0 0	0 0	2	3
Inedible	-	0 0	0 0	-	8
Meals	248	25	11	21	41
Oils	59	-	-	-	-
Sponges, corals, shells	351	331	157	42	66
TOTAL	167 963	161 718	142 622	187 368	213 131

In recent years, Tanzania's seafood exports have been diverted towards the Asian market, and in 2019, Hong Kong was the largest market in terms of value. The European Union, however, still maintains a strong market position for seafood from Tanzania.

The more traditional products, such as dried fish (dagaa) are exported to neighbouring countries like Kenya, Uganda, and the DRC. Much of the trade to DRC is informal, though, and therefore does not appear in official statistics.

Table 5: Tanzania exports by destination 2019

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Hong Kong	36 016	0	0	36 016	23.0 %
Netherlands	25 826	0	0	25 826	16.5 %
Portugal	13 528	0	0	13 528	8.6 %
Spain	11 255	0	0	11 255	7.2 %
UAE	10 506	0	0	10 506	6.7 %

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Italy	10 138	0	0	10 138	6.5 %
Israel	8 257	0	0	8 257	5.3 %
Belgium	4 210	0	0	4 210	2.7 %
China	3 922	0	0	3 922	2.5 %
Romania	3 862	0	0	3 862	2.5 %
Japan	3 845	0	0	3 845	2.5 %
Greece	3 433	0	0	3 433	2.2 %
Germany	2 307	0	0	2 307	1.5 %
Uganda	2 235	0	0	2 235	1.4 %
Vietnam	2 219	0	0	2 219	1.4 %
Kenya	1 976	0	60	2 036	1.3 %
Cyprus	1 780	0	0	1 780	1.1 %
France	1 623	0	0	1 623	1.0 %
Australia	1 298	0	0	1 298	0.8 %
Saudi Arabia	1 289	0	0	1 289	0.8 %
USA	86	3	0	89	0.1 %
Others	7 017	0	1	7 018	4.5 %
TOTAL	156 628	3	61	156 692	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.4.2. Imports

Imports of fish products have recorded a general decline from 2015 to 2018, but are now showing signs of increasing again. According to FAO figures, Tanzania in 2018 imported about 12 110 tonnes of fish with a value of USD 10.4 million. The country imports mainly frozen marine mackerels and farmed tilapia from Asian countries⁴. These are mostly low-value products for domestic consumption. However, some of these products find their way to regional markets, especially to the DRC.

Table 5: Tanzania imports by major commodities

Value in USD 1000. Source: ITC TradeMap

Commodity	2014	2015	2016	2017	2018
Aquatic plants	12	3	6	0 0	2
Crustaceans & Molluscs, live, fresh, chilled, etc.	1	54	66	2	61
Crustaceans and molluscs, prepared or preserved	2	18	2	16	12
Fish, dried, salted, or smoked	15	19	12	6	7
Fish, fresh, chilled or frozen	17 986	17 121	21 627	14 547	10 250
Fish, prepared or preserved	112	111	52	30	79
Inedible	-	0 0	2	0 0	0 0

⁴

https://www.mifugouvuvu.go.tz/uploads/publications/en1595939454-CAPTURE%20FISH%20POLICY%20BRIEF_BRANDED%2014.06.2019.pdf

Commodity	2014	2015	2016	2017	2018
Meals	20	0 0	1	-	1
Oils	31	11	12	7	11
Sponges, corals, shells	0 0	0 0	-	0 0	-
TOTAL	18 179	17 337	21 780	14 608	10 423

Table 6: Tanzania imports by origin 2019

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
China	5 759	0	0	5 759	55.6 %
Japan	1 851	0	0	1 851	17.9 %
South Korea	1 744	0	0	1 744	16.8 %
Spain	590	0	0	590	5.7 %
Yemen	247	0	0	247	2.4 %
South Africa	33	4	0	37	0.4 %
Oman	26	0	0	26	0.3 %
Norway	7	0	0	7	0.1 %
Sri Lanka	3	0	0	3	0.0 %
Thailand	0	52	1	53	0.5 %
UK	0	18		18	0.2 %
UAE	3	3	2	8	0.1 %
Others	7	2	0	9	0.1 %
TOTAL	10 270	79	3	10 352	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.4.3. Trade balance

Tanzania has a positive trade balance, both in terms of volume and value. The largest surplus is produced by fresh, chilled or frozen fish, followed by dried, salted or smoked products.

Table 7: Trade balance – Tanzania

Volume in tonnes. Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	10 942	0	10 942	6 127	2	6 125
Crustaceans & Molluscs, live, fresh, chilled, etc.	2 591	53	2 538	24 466	61	24 405
Crustaceans and molluscs, prepared or preserved	16	1	15	377	12	365
Fish, dried, salted, or smoked	10 323	1	10 322	36 730	7	36 723
Fish, fresh, chilled or frozen	27 666	12 018	15 648	145 313	10 250	135 063
Fish, prepared or preserved	1	37	-36	3	79	-76
Inedible	0	0	0	8	0	8
Meals	989	0	989	41	1	40

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Oils	0	0	0	0	11	-11
Sponges, corals, shells	1 780	0	1 780	66	0	66
TOTAL	54 308	12 110	42 198	213 131	10 423	202 708

FISH TRADE STUDY – COUNTRY REPORT

THAILAND¹ (KINGDOM OF THAILAND)

Area	511 770 km ²
Population 2019 (World Bank)	69 799 978
Coastline	2 624 km
EEZ	299 397 km ²
Total Fish Production MT (FAO, 2018):	2 598 000
Inland aquaculture (MT)	412 284
Marine aquaculture (MT)	478 582
Total Aquaculture (MT)	890 864
Inland capture fisheries (MT)	196 200
Marine capture fisheries (MT)	1 510 936
Total capture fisheries (MT)	1 707 136
People employed in industrial fisheries	800 000
Fish Exports Volume & Value (FAO, 2018)	1 394 091 MT / USD 6 .1 billion
Fish Imports Volume & Value (FAO, 2018)	2 129 605 MT / USD 2.0 billion
GDP (World Bank, 2018) /Per capita	USD 455.3 billion / USD 6 579
Fish consumption per capita (FAO 2018)	29.17 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

Thailand, formerly known as Siam, is a country in Southeast Asia. Located at the centre of the Indochinese Peninsula, it is composed of 76 provinces spanning 511 770 square kilometres, with a population of almost 70 million. The capital and largest city is Bangkok, a special administrative area. Thailand is bordered to the north by Myanmar and Laos, to the east by Laos and Cambodia, to the south by the Gulf of Thailand and Malaysia, and to the west by the Andaman Sea and the southern extremity of Myanmar. Its maritime boundaries include Vietnam in the Gulf of Thailand to the southeast, and Indonesia and India on the Andaman Sea to the southwest. Nominally, Thailand is a constitutional monarchy and parliamentary democracy; however, in recent history, its government has experienced multiple coups and periods of military dictatorships.

2. Overview of the fisheries sector

Fisheries and aquaculture have a highly significant social, economic and nutritional role for the 70 million people of the Kingdom of Thailand. Fish is one of the most significant sources of animal protein for most Thai people. Average annual per capita fish consumption was estimated at 29.2 kg in 2018. An estimated total of 445 000 people were engaged in the aquaculture and marine fishing sector in 2017. The fishing fleet was estimated in 2017 as being composed of 25 002 marine fishing vessels, equipped with engines.

As an upper middle income developing country, Thailand is a leader in fisheries innovation, in such areas as aquaculture certification and post-harvest handling of fish and fishery products to secure export markets in developed countries.

2.1. Membership in regional fisheries bodies

- Asia-Pacific Fishery Commission (APFIC)
- Indian Ocean Tuna Commission (IOTC)
- Mekong River Commission (MRC)
- Network of Aquaculture Centers in Asia-Pacific (NACA)
- Southeast Asian Fisheries Development Center (SEAFDEC)

2.2. Seafood production

In 2018, Thailand's total fishery production was estimated at 2.6 million tonnes, with marine and inland capture fisheries contributing 1.7 million tonnes and aquaculture production contributing around 0.9 million tonnes. In 2018, total catch in marine and inland waters was 1.5 and 0.2 million tonnes, respectively. In 2017, the farming production of marine shrimp represented almost 40 percent of the total inland and marine culture production, slightly recovering (344 100 tonnes) after the substantially drop from over 600 000 tonnes in 2011 and 2012 due to a serious crop failure caused by the widespread of the early mortality syndrome (acute hepatopancreatic necrosis disease of *Vibrio parahaemolyticus* aetiology, OIE 2019). This brought Thailand down from the world's second largest producer of cultured marine shrimps to 6th position in 2017.

2.2.1. Capture fisheries

Inland capture fisheries are carried out principally in rivers, lakes, swamps and reservoirs. These fisheries have long been part of Thai culture and are an important source of animal protein for the rural people. Most fisherfolks in this sub-sector are small-scale. Only fishing in large impoundments is commercial in nature. In 2018, inland capture fisheries amounted to 196 200 tonnes. Fishing gears used include gillnets, longlines, hook-and-line, scoop nets, cast nets, and lift nets. Among these fishing gears, gillnets are the most popular and efficient, particularly in swamps and reservoirs. Thai silver barb, snakehead, walking catfish, local carps, and Nile tilapia are caught.

The marine fisheries are classified into small-scale fisheries and commercial fisheries. The commercial fisheries use inboard-powered boats of over 5 gross tonnage, generally deploy efficient fishing gears and have the capacity to fish offshore and spend several days at sea. The typical fishing gears employed are medium- to large-size trawls, purse seines, encircling gillnets and large drift nets. The small-scale fisheries use boats that are less than 5 gross tonnage and are either non-powered or have outboard or inboard engines.

Most small-scale fishermen operate near shore and use traditional fishing gears. The typical fishing gears are small trawls, gillnets, push nets, lift nets, set bag nets, traps, hook-and-line and other stationary gears that operate in estuaries, bays and inshore waters. A census survey of marine fisheries carried out in 2000 established the total number of fishing boats to 58 119 of which 80 percent were small-scale.

Most demersal resources and some groups of pelagic fish are over-exploited. Furthermore, the catch rates recorded by government research vessels have shown decreasing trends since 1966.

In the Gulf of Thailand, pelagic fish are caught by bamboo stake traps, purse seines, mackerel encircling gillnets and drift nets. Important pelagic fish are mackerels (*Rastrelliger spp.*), round scads (*Decapterus spp.*), sardines (*Sardinella spp.*), anchovies (*Encrasicholina spp.* and *Stolephorus spp.*), Spanish mackerel (*Scomberomorus spp.*) and tunas (*Thunnus spp.* and *Euthynnus spp.*). In the past, Indo-Pacific mackerel (*Rastrelliger brachysoma*) was the most popular fish for Thai consumers. Large quantities of Indo-Pacific mackerel were caught and accounted for about 47 percent of pelagic fish catches. Indo-Pacific mackerel (*Rastrelliger brachysoma*) stocks in the Gulf of Thailand have been fully exploited and sardines (*Sardinella spp.*) have been over-exploited.

Table 1: Thailand capture production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	65 195	76 649	64 019	61 107	58 392
Aquatic Plants	0	0	0	0	0
Cephalopods	100 914	90 987	108 988	98 093	117 766
Crustaceans	69 834	59 588	81 064	73 223	86 146
Demersal Marine Fish	188 968	151 341	126 834	121 783	136 881
Freshwater and Diadromous Fish	180 807	183 043	186 121	190 988	195 151
Marine Fish NEI	458 580	405 866	388 588	370 799	447 865
Molluscs excl. Cephalopods	18 322	16 661	22 760	20 131	23 432
Pelagic Marine Fish	587 415	517 235	552 170	564 323	641 503
Other	0	0	0	0	0
TOTAL	1 670 035	1 501 370	1 530 544	1 500 447	1 707 136

NEI = Not Elsewhere Included

2.2.2. Aquaculture

Historically, freshwater aquaculture has been important in Thailand. Today both coastal and freshwater aquaculture thrive. Coastal aquaculture has been important since 1988 when intensive marine shrimp culture developed rapidly. In 2018 total aquaculture production reached about 891 000 tonnes, valued at USD 2.7 billion.

Coastal aquaculture is practised in the interface between freshwater and seawater. The rapid growth of coastal aquaculture is mainly due to the increasingly rapid development in culture technology. In addition, many of the marine shrimp, shellfish and marine finfish cultured have relatively high prices and a large market.

Marine shrimp is the predominant species and makes a major contribution to export earnings. Over 90 percent of the cultured marine shrimp are exported. In 2018 production was 384 400 tonnes, valued at about USD 1.9 billion. Once dominated by giant tiger prawn (*Penaeus monodon*), the marine shrimp production has recently been overwhelmingly dominated by the whiteleg shrimp (*Litopenaeus vannamei*) in recent years.

Most of the cultured molluscs are bivalves. In 2018 production was around 93 000 tonnes. Marine finfish culture is composed mainly of barramundi (*Lates calcarifer*) and groupers (*Epinephelus spp.*).

In Thailand freshwater aquaculture started a long time ago. At that time, the species cultured were few; they included common carp (*Cyprinus carpio*), snakeskin gourami (*Trichogaster pectoralis*) and striped catfish (*Pangasius hypophthalmus*). From 1963 onwards, freshwater fish culture developed rapidly, following the breakthrough in artificial breeding obtained by successful hormone injection of many valuable species. Since 1984, the artificially propagated hybrid catfish (*Clarias gariepinus x C. macrocephalus*) has been cultured commercially and increasingly gained popularity among farmers. For more than a decade, the hybrid catfish has been the second most important species for freshwater aquaculture in the country, only next to Nile tilapia.

Freshwater aquaculture is carried out either as monoculture or polyculture, depending on the species cultured. Monoculture is common for raising of carnivorous species such as hybrid catfish and snake-head, but also for freshwater prawn, striped catfish, and sand goby. Polyculture is employed principally to raise herbivorous and filter-feeding species, such as tilapia, silver barb, common carp, Chinese carps, and mrigala (a carp endemic to Indo-Gangetic riverine systems). In the past, fish farming integrated with pig, poultry and horticulture, wherever possible, were encouraged and promoted. And so was the paddy-cum-fish culture. Integrated fish farming became a common practice in Thailand. However, in recent years, fish farming directly integrated with pig and poultry has been discouraged as part of the continuous nation-wide food safety campaign and promotion of good aquaculture practices (GAP).

Table 2: Thailand aquaculture production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	3 303	4 300	4 476	4 156	2 930
Aquatic Plants	0	0	0	0	0
Cephalopods	0	0	0	0	0
Crustaceans	296 913	311 075	342 611	381 212	384 567
Demersal Marine Fish	2 646	2 293	2 176	2 001	2 009
Freshwater and Diadromous Fish	411 417	408 243	416 207	408 146	408 282
Marine Fish NEI	15	5	0	201	0
Molluscs excl. Cephalopods	183 571	194 407	197 203	98 258	93 076
Pelagic Marine Fish	0	0	0	0	0
Other	0	0	0	0	0
TOTAL	897 865	920 323	962 673	893 974	890 864

NEI = Not Elsewhere Included

2.2.3. Processing

The fish processing industry has grown significantly during the past two decades, especially freezing and canning in support of export growth. Thailand today has very modern and some very large processing plants, including one of the largest tuna canning plants in the world. However, in 2006 over 85 percent of the 2 334 plants were small, traditional plants (i.e. producing fish sauce or smoking and drying fish). Today there are numerous larger, modern processing plants.

Table 3: Processed production – Thailand

Volume in tonnes. Source: FAO FishStatJ, 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	171 493	160 295	184 035	169 950	138 905
Crustaceans and molluscs, prepared or preserved	107 310	108 600	106 540	90 820	75 030
Fish, dried, salted, or smoked	71 056	71 220	67 955	67 250	73 300
Fish, fresh, chilled or frozen	722 264	642 400	643 400	631 450	679 750
Fish, prepared or preserved	1 034 828	1 025 553	997 797	909 651	964 111
Meals	460 000	460 000	386 300	366 000	379 000
Oils	23 000	21 390	11 738	6 800	7 200
TOTAL	2 589 951	2 489 458	2 397 765	2 241 921	2 317 296

2.2.4. Consumption

Fish is the primary source of animal protein for most of Thailand’s population, particularly in the coastal and near-coastal provinces. In 2018, per caput fish consumption was 29.2 kg, which is relatively high compared to the consumption of the other three main animal protein commodities, namely pork, beef, and chicken. Price is a decisive factor influencing consumers’ choice of product and in Thailand the price of fish generally is relatively low compared to other sources of animal protein. However, the level of per caput fish consumption varies among Thai people. Differences may be explained by differences in household income or species preference and by geographic location.

2.3. Seafood trade²

In the past decade, the growth of international fish trade has been remarkable. From 1999 to 2001 Thailand ranked as the world’s leading exporter of edible fisheries products, and since then it is the number four exporting nation in the world, after China, Norway and Vietnam.

2.3.1. Exports

For some years now Thailand has been among the largest seafood exporters in the world, after China and Norway. This is due in part to a large production of exportable products, such as farmed shrimp, but also because of the large and very advanced processing industry.

In 2018, fish exports were valued at USD 6.1 billion. The major markets for Thai fish products are Japan, China, the USA and the EU. Of the total export value, shrimp products and canned tuna contributed 36 percent and 27 percent, respectively. However, the country’s balance of payment is also burdened by payments for significant quantities of tuna that are imported for processing and re-export.

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and in some cases adjusted the figures reported in FshStatJ. Consequently, figures from the two sources may differ somewhat.

Table 4: Exports of seafood commodities – Thailand

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	5 521	5 965	5 294	5 676	6 329
Crustaceans & Molluscs, live, fresh, chilled, etc.	1 423 506	1 153 326	1 446 155	1 559 257	1 423 521
Crustaceans and molluscs, prepared or preserved	1 228 053	1 057 103	1 080 085	1 082 406	929 996
Fish, dried, salted, or smoked	110 208	95 066	104 891	90 328	79 142
Fish, fresh, chilled or frozen	573 369	487 766	470 992	464 358	457 375
Fish, prepared or preserved	3 080 404	2 668 473	2 603 615	2 719 037	3 011 257
Inedible	18 180	16 027	14 662	18 054	19 060
Meals	204 066	204 348	173 897	86 349	131 619
Oils	10 577	11 312	12 994	13 545	16 973
Sponges, corals, shells	3 575	2 402	2 403	2 459	2 164
TOTAL	6 657 459	5 701 788	5 914 988	6 041 469	6 077 436

Table 5: Thailand exports by destination 2019

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Japan	445 157	403 016	22 573	870 746	17.8 %
China	388 827	40 697	59 149	488 673	10.0 %
USA	274 720	631 885	0	906 605	18.5 %
Italy	97 182	9 012	0	106 194	2.2 %
South Korea	86 734	12 540	409	99 683	2.0 %
Hong Kong	65 135	23 436	57	88 628	1.8 %
Taiwan	59 669	18 334	3 169	81 172	1.7 %
Malaysia	56 949	22 624	746	80 319	1.6 %
Canada	46 838	146 913	0	193 751	4.0 %
Australia	46 829	231 402	1 591	279 822	5.7 %
Vietnam	38 521	7 807	17 636	63 964	1.3 %
Sri Lanka	31 877	562	0	32 439	0.7 %
Cambodia	29 526	34 595	403	64 524	1.3 %
UK	26 020	30 384	0	56 404	1.2 %
Myanmar	23 265	13 776	109	37 150	0.8 %
Singapore	20 796	17 820	0	38 616	0.8 %
Saudi Arabia	18 289	127 016	0	145 305	3.0 %
Russia	11 221	17 591	0	28 812	0.6 %
UAE	5 736	62 587	0	68 323	1.4 %
Libya	0	151 465	0	151 465	3.1 %
Egypt	532	138 113	0	138 645	2.8 %
South Africa	487	86 187	0	86 674	1.8 %
Israel	2 162	65 506	0	67 668	1.4 %
Peru	87	63 763	0	63 850	1.3 %
UAE	5 736	62 587	0	68 323	1.4 %

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Chile	364	51 307	0	51 671	1.1 %
Bangladesh	892	195	9 612	10 699	0.2 %
Others	56 149	465 002	791	521 942	10.7 %
TOTAL	1 839 700	2 936 122	116 245	4 892 067	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.2. Imports

Since the Thai fisheries can no longer supply enough raw material to its processing industry, Thailand has to import large amounts of fish for this industry, particularly tuna for the tuna canneries. In 2018, Thai imports of seafood amounted to USD 4.1 billion, and most of this went for processing and re-exports. Thailand is the top importer of fresh, chilled and frozen tuna.

The most important suppliers to Thailand were China, Taiwan and Vietnam. But unlike many other IORA member states, Thailand is not relying on just one or a few suppliers for its imports. Only one country (China) accounts for more than 10 percent of total imports, and eight countries provide between 4 and 10 percent of total imports each. Thus, Thailand is not very vulnerable to changes in trading regimes or relationships with one or two suppliers.

Table 6: Imports of seafood commodities – Thailand

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	48 222	52 715	68 126	87 209	101 801
Crustaceans & Molluscs, live, fresh, chilled, etc.	491 696	480 767	566 102	669 940	790 945
Crustaceans and molluscs, prepared or preserved	43 495	33 253	45 948	57 496	74 146
Fish, dried, salted, or smoked	11 437	12 334	13 907	12 192	15 416
Fish, fresh, chilled or frozen	2 030 345	1 811 460	2 161 143	2 558 434	2 775 413
Fish, prepared or preserved	135 622	137 143	179 578	144 479	182 337
Inedible	48 738	44 584	46 164	44 510	32 899
Meals	21 928	33 168	83 948	76 742	77 472
Oils	8 145	10 205	13 647	17 658	18 025
Sponges, corals, shells	591	340	605	534	405
TOTAL	2 840 219	2 615 969	3 179 168	3 669 194	4 068 859

Table 7: Thailand imports by origin 2019

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
China	321 219	85 986	0	407 205	10.8 %
Taiwan	246 507	250	0	246 757	6.6 %
Vietnam	240 877	55 994	11 383	308 254	8.2 %
India	236 818	0	5 816	242 634	6.4 %
Norway	218 341	57	2 418	220 816	5.9 %
Japan	201 727	11 452	0	213 179	5.7 %
USA	180 309	614	28 766	209 689	5.6 %

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
Pakistan	168 776	0	0	168 776	4.5 %
Myanmar	167 461	0	29 605	197 066	5.2 %
South Korea	140 648	1 279	0	141 927	3.8 %
Micronesia	105 589	118	0	105 707	2.8 %
Chile	102 204	1	427	102 632	2.7 %
Indonesia	94 747	56 575	0	151 322	4.0 %
Malaysia	69 714	4 261	521	74 496	2.0 %
Argentina	69 183	0	90	69 273	1.8 %
Maldives	64 163	0	0	64 163	1.7 %
Peru	63 647	1	806	64 454	1.7 %
Kiribati	55 704	0	0	55 704	1.5 %
Papua New Guinea	50 114	2	0	50 116	1.3 %
Thailand	4 667	8 408	0	13 075	0.3 %
Singapore	401	2 115	0	2 516	0.1 %
Marshall Islands	35 528	1 096	0	36 624	1.0 %
Germany	1 835	70	42 327	44 232	1.2 %
France	18 725	75	28 002	46 802	1.2 %
Spain	13 701	24	18 388	32 113	0.9 %
Italy	889	334	13 064	14 287	0.4 %
Australia	9 585	74	9 959	19 618	0.5 %
UK	7 719	121	9 118	16 958	0.5 %
Netherlands	2 444	1	6 673	9 118	0.2 %
Others	416 254	1 093	17 921	435 268	11.6 %
TOTAL	3 309 496	230 001	225 284	3 764 781	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.3. Trade balance

The total trade balance for Thai seafood is negative in terms of volume but positive in terms of value. This indicates that the country is importing low-priced raw material and exporting more valuable processed products. The exception is fresh, chilled or frozen fish, for which the trade balance is negative also in terms of value.

Table 8: Thailand seafood trade balance 2018

Volume in tonnes; value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	575	6 259	-5 684	6 329	101 801	-95 472
Crustaceans & Molluscs, live, fresh, chilled, etc.	176 333	232 687	-56 354	1 423 521	790 945	632 576
Crustaceans and molluscs, prepared or preserved	105 479	19 223	86 256	929 996	74 146	855 850
Fish, dried, salted, or smoked	33 236	5 236	28 000	79 142	15 416	63 726
Fish, fresh, chilled or frozen	186 354	1 661 725	-1 475 371	457 375	2 775 413	-2 318 038
Fish, prepared or preserved	779 393	43 402	735 991	3 011 257	182 337	2 828 920
Inedible	1 416	87 568	-86 152	19 060	32 899	-13 839

Meals	105 922	62 912	43 010	131 619	77 472	54 147
Oils	4 035	10 000	-5 965	16 973	18 025	-1 052
Sponges, corals, shells	1 348	593	755	2 164	405	1 759
TOTAL	1 394 091	2 129 605	-735 514	6 077 436	4 068 859	2 008 577

FISH TRADE STUDY – COUNTRY REPORT

UNITED ARAB EMIRATES¹

Area	83 600 km ²
Population 2019 (World Bank)	9 890 402
Coastline	1 318 km
EEZ	58 218 km ²
Total Fish Production MT (2018)	76 350
Inland aquaculture (MT)	258
Marine aquaculture (MT)	3 092
Total aquaculture (MT)	3 350
Inland capture fisheries (MT)	0
Marine capture fisheries (MT)	73 000
Total capture fisheries (MT)	73 000
Fish Exports Volume & Value (FAO, 2018)	54 243 MT / USD 269.5 million
Fish Imports Volume & Value (FAO, 2018)	257 768 MT / USD 778.1 million
GDP (World Bank, 2019) / Per capita	USD 382.6 billion / USD 40 325
Fish consumption per capita (FAO, 2018)	24.71 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

The United Arab Emirates (UAE) is a country in Western Asia located at the eastern end of the Arabian Peninsula. It borders on Oman and Saudi Arabia, and has maritime borders in the Persian Gulf with Qatar and Iran. It is a federal elective constitutional monarchy formed from a federation of seven emirates, consisting of Abu Dhabi (which serves as the capital), Ajman, Dubai, Fujairah, Ras Al Khaimah, Sharjah and Umm Al Quwain. Their boundaries have numerous enclaves within each other. Each emirate is governed by a ruler, who together form the Federal Supreme Council, and one of whom serves as President of the United Arab Emirates. In 2020, the UAE's population was 9.9 million, of which 1.4 million were Emirati citizens and 8.5 million were expatriates.

2. Overview of the fisheries sector

The United Arab Emirates (UAE) has a 1 318 km coastline that extends from Oman in the east to Saudi Arabia in the west. The majority of the coastline is in the Gulf, with a smaller coastline in the Gulf of Oman. The Gulf is characterized by warm saline waters that are relatively poor in fish resources.

Although making only a very limited contribution to the economy when compared to the oil and gas sector, fisheries provide an important supply of fish to local communities and urban areas and are considered to have a heritage value. The fisheries of the UAE are almost entirely small-scale. Bottom trawl fishing has been banned since the 1990s. The employment in fisheries increased significantly during the 1990s, and in 2011, around 24 800 persons were involved in fishing, 44 of which were engaged in fish farming. The fishing fleet consisted of around 5 570 boats in 2011.

2.1. Membership in regional fisheries bodies

- Regional Commission for Fisheries (RECOFI)

2.2. Seafood production

Total seafood production in 2018 was estimated to be 76 350 tonnes, of which about 73 000 tonnes came from capture fisheries.

2.2.1. Capture fisheries

Since 2008 total catches have been quite stable around an average of 73 000 tonnes per year. However, the data collection system is mostly based on market information and it may have overestimated the actual catches, in particular those reported in the late 1990s when total capture production exceeded 100 000 tonnes per year. Spanish mackerel, groupers and emperors are the most appreciated and valuable fish species.

Table 1: UAE capture production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	0	0	0	0	0
Cephalopods	150	150	150	150	150
Crustaceans	300	300	300	300	300
Demersal Marine Fish	39 074	38 960	38 960	38 960	38 960
Freshwater and Diadromous Fish	90	90	90	90	90
Marine Fish NEI	2 427	2 420	2 420	2 420	2 420
Molluscs excl. Cephalopods	0	0	0	0	0

Species group	2014	2015	2016	2017	2018
Pelagic Marine Fish	31 162	31 080	31 080	31 080	31 080
Other	0	0	0	0	0
TOTAL	73 203	73 000	73 000	73 000	73 000

NEI = Not Elsewhere Included

2.2.2. Aquaculture

In 2018, aquaculture production was 3 350 tonnes, consisting of gilthead seabream, marine shrimp, tilapia and sturgeon etc. The major development of aquaculture in UAE in recent years was the construction of a large scale in-door aquaculture farm equipped with recirculating aquaculture system (RAS) for sturgeon farming, with the target of up to 30 tonnes of caviar production annually in coming years. It is expected that an increasing number of fishermen and private entrepreneurs will be recruited into the aquaculture sector in the near future.

Table 2: UAE aquaculture production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	0	0	0	0	0
Aquatic Plants	0	0	0	0	0
Cephalopods	0	0	0	0	0
Crustaceans	350	370	312	225	225
Demersal Marine Fish	290	270	2 294	2 665	2 755
Freshwater and Diadromous Fish	148	150	79	290	290
Marine Fish NEI	0	0	0	0	0
Molluscs excl. Cephalopods	0	0	0	5	10
Pelagic Marine Fish	0	0	0	70	70
Other	0	0	0	0	0
TOTAL	788	790	2 685	3 255	3 350

NEI = Not Elsewhere Included

2.2.3. Processing

Very little processing is done in UAE, and most of it uses traditional methods, such as smoking or drying.

Table 3: Processed production – UAE

Volume in tonnes. Source: FAO FishStatJ, 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	1 420	1 520	1 270	1 120	1 450
Fish, dried, salted, or smoked	13 200	13 150	13 200	13 600	13 600
TOTAL	14 620	14 670	14 470	14 720	15 050

2.3. Seafood trade²

UAE has become a trading hub, and this includes seafood to some extent. The country has excellent facilities in the ports and airports, and the airlines of the UAE are flying to just about everywhere in the world, which means that air transportation for fish and seafood is very much available.

2.3.1. Exports

In 2018, UAE exported 54 243 tonnes of seafood, worth USD 269.5 million. Crustaceans was the largest export commodity in terms of value, followed by fresh, chilled or frozen fish.

Saudi Arabia was by far the largest market for UAE seafood exports and accounted for over 35% of the export value. Other main markets included Kuwait, Oman and Iran.

Table 4: UAE exports of seafood by major commodities

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	0	0	0	0	301
Crustaceans & Molluscs, live, fresh, chilled, etc.	56 392	65 419	71 539	27 899	115 805
Crustaceans and molluscs, prepared or preserved	2 607	935	1 078	41 123	75 760
Fish, dried, salted, or smoked	9 462	9 166	9 535	4 953	5 642
Fish, fresh, chilled or frozen	16 259	20 760	22 944	25 852	48 947
Fish, prepared or preserved	2 167	3 851	6 163	16 345	17 811
Inedible	306	0	5	24	0
Meals	230	1 215	1 277	1 152	2 774
Oils	278	275	1 658	2 469	2 414
Sponges, corals, shells	1	2	2	1	0
TOTAL	87 702	101 623	114 201	119 818	269 454

Table 5: UAE exports by destination 2019

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Saudi Arabia	82 686	14 136	0	96 822	35.4 %
Kuwait	19 603	9 477	24	29 104	10.7 %
Oman	18 293	632	0	18 925	6.9 %
Iran	17 208	53	1 190	18 451	6.8 %
Vietnam	8 536	3 173	0	11 709	4.3 %
USA	7 659	118	0	7 777	2.8 %
Jordan	7 312	202	0	7 514	2.8 %
Bahrain	6 064	262	0	6 326	2.3 %
Egypt	4 724	773	2 246	7 743	2.8 %
China	3 610	110	0	3 720	1.4 %
Russia	3 268	1	0	3 269	1.2 %
Sri Lanka	2 494	7 896	63	10 453	3.8 %

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FishStatJ. Consequently, figures from the two sources may differ somewhat.

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Hong Kong	1 649	938	93	2 680	1.0 %
Maldives	1 236	522	1	1 759	0.6 %
Pakistan	848	252	0	1 100	0.4 %
Somalia	68	15 665	0	15 733	5.8 %
Bangladesh	284	4 930	37	5 251	1.9 %
Djibouti	53	2 817	0	2 870	1.1 %
Taiwan	552	2 128	0	2 680	1.0 %
Yemen	62	1 980	0	2 042	0.7 %
Ethiopia	78	1 500	0	1 578	0.6 %
Iraq	546	1 286	30	1 862	0.7 %
Kenya	94	918	0	1 012	0.4 %
Australia	0	914	0	914	0.3 %
India	280	139	1 329	1 748	0.6 %
Others	3 125	6 927	30	10 082	3.7 %
TOTAL	190 332	77 749	5 043	273 124	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.2. Imports

UAE imports large amounts of seafood, both to feed its own population, and for the many tourists that visit the country. The large commodity groups are crustaceans, fresh and chilled fish and prepared or preserved fish.

The largest suppliers include India, Thailand and Norway.

Table 6: Imports of seafood commodities – UAE

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	1 948	1 034	1 385	1 974	2 411
Crustaceans & Molluscs, live, fresh, chilled, etc.	326 998	255 124	276 920	335 843	333 787
Crustaceans and molluscs, prepared or preserved	13 419	14 944	12 381	12 037	13 626
Fish, dried, salted, or smoked	6 230	5 512	5 615	5 504	5 450
Fish, fresh, chilled or frozen	277 735	253 444	269 973	276 132	309 766
Fish, prepared or preserved	94 361	93 541	86 693	105 728	104 397
Inedible	120	68	224	203	537
Meals	90	72	123	105	1 227
Oils	1 187	1 112	1 376	1 596	5 337
Sponges, corals, shells	1 693	1 494	1 365	1 558	1 567
TOTAL	723 781	626 345	656 055	740 680	778 105

Table 7: UAE imports by origin 2019

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
India	188 422	382	3	188 807	25.0 %
Thailand	5 503	65 544	0	71 047	9.4 %
Norway	65 054	423	8	65 485	8.7 %
Vietnam	51 120	1 868	0	52 988	7.0 %
Iran	35 286	478	0	35 764	4.7 %
Pakistan	27 397	0	0	27 397	3.6 %
Oman	26 598	2 341	0	28 939	3.8 %
China	26 592	2 378	0	28 970	3.8 %
Turkey	24 570	29	0	24 599	3.3 %
USA	22 171	2 997	360	25 528	3.4 %
Ghana	16 233	11	0	16 244	2.2 %
Chile	13 783	0	0	13 783	1.8 %
Myanmar	12 742	0	0	12 742	1.7 %
UK	11 969	1 807	8	13 784	1.8 %
Taiwan	9 447	195	0	9 642	1.3 %
Uganda	8 633	0	0	8 633	1.1 %
Somalia	8 358	0	0	8 358	1.1 %
France	7 379	1 200	0	8 579	1.1 %
New Zealand	7 009	61	0	7 070	0.9 %
Philippines	3 847	9 434	0	13 281	1.8 %
Indonesia	3 610	3 102	1	6 713	0.9 %
Italy	794	2 824	0	3 618	0.5 %
Netherlands	1 559	1 791	0	3 350	0.4 %
Yemen	2 081	1 366	0	3 447	0.5 %
Japan	5 422	1 305	0	6 727	0.9 %
Morocco	314	1 126	0	1 440	0.2 %
Belgium	1	1	950	952	0.1 %
Others	62 045	3 992	0	66 037	8.8 %
TOTAL	647 939	104 655	1 330	753 924	100.0%

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.3. Trade balance

Not surprisingly, UAE has a very large deficit, both in terms of volume and value, since it depends on imports for domestic consumption as well as tourist consumption.

Table 8: UAE seafood trade balance 2018

Volume in tonnes; value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	18	353	-335	301	2 411	-2 110
Crustaceans & Molluscs, live, fresh, chilled, etc.	14 748	61 126	-46 378	115 805	333 787	-217 982
Crustaceans and molluscs, prepared or preserved	13 203	1 559	11 644	75 760	13 626	62 134
Fish, dried, salted, or smoked	834	2 532	-1 698	5 642	5 450	192
Fish, fresh, chilled or frozen	15 113	157 409	-142 296	48 947	309 766	-260 819
Fish, prepared or preserved	7 203	28 270	-21 067	17 811	104 397	-86 586
Inedible	0	426	-426	0	537	-537
Meals	2 407	1 528	879	2 774	1 227	1 547
Oils	717	386	331	2 414	5 337	-2 923
Sponges, corals, shells	0	4 179	-4 179	0	1 567	-1 567
TOTAL	54 243	257 768	-203 525	269 454	778 105	-508 651

FISH TRADE STUDY – COUNTRY REPORT

YEMEN¹ (REPUBLIC OF YEMEN)

Area	527 970 km ²
Population 2019 (World Bank)	29 825 964
Coastline	2 350 km
EEZ	552 669 km ²
Total Fish Production MT (2018)	131 308
Inland aquaculture (MT)	0
Marine aquaculture (MT)	0
Total aquaculture (MT)	0
Inland capture fisheries (MT)	0
Marine capture fisheries (MT)	131 308
Total capture fisheries (MT)	131 308
Fish Exports Volume & Value (FAO, 2018)	53 123 MT / USD 124.0 million
Fish Imports Volume & Value (Govt, 2019)	13 935 MT / USD 48.5 million
GDP (World Bank, 2019) / per capita	USD 31.3 billion / USD 1 123
Fish consumption per capita (FAO, 2018)	3.17 kg/person/year

¹ Information from FAO's Country Profiles has been used as a basis for this report, but the information has been updated and supplemented with information from other sources.

1. Background

Yemen, officially the Republic of Yemen, is a country at the southern tip of the Arabian Peninsula in Western Asia. It is the second-largest Arab sovereign state in the peninsula, occupying 527 970 square kilometres. The coastline stretches for about 2 350 kilometres.

Yemen's constitutionally stated capital is the city of Sanaa, but the city has been under Houthi rebel control since February 2015, as is Aden, which is also controlled by the Southern Transitional Council since 2018. Its executive administration resides in Riyadh, Saudi Arabia.

2. Overview of the fisheries sector

The fisheries activities in Yemen include (a) artisanal fisheries and (b) industrial fisheries.

It is estimated that the artisanal fisheries sector has 41 322 fishermen utilizing 9 157 boats (8 475 boats with outboard engines, 682 with inboard engines). The boats used by the traditional fisheries are of 3 types: Arbi (large sanbouks 12 - 15m long with 150 - 250 hp diesel engines); ghadifa (10m long) and Hori (6 - 8m long) with 15 - 75 hp outboard engines. The arbi (sanbouks) are built of either wood or fiberglass. The ghadifa and hori are built of fiberglass.

The purchase of new boats, fishing gear and engines is frequently subsidized by the Agriculture Encouragement and Fishing Production Fund (EAFPF), or by loans from the Cooperative Credit Bank. The artisanal fishermen use different fishing methods depending upon the target species and season. These include seines, handlines, gillnet and trap.

The most important species included tunas, large jacks, sardines, mackerel, barracuda, snappers, solefish, shrimp, lobster and cuttlefish.

There are 23 fishing companies in the industrial sector working in Yemen waters, 11 in the Red Sea and 12 in the Aden Gulf and the Arabian Sea. Total landings in 2018 were 131 308 tonnes, principally demersal and pelagic fish and cuttlefish.

The government has created two fishing ports, and built a considerable number of fisheries facilities along the coast, including cold storage facilities.

2.1. Membership in regional fisheries bodies

- Indian Ocean Tuna Commission (IOTC)
- Southwest Indian Ocean Fisheries Commission (SWIOFC)

2.2. Seafood production

The fishing industry has made significant progress during the past twenty years. Fish production from the artisanal sector has been improved through government subsidy programmes funded by the Fisheries Development Projects and the Agriculture Encouragement and Fisheries Production Fund, which has provided subsidies for fishermen for the purchase of modern fishing boats, fishing gear and equipment including winches, traps, fish preservation boxes and high-powered engines. The development of the industry has been supported by the Government's construction of ports, roads, radio communications networks, ice plants, workshops and cold storage and other necessary facilities throughout Yemen. About 85% of the country's fish resources are being exploited by the artisan sector, while 15% are being exploited by the industrial sector.

The fisheries sector is considered to be third in order of importance in Yemen's economy. Its total contribution to the country's GDP is approximately 15%. It is estimated that more than 220 000 people depend on fishing as their principal source of income. Fish is a major and growing food item in Yemen. Inasmuch as fisheries resources are renewable, they can be exploited to a far greater degree

in order to meet both local and export market demand. In addition, the fisheries sector is expected to absorb a greater proportion of the national workforce in the future.

2.2.1. Capture fisheries

In spite of the Government’s priorities and initiatives, total landings from marine fisheries have been declining over the past five years, from 213 402 tonnes in 2014 to 131 308 tonnes in 2018.

The largest species group was that of marine pelagic fish, which accounted for 74 percent of total landings, followed by demersal marine fish (18 percent of the total).

Table 1: Yemen capture production

Volume in tonnes. Source: FAO FishStatJ, 2020

Species group	2014	2015	2016	2017	2018
Aquatic Animals NEI	40	32	27	23	23
Aquatic Plants	0	0	0	0	0
Cephalopods	14 871	12 225	10 521	8 943	8 943
Crustaceans	2 286	1 870	1 584	1 347	1 347
Demersal Marine Fish	39 824	32 910	28 100	23 889	23 889
Freshwater and Diadromous Fish	0	0	0	0	0
Marine Fish NEI	0	0	0	0	0
Molluscs excl. Cephalopods	105	86	72	61	61
Pelagic Marine Fish	156 276	129 655	111 827	97 027	97 045
Other	0	0	0	0	0
TOTAL	213 402	176 778	152 131	131 290	131 308

NEI = Not Elsewhere Included

2.2.2. Aquaculture

There is no registered aquaculture production in Yemen.

2.2.3. Processing

The fish products that are caught by the industrial fishing fleet are frozen at sea in whole form. These products are usually transhipped to the Chinese and European markets, and some are also sold to Arab countries.

The artisanal fish products are sold fresh or frozen in the local markets. Shark meat is usually salted and dried for sale in the interior region in the country. Significant quantities of fresh fish are transported in refrigerated trucks or packed in ice and trucked to Saudi Arabia, Egypt and Jordan.

Some sardines are sold locally in Hadramout but most of the catch is dried on the beach and used as cattle feed. A number of private sector companies export live lobsters to Dubai. Cuttlefish caught by local fishermen are sold fresh to private companies that process them and export them frozen to European countries.

To some extent, the processing industry has to rely on imported raw materials, which explains why the volume of processed products exceeds the volume of landed catch.

Table 2: Processed production – Yemen

Volume in tonnes. Source: FAO FishStatJ, 2020

Commodity	2014	2015	2016	2017	2018
Crustaceans & Molluscs, live, fresh, chilled, etc.	16 567	16 257	16 118	18 025	19 935
Fish, dried, salted, or smoked	1 254	1 163	940	900	710
Fish, fresh, chilled or frozen	32 849	23 800	26 100	22 300	16 500

Commodity	2014	2015	2016	2017	2018
Fish, prepared or preserved	2 980	1 520	1 730	1 050	300
Meals	2 772	15 000	15 000	10 000	5 000
Oils	125 600	125 600	100 000	100 000	100 000
TOTAL	182 022	183 340	159 888	152 275	142 445

2.2.4. Demand

Yemen, with its large population, understands the importance of increasing the annual fishing catch in order to help guarantee food security for its people. This can be achieved in two ways; first, by renewing the stock assessment studies in order to know what stocks are available at present; second, by studying the offshore fish species in the EEZ, particularly migratory fish such as tuna, mackerel and marlin, and by exploiting mesopelagic fish. Subsequently, the exploitation of the country's fish resources must be both rational and sustainable.

2.3. Seafood trade²

2.3.1. Exports

Yemen exports about 50 000 tonnes of seafood each year. In 2018, exports amounted to 53 123 tonnes worth USD 124 million. Most of this goes to Oman and Saudi Arabia. The most exported commodities are live, fresh or chilled crustaceans and fresh, chilled or frozen fish.

Table 3: Exports of seafood commodities – Yemen

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	108	0	0	0	0
Crustaceans & Molluscs, live, fresh, chilled, etc.	44 488	24 148	28 226	32 974	50 962
Crustaceans and molluscs, prepared or preserved	217	10	20	3	10
Fish, dried, salted, or smoked	7 678	6 588	7 389	7 340	5 967
Fish, fresh, chilled or frozen	144 334	90 788	80 699	62 630	59 577
Fish, prepared or preserved	12 370	10 067	4 195	5 219	5 554
Inedible	1 640	702	600	500	500
Meals	988	1 830	1 517	366	1 439
Oils	120	4	65	99	21
Sponges, corals, shells	0	2	2	16	0
TOTAL	211 943	134 139	122 713	109 147	124 030

Table 4: Yemen exports by destination 2015

Value in USD 1000. Source: ITC TradeMap

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Oman	69 325	872	0	70 197	55.1 %
Saudi Arabia	30 334	8 779	0	39 113	30.7 %
Vietnam	6 659	82	0	6 741	5.3 %

² Two sources of statistics have been used in this section: FAO FishStatJ statistics and ITC TradeMap statistics. These are both based on UN COMTRADE figures. But while ITC TradeMap reports these figures without any quality checking or adjustments, FAO have evaluated and, in some cases, adjusted the figures reported in FshStatJ. Consequently, figures from the two sources may differ somewhat.

Destination	HS 03	HS 1604	HS 2301	TOTAL	%
Egypt	6 481	96	0	6 577	5.2 %
Jordan	694	0	0	694	0.5 %
Malaysia	526	0	0	526	0.4 %
Thailand	494	8	0	502	0.4 %
Hong Kong	442	0	0	442	0.3 %
Sri Lanka	431	0	0	431	0.3 %
Belgium	322	0	0	322	0.3 %
Spain	300	0	0	300	0.2 %
China	198	7	0	205	0.2 %
Ireland	177	0	0	177	0.1 %
Tanzania	117	0	0	117	0.1 %
Bangladesh	76	66	0	142	0.1 %
Qatar	0	38	0	38	0.0 %
Others	861	118	0	979	0.8 %
TOTAL	117 437	10 066	0	127 503	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.2. Imports

Yemen's imports are much less than its exports. In 2018, the country imported 48 500 tonnes worth USD 48.5 million. Most of the imported seafood came from Thailand (82.3% of the total) and Indonesia (8% of total).

Table 5: Imports of seafood commodities – Yemen

Value in USD 1000. Source: FAO FishStatJ 2020

Commodity	2014	2015	2016	2017	2018
Aquatic plants	88	11	944	8	2
Crustaceans & Molluscs, live, fresh, chilled, etc.	30	43	2	0	0
Crustaceans and molluscs, prepared or preserved	38	50	0	1	0
Fish, dried, salted, or smoked	45	48	9	2	0
Fish, fresh, chilled or frozen	3 127	9 115	7 018	5 775	5 678
Fish, prepared or preserved	26 858	11 256	18 551	30 254	42 730
Inedible	0	0	0	0	94
Meals	0	0	0	0	0
Oils	0	0	28	39	0
Sponges, corals, shells	0	0	4	4	1
TOTAL	30 186	20 523	26 556	36 083	48 505

Table 6: Yemen imports by origin 2015

Value in USD 1000. Source: ITC TradeMap

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
Thailand	8 669	8 171	0	16 840	82.3 %
Indonesia	361	1 273	0	1 634	8.0 %
Oman	18	599	0	617	3.0 %

Origin	HS 03	HS 1604	HS 2301	TOTAL	%
Moldova	9	0	0	9	0.0 %
UAE	5	2	0	7	0.0 %
Ecuador	4	0	0	4	0.0 %
Malaysia	2	0	0	2	0.0 %
Japan	0	1 011	0	1 011	4.9 %
China	0	134	0	134	0.7 %
Vietnam	0	43	0	43	0.2 %
Saudi Arabia	0	20	0	20	0.1 %
Others	140	3	0	143	0.7 %
TOTAL	9 208	11 256	0	20 464	100.0 %

HS 03 = Fish and crustaceans, molluscs and other aquatic invertebrates;

HS 1604 = Prepared or preserved fish; caviar substitutes prepared from fish eggs;

HS 2301 = Flours, meals and pellets, of meat or meat offal, of fish or crustaceans, molluscs or other

2.3.3. Trade balance

In total, Yemen has a positive seafood trade balance, both in terms of volume and value. However, in the case of prepared or preserved fish, the balance is negative, indicating that the country imports quantities of these commodities for domestic consumption.

Table 7: Yemen seafood trade balance 2018

Volume in tonnes; value in USD 1000. Source: FAO FishStatJ 2020

Commodity	Tonnes			USD 1000		
	Exports	Imports	Balance	Exports	Imports	Balance
Aquatic plants	0	0	0	0	2	-2
Crustaceans & Molluscs, live, fresh, chilled, etc.	13 122	0	13 122	50 962	0	50 962
Crustaceans and molluscs, prepared or preserved	2	0	2	10	0	10
Fish, dried, salted, or smoked	512	0	512	5 967	0	5 967
Fish, fresh, chilled or frozen	36 378	2 681	33 697	59 577	5 678	53 899
Fish, prepared or preserved	1 335	11 248	-9 913	5 554	42 730	-37 176
Inedible	400	6	394	500	94	406
Meals	1 354	0	1 354	1 439	0	1 439
Oils	20	0	20	21	0	21
Sponges, corals, shells	0	0	0	0	1	-1
TOTAL	53 123	13 935	39 188	124 030	48 505	75 525