
**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’**

REFERENCE NO. DOE/NAT/ARB/DCP/2019-290

Authors: Blessing Mapfumo and Erik Hempel

November 2021

Project implemented by



Internal reference: IO349R07B



TABLE OF CONTENTS

LIST OF TABLES	4
LIST OF FIGURES	4
ABBREVIATIONS AND ACRONYMS.....	5
1. Executive Summary of International Trade Study	8
2. Introduction and methodology.....	9
3. Literature review and sources of information.....	10
3.1. Literature review.....	10
3.2. Desk study	11
3.3. Data collection and sources.....	11
4. Description of the IORA region.....	12
5. The fisheries and aquaculture sector in the region	13
5.1. Basic economic information	13
5.2. Fisheries production by capture fisheries and aquaculture	14
5.3. Seafood processing – main product forms.....	17
5.4. Seafood supplies and consumption	19
5.5. International trade trends.....	20
6. Issues and challenges.....	28
6.1. Food security	29
6.2. Informal trade.....	30
6.3. COVID-19 and its impact on trade	31
7. Legal situation and trade agreements	33
7.1. Membership to WTO.....	33
7.2. FAO Committee on Fisheries (COFI) : Sub-Committee on Fish Trade	34
7.3. National organizations for facilitating fish trade	34
7.4. Regional trade blocs and organisations	36
7.5. Trade agreements.....	37
7.6. Trade barriers	38
7.7. Lack of market intelligence.....	39
7.8. Infrastructure deficiencies.....	40
8. SWOT analysis.....	40
8.1. Strengths	41
8.2. Weaknesses	41
8.3. Opportunities.....	41
8.4. Threats.....	42
9. Trade strategy options	42

- 9.1. Objectives42
- 10. Concluding observations and recommendations43
 - 10.1. Establishment of a trade information service - FISHTRADE43
 - 10.2. Use of existing networks44
 - 10.3. Capacity building of national and regional fish trade actors45
 - 10.4. COVID-19 and its impacts on fish trade45
 - 10.5. Assessing and addressing informal fish trade.....45
 - 10.6. Develop a trade strategy for intra-IORA fish trade46
- Appendix A: References47
- Appendix B: Country Profiles.....50

LIST OF TABLES

Table 1: Member states official and short names	13
Table 2: Land area, population, GDP and EEZ area (Source: FAO, World Bank)	14
Table 3: Capture fisheries production in IORA member countries (in tonnes)	15
Table 4: Total aquaculture production by IORA member countries (in tonnes - including aquatic plants)	16
Table 5: Processed production in IORA countries (in tonnes).....	18
Table 6: IORA Processed production by major commodities (in tonnes)	18
Table 7: Food balance sheets – IORA member countries (in tonnes).....	19
Table 8: Seafood trade balance of IORA countries 2018	21
Table 9: Terms of Trade	22
Table 10: IORA imports by major commodity groups (in tonnes)	24
Table 11: IORA exports by major commodity groups (Value in USD 1000)	24
Table 12: Exports by IORA member states by importing region (Value in USD 1000).....	25
Table 13: Imports by IORA member states (Value in USD 1000).....	26
Table 14: Total imports by IORA member states by major commodity groups (Value in USD 1000) ...	26
Table 15: Intra-regional exports and imports from/to IORA member states (Value in USD 1000).....	28
Table 16: Population forecasts and demand forecasts	29
Table 17: National organizations for facilitating trade	34

LIST OF FIGURES

Figure 1: Geographical map of the IORA region.....	12
Figure 2: Landings and aquaculture production in IORA member countries.....	15
Figure 3: Apparent consumption/food supplies in IORA region (Kg per person per year)	19
Figure 4: IORA exports and imports of seafood by value (Value in USD billion)	20
Figure 5: IORA exports and imports by volume (in x 1000 tonnes)	21

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,

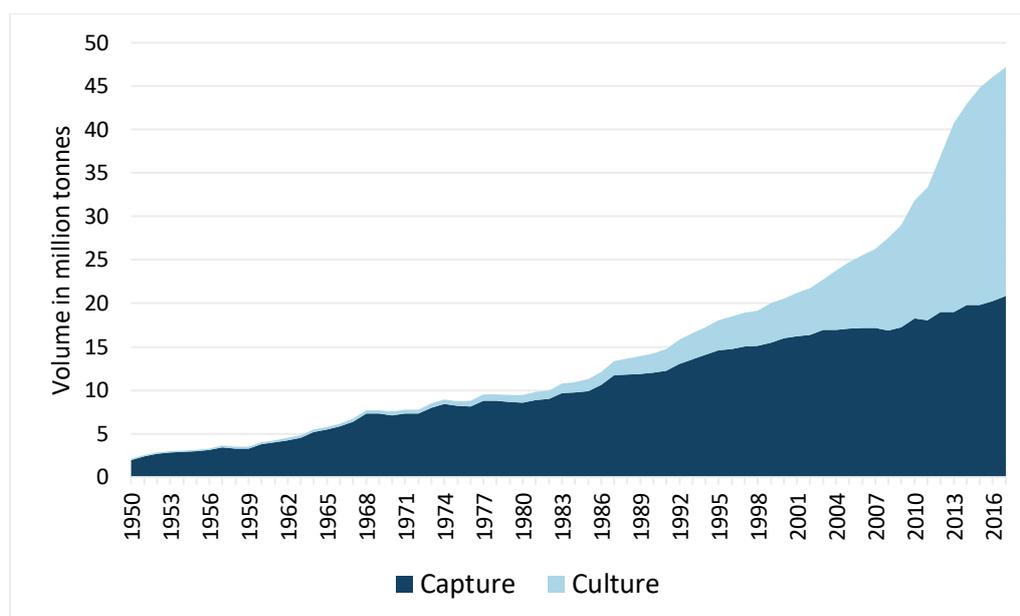
Source: World Bank

These figures are indicative only, based on information in Liquisearch.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.

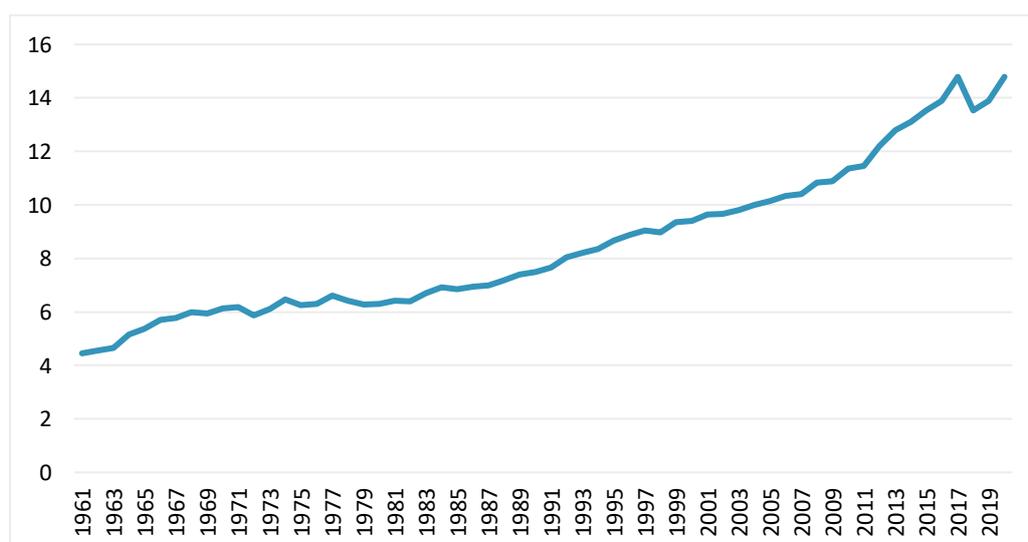
Table 7: Food balance sheets – IORA member countries (in tonnes)

	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)

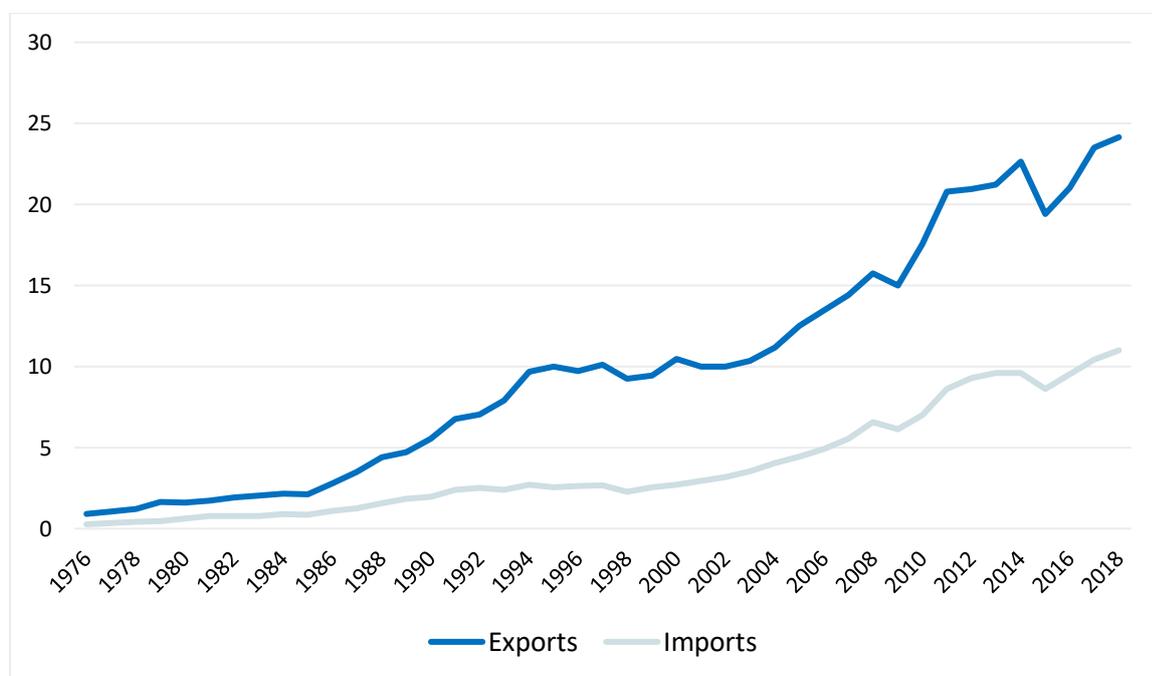
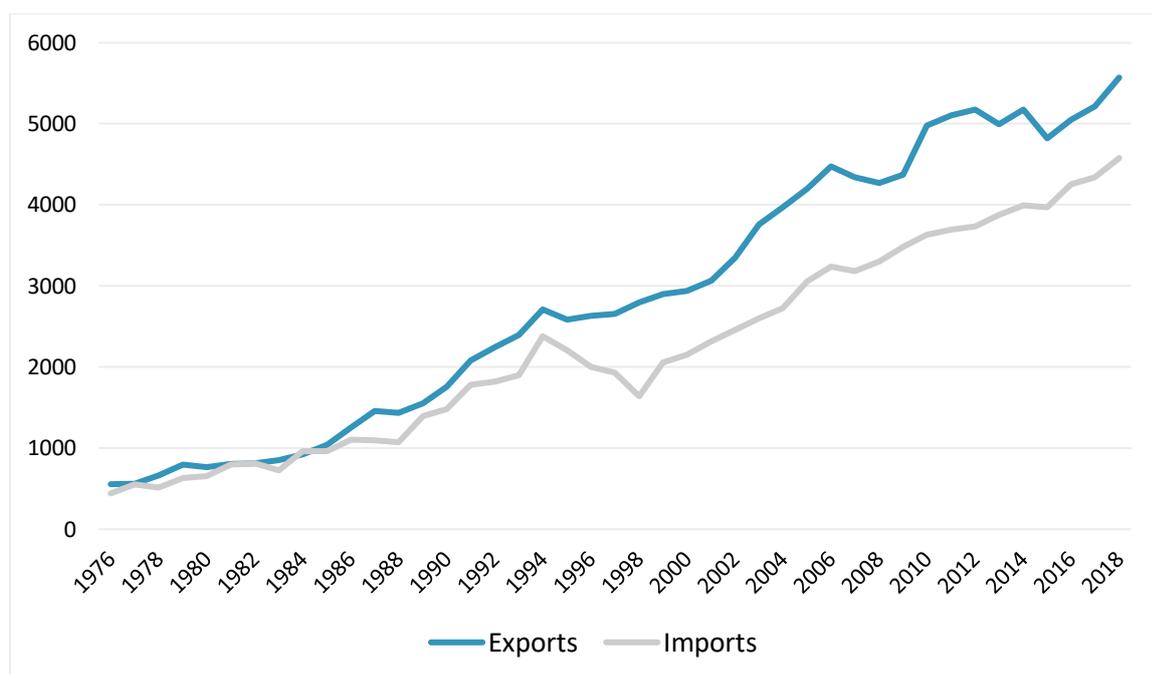


Figure 5: IORA exports and imports by volume (in x 1000 tonnes)



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/APSOI): *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.