

# Evidence-based and policy coherent Oceans Economy and Trade Strategies<sup>1</sup>. Sector data factsheet<sup>2</sup>: Belize

## SEAFOOD MANUFACTURING

### 1. INTRODUCTION

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The project “Evidence-based and policy coherent Oceans Economy and Trade Strategies” aims to support developing countries such as Barbados, Belize and Costa Rica, in realizing trade and economic benefits from the sustainable use of marine resources within the framework of the 1982 United Nations Convention on the Law of the Sea (UNCLOS). This data factsheet present detailed sectorial information of one (of the four) ocean sector selected in Belize to facilitate the identification and informed selection of key sectors to be considered for the next phase of the project:

Sector 1	Sector 2	 Sector 3	Sector 4
Marine fisheries	Aquaculture	Seafood manufacturing	Tourism

#### 1.1. The seafood sector

The most common use for fisheries resources is for food purposes. Over 75 per cent of the global fish production is used for direct human consumption. About 78 per cent of seafood products were exposed to international trade competition (FAO, 2018) as manufacture products are part of a controlled production process that addresses many sanitary requirements. Processed seafood is also ready for consumer consumption in usually accessible and comfortable manner (ready to be cooked or eaten). As shown in Figure 1 world exports have remained relatively stable during the years 2014 to 2017 in line with trends observed for total world exports. Their share in total export has never exceeded 0.4 percent despite a sustained growth path between 2007 and 2013-2014.

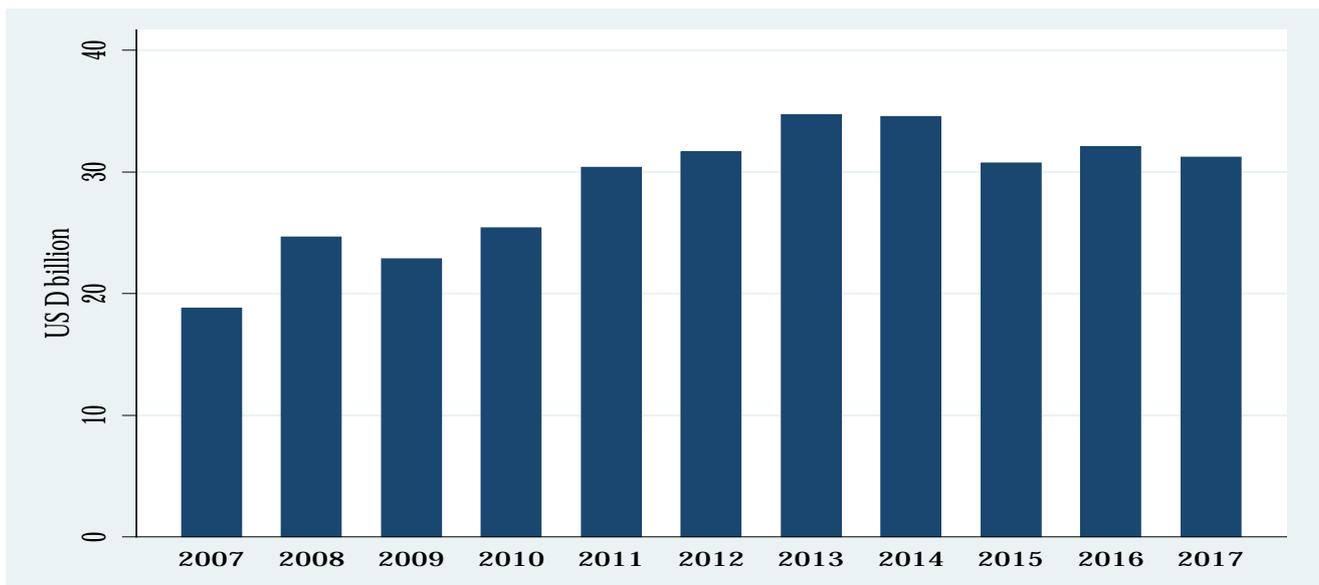
While seafood is the lion share of the fish processing business, non-edible uses should not be disregard as there are increasing trends toward the demand of natural ingredients for cosmetic, personal care, fashion and ornamental purposes that can also bring new business opportunities to developing countries such as Belize. UNCTAD’s Blue BioTrade concept and approach may be an interesting option to develop non-edible marine resources value chains (UNCTAD, 2018).

#### FIGURE 1: TOTAL EXPORTS OF SEAFOOD PRODUCTS

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SOURCE: COMTRADE IN WITS (EXPORTS DATA)

Furthermore, fish and seafood are one of the most traded food items. Some 35 to 38 per cent of the world production enters international trade generating US\$ 152 billion in 2017. Over 50 per cent of this trade originates in developing countries whose net trade income (export – import), valued at US\$ 37 billion in 2013, is greater than the net income of most other agricultural commodities combined. (UNCTAD-FAO-UN Environment (2018). CARICOM exports of fish and seafood have been estimated US\$ 400 million with a potential for additional US\$ 130 Million in exports, if appropriate food safety measures were in place (Jamaica Observer, May 29, (2016).

Upstream and downstream activities along the fish and seafood value chain provided significant employment and economic benefits to countries and local coastal communities. As a result, around 59.6 million people were employed in fisheries and aquaculture in 2016 and some 200 million direct and indirect employment opportunities occur along the fish and seafood value chain (UNCTAD-FAO-UN Environment (2018). The number of persons employed in direct production in the commercial marine capture fisheries and aquaculture sub-sectors in the Caribbean Regional Fisheries Mechanism (CRFM) region in 2013, was approximately 116,265 persons (97.5% employed in direct production in the marine capture fisheries and 2.5% employed in direct production in aquaculture). The total number of persons employed in the fisheries sector of the CRFM region was estimated at approximately 341,668 in 2013/2014 which was approximately 4.3% of the workforce of the region.

## 1.2. The seafood value chain

An important aspect of the seafood value chains is that it uses inputs from both the fisheries extractive sector and the aquaculture one to develop intermediate and consumer products. The seafood value chain can be disaggregated in the following activities: (i) harvesting: catching, cleaning, sorting, grading, and weighing; (ii) landing: cold storage, and icing, distribution to manufacturing point; (iii) cleaning: de-heading, slime removal, and meat/bone separation, and discarding waste; (iv) processing: salting, canning, packaging, branding; and (v) services and marketing: certification, transportation, marketing, wholesaling, and retailing (Figure 2).<sup>3</sup> The

<sup>3</sup> Note that neither fillets nor dried, salted or brine fish products are included in the list of products belonging to the seafood category reported in Table A2 of the appendix. The categorization wants to reflect the HS classification. It may be relevant to define an intermediate category including exclusively lightly elaborated fish products such as fillets.

manufacturing sector related to phase onwards in what is called post harvesting and includes cleaning, processing, services and marketing. At each stage of the seafood value chain, added value is expressed in terms of sale prices at landing, transportation fees, marketing fees, wholesale margins, retailer margins, profits by different intermediaries, final consumer prices, and taxes levied at various stages of the process.

**FIGURE 2: A SIMPLIFIED REPRESENTATION OF THE SEAFOOD VALUE CHAIN**

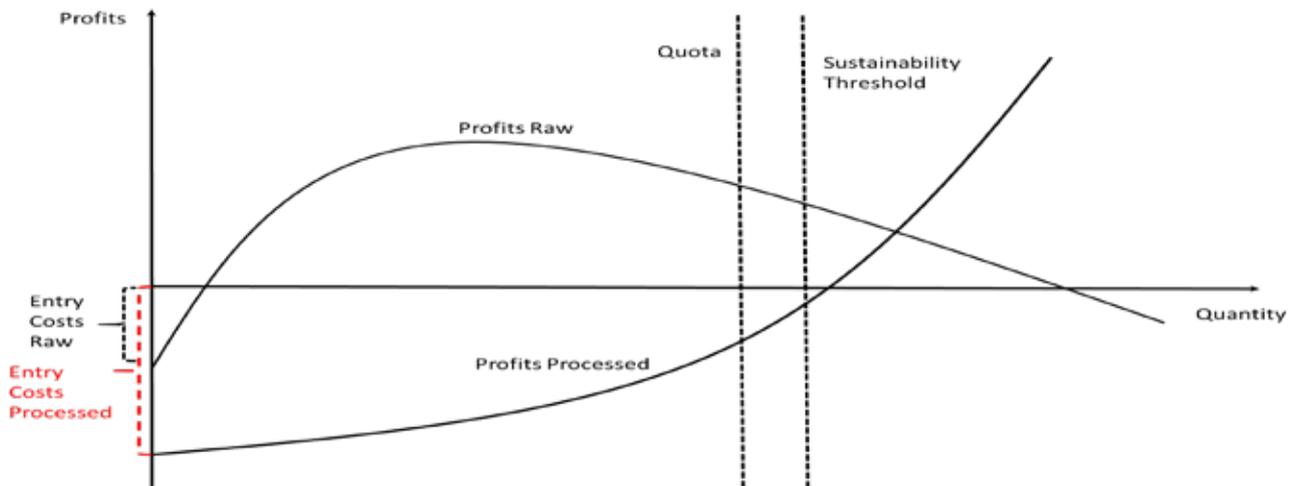


SOURCE: UNCTAD-FAO-UN ENVIRONMENT (2018)

Although value addition is generated by the transformation of the raw product into a more processed product, the price per unit of weight of the raw product may be lower when processed than when sold in its raw form as a fresh/chilled product. Production costs are expected to be larger for processed products as they may require costly technology and specific inputs such as aluminum in the case of canned products. Distribution/transportation costs however may be much higher for fresh and chilled products characterized by extremely constraining storage requisites. Based on this set of basic considerations, that would necessarily require refinement, a very rough conjecture would suggest that the profitability of raw production relative to that of processed production varies with the level of production itself. In other words, small production levels may make raw products more profitable while higher levels may make processed products more profitable. A hypothetical situation is represented in Graph 1. The evolution of profits for raw products (fresh or chilled) wants to reflect the fact that transportation of larger quantities of fresh or chilled products may become more expensive as more distant markets have to be reached. Moreover, the cost of infrastructure to preserve the freshness of the products may increase non-linearly with the quantity to be stored. The evolution of prepared products profits reflects the possible existence of increasing returns to scale. As the size of the plant increases the average cost of production falls and overall profits increase proportionally more. The level of capture could be constrained by either a quota or some sustainability threshold. In graph 1 they are both located to the left of the crossing point of the two profit curves. This configuration would suggest that producing essentially raw products (everything else remaining the same) is a better strategy at least from a static point of view. The graph can be re-interpreted at different level of aggregation (i.e. plant, firm, cooperative, regional, national, international).

Graph 1 is likely to be over simplistic. However, it should only be used as a basis for conceptualizing sectoral development strategies.

**GRAPH 1: PROFIT TRAJECTORY OF RAW AND PROCESSED FISH PRODUCTS**



SOURCE: AUTHORS' OWN ELABORATION

### 1.3. The Belizean Context: Seafood industry

**Land:** 22 966 km<sup>2</sup>  
**Coasts length:** 386 km  
**Economic structure of the GDP (2016):** agriculture and fisheries made 11.7 % of GDP, industry 14.4 % and services 59.9 %. Tourism alone represents almost one fourth of GDP.  
**Fisheries and aquaculture as a percentage of GDP:** 3%  
**Main manufacture sites:** Independence village, Mango Creek, etc

With a total population of about 375 thousand persons in 2017 the size of the domestic market remains relatively small. Even if we add a permanent population equivalent of tourists' stop overs total population would not reach 400 thousand persons. In that context and considering highly competitive international markets in processed products such as canned tuna or animal fodder development perspectives of the industry remain limited. There may be some good opportunities in shrimp processed products as soon as the aquaculture sector overcomes the consequences of the Early Mortality Disease (EMS) outbreak in 2015. The same may apply to processed products based on lobsters. The case of sea cucumbers is particular as over extraction in the last years endangered the species and led the authorities to interrupt extraction activities. The aquaculture sector may soon become productive and profitable with possibly good perspectives for exports of processed products to expanding Asian markets. Aquaculture production of sea cucumbers benefit from previous trade relationships establish in 2015 and 2016. Sea cucumbers processed products remain the only good officially reported as being exported during the last five years.

## 2. PRODUCTION

Information about production of processed sea foods is extremely difficult to extract from international datasets. Information published by FAO in its FAOSTAT-Food Balance Sheets refers to fish meal without any further disaggregation. Economic variables of interest to this section included in the Commodity Balance dataset are Production, Imports, Exports, Domestic Supply where

$$\text{Domestic Supply/Consumption} = \text{Production} + \text{Imports} - \text{Exports}$$

In this context domestic supply would be associated with domestic consumption gross of products waste. Available information for Belize remains extremely scarce and may deserve special attention. Existing data are reported in Table 1 below. As mentioned previously figures should be interpreted with caution and need further verification. All successive years up to 2013 (the last reported year) are characterized by zero values.

**TABLE 1: FISH MEAL CONSUMPTION COMPONENTS (2004,2005, 2007)**

Element	Year	Unit	Value
Domestic supply quantity	2004	tonnes	8
Export Quantity	2004	tonnes	62
Import Quantity	2004	tonnes	0
Production	2004	tonnes	70
Domestic supply quantity	2005	tonnes	5
Export Quantity	2005	tonnes	255
Import Quantity	2005	tonnes	0
Production	2005	tonnes	260
Domestic supply quantity	2007	tonnes	7
Export Quantity	2007	tonnes	0
Import Quantity	2007	tonnes	7
Production	2007	tonnes	0

SOURCE: FAOSTAT FOOD BALANCE SHEET (2018)

Information published by UNIDO is based on the International Standard Industrial Classification of All Economic Activities (ISIC). ISIC represents an international reference classification of productive activities. In its INDSTAT 4 2018, ISIC Revision 3 and INDSTAT 4 2018, ISIC Revision 4 databases information is provided for the aggregated category preserved and processed fish (crustaceans and molluscs). Variables included are output, value added, the number of employees and the share of female, the number of establishments and wages. Unfortunately, no such information exists for Belize.

Trade data could provide some information about the products produced as exports could mirror the domestic production structure. Information about consumption could be retrieved from imports data. Domestic production potential could be assessed if consumption patterns revealed by import information do not match export patterns. As we will see in the next section, the export performance of Belize has been essentially driven by sea cucumber processing in the very last year with a complete interruption of export flows due to the interruption of sea cucumbers extraction to slow down resource depletion.

## 3. TRADE

### 3.1. OVERVIEW

Trade data are based on the Harmonized system classification in its 2012 version which remains the one used by Belizean authorities in their declaration to the UN Statistics Division in charge of gathering trade data from all UN member states and published them in its harmonized database COMTRADE. An exhaustive list of products as defined in the HS-2012 classification is reproduced in Table A2 of the appendix. Three groups of products can be defined. Fish fats and oils is the first one. The second group consists of fish preparations based on different categories of species. The last group includes fish residues and waste products and salt. As to the

salt product it may not exclusively refer to salt form sea water. Unfortunately, it is impossible to distinguish between sea water and non-sea water salt. Any analysis referring to that product may have to be interpreted with caution.

As shown in Table 2, total exports of seafood products are negligible if compared to the level of exports of unprocessed marine fisheries and aquaculture exports. For the year 2017 no export has been declared. In 2016 exports were about 160,000 USD and about 60,000 the year before. Three different products have reached at best two destinations in 2015, namely the United States of America and Hong-Kong. Moreover, as discussed in the next section, exports of products other than prepared or preserved sea cucumbers are reported with zero values.

**TABLE 2: EXPORTS, NUMBER OF PRODUCTS, NUMBER OF DESTINATIONS, 2014-2017**

	2014	2015	2016	2017
EXPORTS VALUE (USD)	-	59,327	159,253	0
EXPORTS QTY (TONNES)	0.256	10.15	31.48	0
NUMBER OF DESTINATIONS	1	2	1	0
NUMBER OF PRODUCTS	3	1	1	0
TOTAL EXPORTS (US\$ MILLIONS)	307	268	201	0
SHARE IN TOTAL EXPORTS	-	0.22%	0.79%	0%
SHARE IN TOTAL WORLD EXPORTS	0.20%	0.21%	0.22%	0.18%

SOURCE: COMTRADE IN WITS (EXPORTS DATA) (2018)

NOTE 1: TRADE DATA BASED ON THE 2012 VERSION OF THE HS CLASSIFICATION ARE AVAILABLE ONLY SINCE 2014 FOR BELIZE.

NOTE 2: DATA REFLECT EXPORT FLOWS AS DECLARED BY THE COMPETENT AUTHORITY TO THE UN STATISTICAL DIVISION.

Nevertheless, the share of seafood product in total exports in 2015 and 2016 was not that different from the share observed in total world exports. This does not make the sector necessarily competitive especially if we look at the import side.

Table 3 shows that the number of products imported has been about twenty during the 2014-2017 period. In value terms imports varied from 1.33 million in 2014 to 1.11 million in 2017. That is exports of seafood products represented a mere 5 percent of the imported value in 2015 and about 13 percent in 2016 to drop to zero in 2017. In quantity terms, imports varied between about 6,000 tonnes in 2016 to 7,000 tonnes the year before. The last available information indicate a total quantity of imported products equal to 6301.6 tonnes.

Unit values (values/weight) computations for the year 2016 reveal that 1 kilo of exports of processed sea cucumber yielded about 5 USD while 1 of imports costed on average about 0.20 USD.

**TABLE 3: IMPORTS, NUMBER OF PRODUCTS, 2014-2017**

	2014	2015	2016	2017
IMPORTS VALUE (MILLION USD)	1.33	1.261	1.262	1.11
IMPORTS QTY (TONNES)	6,452.3	7,034.0	6,067.5	6,301.6
NUMBER OF PRODUCTS	25	23	22	21
EXPORTS AS SHARE OF IMPORTS	-	5%	12.6%	-

SOURCE: COMTRADE IN WITS (IMPORTS DATA)

NOTE 1: TRADE DATA BASED ON THE 2012 VERSION OF THE HS CLASSIFICATION ARE AVAILABLE ONLY SINCE 2014 FOR BELIZE.

NOTE 2: DATA REFLECT IMPORT FLOWS AS DECLARED BY THE COMPETENT AUTHORITY TO THE UN STATISTICAL DIVISION.

### 3.2. SUPPLY CAPACITIES AND DOMESTIC DEMAND FOR IMPORTS

Exports of seafood manufactured products, for which a non-zero value has been declared, have been limited to one product namely sea cucumber preparations are reported in Table 4. Inevitably, exports dropped to zero with the suspension of the extraction for all species of sea cucumbers early 2017.

**TABLE 4: SEAFOOD PRODUCTS EXPORTS**

PRODUCTCODE	DESCRIPTION	YEAR	EXPORTS (USD)	NET WEIGHT (KGM)
160411	PREPARED OR PRESERVED SALMON	2014	0	160
160559	PREPARED OR PRESERVED CRUSTACEANS	2014	0	66
160561	PREPARED OR PRESERVED SEA CUCUMBERS	2015	59,327	10,158
160561	PREPARED OR PRESERVED SEA CUCUMBERS	2016	159,263	31,487
250100	MARINE SALT	2014	0	30

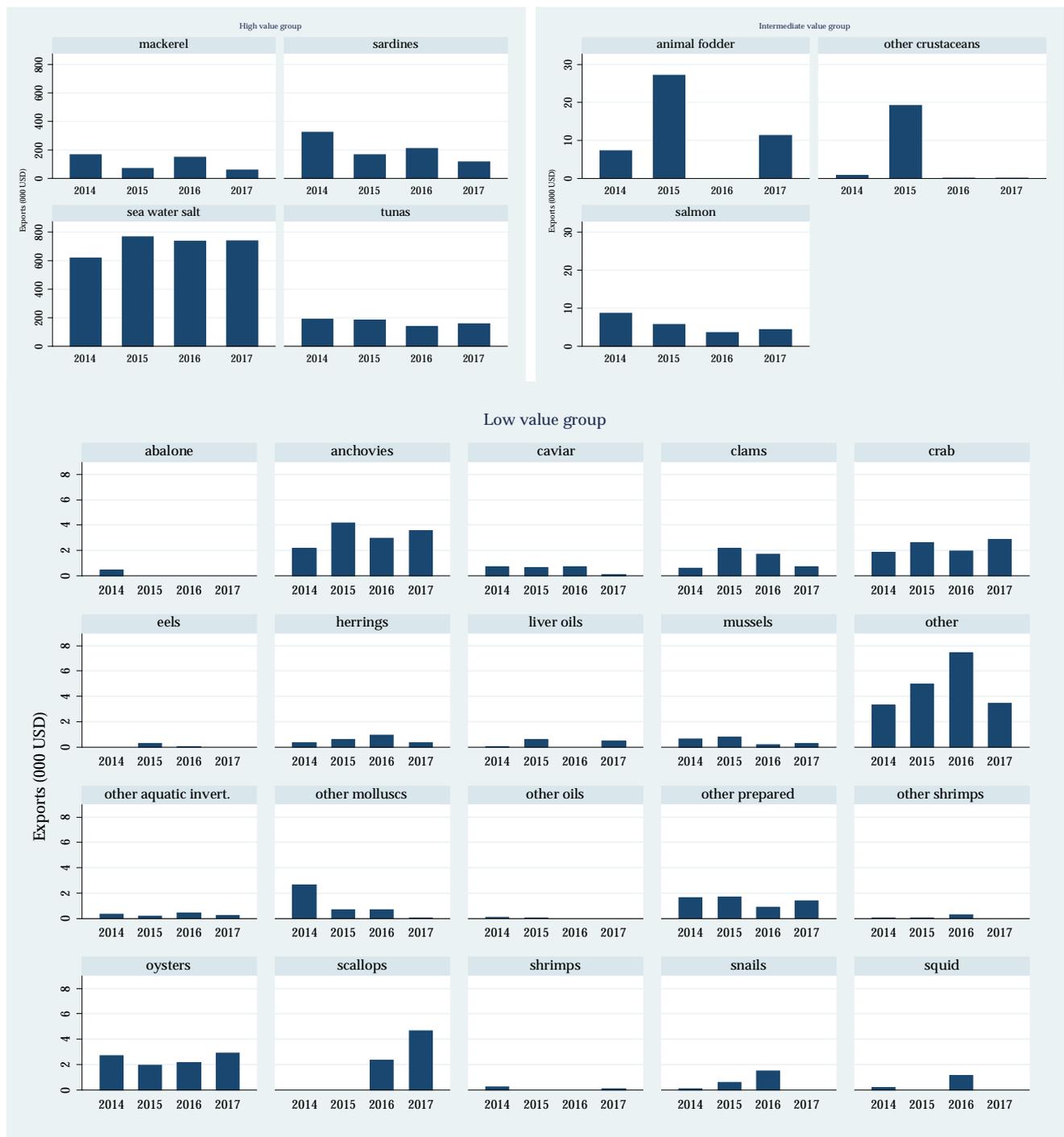
SOURCE: COMTRADE IN WITS (EXPORT DATA)

Although supply capacity appears to be relatively limited at least in terms of exports, imports demand is relatively diversified as suggested by Figure 3 and Figure 4 below.

High value products are mackerel, sardines and tuna preparations most probably canned preparations. Sea water salt represents by far the largest imported ocean product. While imports of canned products never exceeded 200,000 USD, imports of sea water salt have been worth about 750,000 USD during the years 2015 to 2017. Imports salmon preparations and animal fodder amounted to 5,000 and 10,000 USD respectively in 2017. There is also a relatively large group of products whose import value has been on average no larger than 4,000 USD. The group refers to as "other" includes prepared product based on fishes which are not salmon, herrings, sardines, tunas, mackerel, anchovies or eels. As to quantities a similar ranking applies. Sea water salt is by far the most demanded good with an average of 6,000 tonnes imported on average each year between

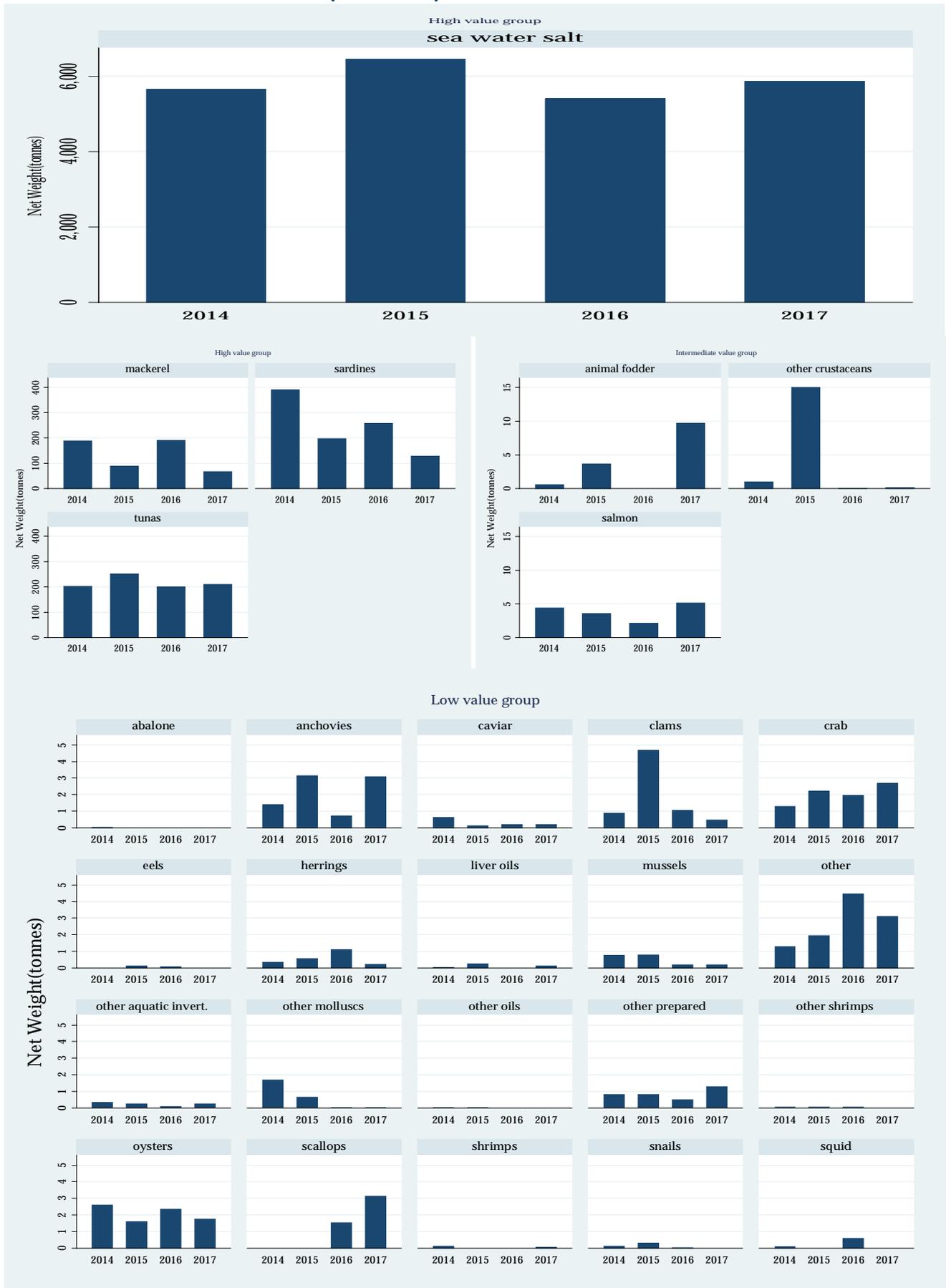
2014 and 2017. The imported quantity of tuna preparations has remained relatively stable around 200 tonnes per year. Imported quantities of mackerel and sardines have somewhat oscillated and were below 100 tonnes in 2017. Preparations of oysters, anchovies, crabs and scallops are the most imported products in quantity amongst the low import value group products with imported quantities varying between 2 and 3 tonnes in 2017.

**FIGURE 3: IMPORTS OF SEAFOOD (VALUE)**



SOURCE: UN-COMTRADE (FROM WITS)

**FIGURE 4: IMPORTS OF SEAFOOD (QUANTITY)**



SOURCE: UN-COMTRADE (FROM WITS)

### 3.3. FOREIGN DEMAND

World exports of seafood products have been decreasing between 2014 and 2017. During this four-year period Value decreased by about 2.3 percent and quantity by 1.9 percent. Table 5 is an extract of 2014 world imports of seafood products and reports the 10 most important products in terms of value. Not surprisingly tuna occupies the top rank with a total imports value in 2017 of 6.36 billion USD. Total imports value of tuna processed products has decreased between 2014 and 2016 and slightly bounced back in 2017. Two non-fish products are amongst the top five in 2017, namely animal fodder which ranks number 2 with an international market worth 4.24 billion USD and sea water salt which ranks number four with an international demand of 3.70 billion USD. Back in 2014 sea water salt was number three right after animal fodder. Both product categories have seen their import value slightly decrease between 2014 and 2017.

In terms of export potential for Belize shrimp products (not in airtight container) may represent a reasonable option if no important technology constraints exist. That would necessarily require an in-depth analysis.

**TABLE 5: TOP WORLD IMPORTS IN VALUE IN 2017**

Processed Product	Product Code (HS-2012)	Year	Imports Value (USD billions)	Net Weight (000 tonnes)	Share Value (%)	Share Quantity (%)
Tuna	160414	2017	6.36	1.13	19.8	2.6
Animal fodder	230120	2017	4.24	3.02	13.2	6.8
Shrimps and prawns	160521	2017	3.70	0.35	11.6	0.8
Sea water salt	250100	2017	3.43	36.75	10.7	82.9
Other non-minced fish	160419	2017	1.87	0.42	5.8	0.9
Other prepared fish	160420	2017	1.82	0.50	5.7	1.1
Fats and oils	150420	2017	1.58	0.70	4.9	1.6
Crab	160510	2017	1.18	0.08	3.7	0.2
Other shrimps and prawn	160529	2017	1.03	0.10	3.2	0.2
Sardines	160413	2017	0.87	0.30	2.7	0.7

SOURCE: UN\_COMTRADE IN WITS (IMPORTS DATA)

**TABLE 6: TOP WORLD IMPORTS IN VALUE IN 2017**

	Product Code	Value Growth	Quantity growth
Squids	160554	20.2	5.0
Octopus	160555	10.6	10.1
Lobster	160530	10.4	24.0
Eels	160417	10.2	11.6
Sea Cucumbers	160561	8.7	20.7
Jellyfish	160563	4.5	-7.4
Oysters	160551	4.3	2.1
Caviar substitutes	160432	3.7	1.6
Clams	160556	3.1	7.4
Caviar	160431	0.7	-3.1

SOURCE: UN\_COMTRADE IN WITS (IMPORTS DATA)

Table 6 reports the most dynamic products during the 2014-2017 period, that is those characterized by the highest average annual growth rate during the period. Only ten products out of the 33 reported have

been through a period of positive average annual growth. They are all listed in the table. There is no overlap between the list of products of Table 5 and that of Table 6.

Such observation refers to a redundant situation across sectors in which large markets are generally associated with maturity and growth is either limited or even negative as observed over the last few years. Squids value has increased on average by more than 20 percent a year which is considerable. However, quantity growth squids imports has remained relatively low in comparison. The highest growth rates in terms of quantity imported are found for Lobsters and Sea cucumbers products. These facts may lead to two considerations: Is the Belizean Lobster sector able to produce processed products and in that context be able to optimize production and exports by combining frozen/chilled products and processed ones. Marine extraction of sea cucumbers had to be suspended for over utilization of the resource. Over utilization may have been a consequence of an extremely dynamic demand especially in Asian countries. Extraction may need to be more closely regulated and the fight against illegal extraction intensified to guarantee a sustainable management of marine sea cucumber species and their exploitation for commercial purposes. Aquaculture may help in defining and implementing such process.

### 3.4. DISCREPANCIES BETWEEN EXPORTS AND MIRROR IMPORTS DATA

Trade flows as reported in UN COMTRADE are in principal declared twice: once by the exporting country and once by the importing country as long as a trade flow exists. The difference between the values declared by each side of the trade relationship should reflect the freight and insurance costs. In practice the incidence of orphan observations could be relatively high especially at the product (e.g. 6-digit in the HS classification). Orphans refer to those observations which are declared by the exporting country but not the importing one or vice versa. It may also be that a trade flow is not reported by either side of the relationship. The latter case is clearly extremely difficult if not impossible to identify.

**TABLE 7: MIRROR EXPORTS STATISTICS 2014-2017**

	2014	2015	2016	2017
EXPORTS VALUE (USD)	-	59,327	159,253	0
<b>MIRROR VALUE (USD)</b>	<b>814,709</b>	<b>366,292</b>	<b>132,663</b>	<b>1,059</b>
EXPORTS QTY (TONNES)	0.256	10.15	31.48	0
<b>MIRROR QTY (TONNES)</b>	<b>127.4</b>	<b>27.3</b>	<b>8.06</b>	<b>0.203</b>
NUMBER OF DESTINATIONS	1	2	1	0
<b>MIRROR NUMBER OF DESTINATIONS</b>	<b>4</b>	<b>3</b>	<b>5</b>	<b>3</b>
NUMBER OF PRODUCTS	3	1	1	0
<b>MIRROR NUMBER OF PRODUCTS</b>	<b>3</b>	<b>9</b>	<b>6</b>	<b>2</b>

SOURCE: UN-COMTRADE IN WITS (EXPORT AND IMPORT DATA)

Belize exports of seafood products are no exception. Based on importing countries declarations Belize exports values and quantities would significantly differ from exports declared by Belize competent authorities. They are clearly higher in all years reported in Table 7 except for 2016 where the opposite is observed. In 2014, no exports were declared or more precisely no value. According to mirror import data Belize exports in value could have amounted to about 815 thousand USD. In 2015, importing countries declared a sum of about 366 thousand USD as compared to the about 60 thousand declared by Belize competent authorities. In 2016, the difference stays in favour of declared exports which stand at about 160 thousand against the slightly more than 130 thousand declared by importing partners. In 2017 some imports are declared while no exports are recorded due to the interruption of sea cucumbers extraction. Similar conclusions apply to exported quantities.

**TABLE 8: IMPORTING COUNTRIES AND NUMBER OF PRODUCTS IMPORTED**

	2014	2015	2016	2017
ESP	0	0	0	1
GTM	1	1	1	0
JPN	1	0	0	0
MEX	1	0	0	0
NLD	0	7	2	1
PAK	0	0	0	1
PAN	0	0	2	0
SGP	0	0	1	0
USA	1	2	1	0

SOURCE: UN-COMTRADE IN WITS (IMPORT DATA)

The number of destinations is also larger according to mirror data. It varies between 3 in 2017 and 5 in 2016. The United States of America and Hong Kong are the only two destinations found based on export declarations. The corresponding list when looking at mirror data shown in Table 8 includes the United States of America, Guatemala, Mexico, Japan, Panama, Pakistan, Spain, Singapore and the Netherlands. The set of exported products declared by importing countries is reported in Table 9. Shrimps products are being imported each year and sea water salt has been exported between 2014 and 2016. The set of processed products that appeared as possible exports from Belize includes preparations of Tuna, Mackerel, Sardines and Lobster. It is unclear whether these declarations are correct ones. In order to assess the accuracy of all declarations a more detailed analysis is needed especially of the flows declared by the Netherlands in 2015.

**TABLE 9: BELIZE EXPORTED PRODUCTS AS DECLARED BY IMPORTING COUNTRIES**

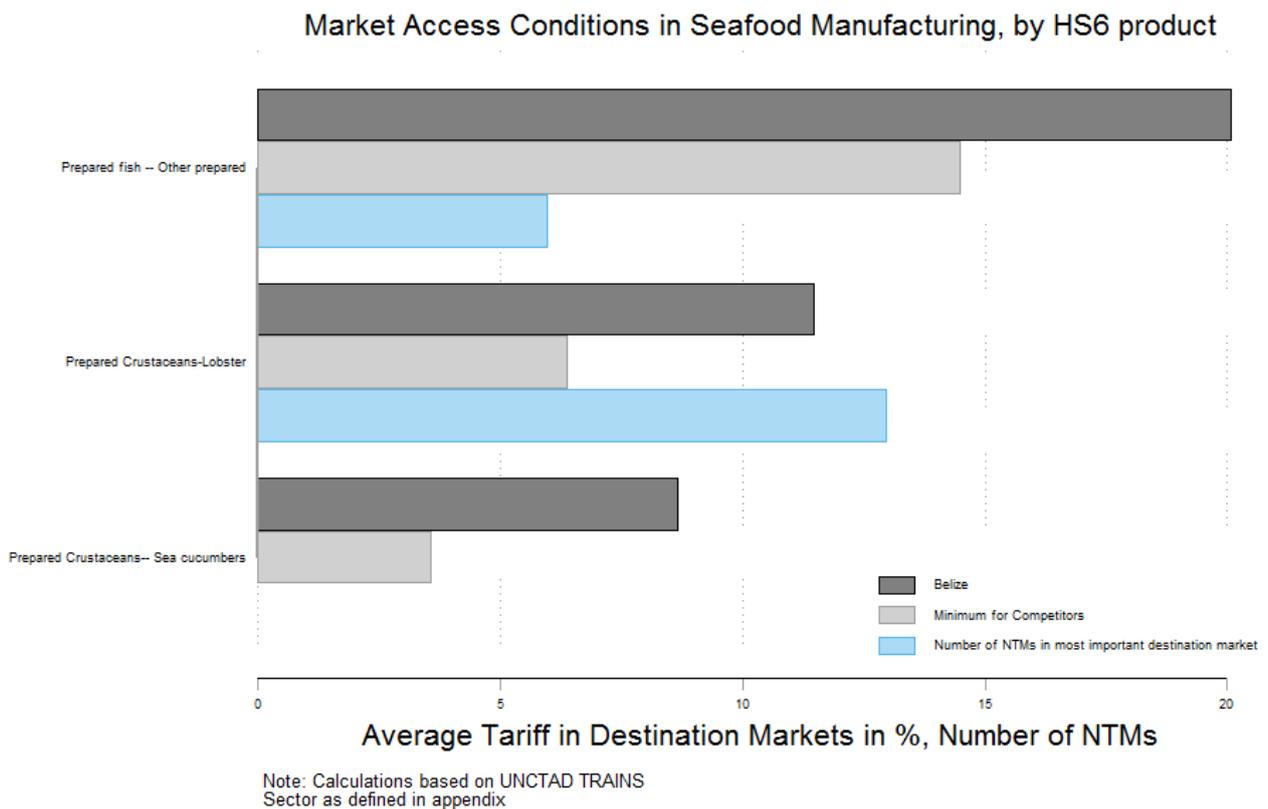
		2014	2015	2016	2017
Fats and oils	150420	0	1	0	0
Sardines	160413	0	1	0	0
Tuna	160414	0	1	0	1
Mackerel	160415	0	1	0	0
Other prepared	160420	0	0	1	0
Crab	160510	0	1	0	0
Shrimps and prawns	160521	1	1	1	1
Other shrimps and prawn	160529	0	1	1	0
Lobster	160530	0	0	1	0
Sea Cucumbers	160561	0	1	1	0
Animal fodder	230120	1	0	0	0
Sea water salt	250100	1	1	1	0
Total		3	9	6	2

SOURCE: UN-COMTRADE IN WITS (IMPORT DATA)

### 3.5. MARKET ACCESS CONDITIONS

Figure 5 reports a set of measures of market access applied on international markets to products of interest to the Belizean fish sector.

FIGURE 5: TARIFFS AND NTMS FOR A SELECTION OF SEAFOOD PRODUCTS



Beside supply side capacity and competitiveness, the level of market access (average of tariff and non-tariff measures in importing markets) is another important determinant for the export success. Belize face average tariffs that are above 20 and 10 % for prepared fish and lobster that have significant impact of export prices of Belize exports. In the case of sea cucumber preparations, the tariffs are below 10 per cent but competitors tend to face half of that amount putting Belize in a negative position *vis-a-vis* competitors. In terms of non-tariff measures in importing the number is significant for lobster with more than 13 NTMs. No NTM data for Sea cucumbers is available.

## 4. EMPLOYMENT

Information about employment and firms active in the seafood sector remains relatively scarce in international data sources. As mentioned previously, nothing comprehensive is published in reference international datasets. Information about Employment, wages and number of establishments at the sectoral level is usually retrieved from UNIDO databases. Data could also be obtained via the FAO databases. Unfortunately, very little has been published internationally on Belize. The most accurate information is obtained for the fish and fisheries sector as well as for the aquaculture sector. As far as the seafood sector is concerned nothing is declared in such datasets. Nevertheless, the information necessarily exists and should be obtained from an in-depth analysis of labour and firms surveys. Unfortunately, this is not public information in Belize. The Belize

Institute of Statistics publishes on regularly basis aggregated information about employment but little can be inferred for the seafood section of the fish sector.

Table 10 reports information published by the CRFM and based on several sources. Figures are comparable to those presented in the fish and fisheries product sector and aquaculture facts sheets.

**TABLE 10: EMPLOYMENT IN THE FISH SECTOR (2011-2013)**

Number of persons employed in capture production	of Source	Number of persons employed in aquaculture production	of Source	Number of persons employed in other fisheries dependent activities	of Source	Total
2 500	<i>CRFM, 2015 (2013 estimate)</i>	1 115	<i>SIB, 2014 (2013 estimate)</i>	1 000	<i>Gongora, 2012 (2011 estimate)</i>	4 615

SOURCE: CARIBBEAN REGIONAL FISHERIES MECHANISM (CRFM) STATISTICS AND INFORMATION REPORT – 2014

The number of persons employed in fisheries dependent activities which are not either capture or aquaculture production has been estimated in 2011 to be about 1000. No equivalent estimate exists for a later period at least in resources which are publicly available. This number, however, can not be exclusively associated with processed production. The fisheries sector also provides employment for many persons who supply services and goods to the primary producers. The figure includes persons engaged in processing, preserving, storing, transporting, marketing and distributing or selling fish or fish products, as well as other ancillary activities, such as net and gear making, ice production and supply, vessel construction and maintenance as well as persons involved in research, development and administration linked with the fisheries sector. In other words, further analysis using data of limited access would be necessary to produce more precise estimates of the importance of employment in the seafood sector.

## 5. REGULATORY FRAMEWORK

### 1. International Trade Treaties:

- a. World Trade Organisation (WTO) and goods and services related Uruguay Round Agreements (1994). The WTO Agreements on Technical barriers to Trade and on Sanitary and phytosanitary measures will be particularly relevant in the case of seafood manufacturing.
  - b. The Economic Partnership Agreement between the EU and CARIFOURM (2008)
  - c. Founding Member of CARICOM and the Member of SICA
  - d. Various Free Trade Agreements with Colombia, Costa Rica, Cuba, Dominican Republic, Guatemala and Venezuela.
2. Law of the Sea (for further analysis of the law of the sea and multilateral environmental agreements, see study on the law of the sea, regulatory and governance framework in selected ocean-based sectors by UNCTAD-DOALOS (2018).
    - a. Convention on the Law of the Sea (1982)
    - b. The United Nations Fish Stocks Agreement (1995)
3. Instruments and soft law applicable to post harvesting and trade:
    - a. The FAO Code of conduct on Responsible Fisheries (Article 11) (1995)
    - b. The FAO Guidelines for The Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries (2009)

# APPENDIX

## TABLE A1: ABBREVIATIONS

BF	Belize Fisheries Department
DOALOS	Division for Ocean Affairs and the Law of the Sea of the Office of Legal Affairs
LDC's	Least Developed Countries
OECD	Organization for Economic Co-operation and Development
OETS	Oceans Economy and Trade Strategies
PCI	Product Complexity Index
RCA	Revealed Comparative Advantage
SIDS	Small Island Development States
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development

## TABLE A2: SECTOR PRODUCT COMPOSITION (HS-2012 CLASSIFICATION)

Sector	Product Name	HS6 Product code
	Fish-liver oils and their fractions	150410
	Fats and oils and their fractions, of fish, other than liver oils	150420
	Fats and oils and their fractions, of marine mammals	150430
<b>Seafood Manufacturing</b>	Prepared fish -- Salmon	160411
<b>Seafood Manufacturing</b>	Prepared fish -- Herrings	160412
<b>Seafood Manufacturing</b>	Prepared fish -- Sardines	160413
<b>Seafood Manufacturing</b>	Prepared fish -- Tunas	160414
<b>Seafood Manufacturing</b>	Prepared fish -- Mackerel	160415
<b>Seafood Manufacturing</b>	Prepared fish -- Anchovies	160416
<b>Seafood Manufacturing</b>	Prepared fish -- Eels	160417
<b>Seafood Manufacturing</b>	Prepared fish -- Other	160419
<b>Seafood Manufacturing</b>	Prepared fish -- Other prepared	160420
<b>Seafood Manufacturing</b>	Prepared Crustaceans-Crab	160510
<b>Seafood Manufacturing</b>	Prepared Crustaceans-- Not in airtight container	160521
<b>Seafood Manufacturing</b>	Prepared Crustaceans-- Other	160529
<b>Seafood Manufacturing</b>	Prepared Crustaceans-Lobster	160530
<b>Seafood Manufacturing</b>	Prepared Crustaceans-Other crustaceans	160540
<b>Seafood Manufacturing</b>	Prepared Crustaceans-- Oysters	160551
<b>Seafood Manufacturing</b>	Prepared Crustaceans-- Scallops	160552
<b>Seafood Manufacturing</b>	Prepared Crustaceans-- Mussels	160553
<b>Seafood Manufacturing</b>	Prepared Crustaceans-- Cuttle fish and squid	160554
<b>Seafood Manufacturing</b>	Prepared Crustaceans-- Octopus	160555
<b>Seafood Manufacturing</b>	Prepared Crustaceans-- Clams	160556
<b>Seafood Manufacturing</b>	Prepared Crustaceans-- Abalone	160557
<b>Seafood Manufacturing</b>	Prepared Crustaceans-- Snails	160558
<b>Seafood Manufacturing</b>	Prepared Crustaceans-- Other	160559
<b>Seafood Manufacturing</b>	Prepared Crustaceans-- Sea cucumbers	160561
<b>Seafood Manufacturing</b>	Prepared Crustaceans-- Sea urchins	160562
<b>Seafood Manufacturing</b>	Prepared Crustaceans-- Jellyfish	160563
<b>Seafood Manufacturing</b>	Prepared Crustaceans-- Other	160569

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Residues and waste from the food industries unfit for human consumption	230120
Salt (including table salt and denatured salt) and pure sodium chloride, whether or not in aqueous solution or containing added anti-caking or free-flowing agents; sea water salt	250100

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