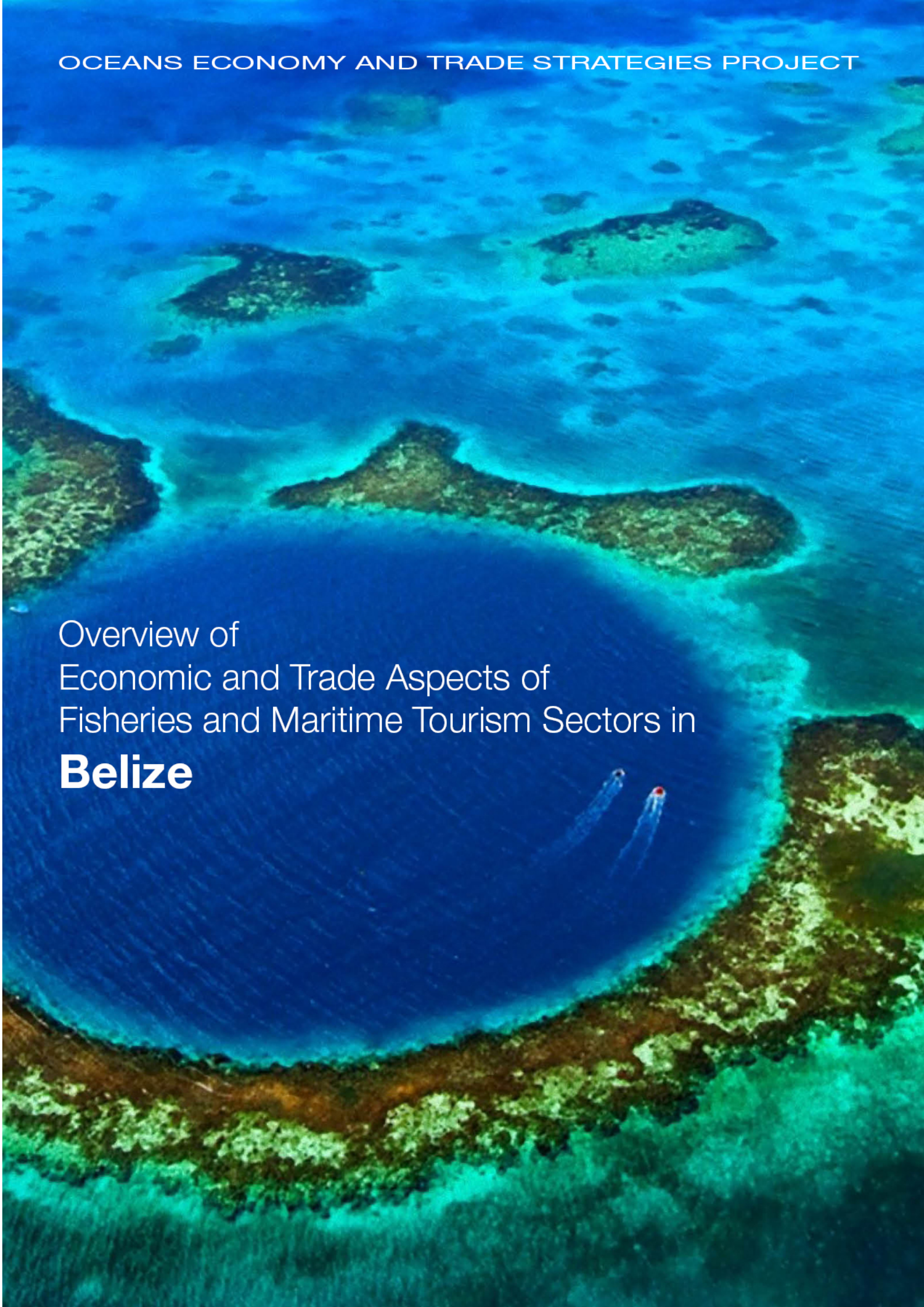
OCEANS ECONOMY AND TRADE STRATEGIES PROJECT



Overview of Economic and Trade Aspects of Fisheries and Maritime Tourism Sectors in **Belize**

Note

Acknowledgments

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Explanatory notes

Reference to “dollar” and “$” indicate United States dollars, unless otherwise stated.
Reference to product codes relate to the Harmonized System Nomenclature 2012 edition, unless otherwise stated.
Reference to “animal fodder” in this document refers to flours, meals and pellets, of fish or of crustaceans, molluscs or other aquatic invertebrates under the Harmonized System Nomenclature 2012 edition, unless otherwise stated.
Reference to “salt” in this document refers to salt and/or seawater salt under the Harmonized System Nomenclature 2012 edition, unless otherwise stated.
Use of a dash (–) between dates representing years, e.g. 2015–2017, signifies the full period involved, including the initial and final years.
To reflect the closest estimate for data, decimals and percentages are rounded off. Number in money is rounded to the nearest dollar, unless otherwise stated.
Decimals and percentages in this document do not necessarily add to totals, because of rounding.

Contents

Acronyms and abbreviations

BFD	Belize Fisheries Department
BPM	Balance of payments
BTB	Belize Tourism Board
CBB	Central Bank of Belize
CRFM	Caribbean Regional Fisheries Mechanism
EEZ	Exclusive economic zone
EMS	Early Mortality Syndrome
FAO	Food and Agriculture Organization of the United Nations
GATS	General Agreement on Trade in Services
GVC	Global value chain
LDCs	Least Developed Countries
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
ISIC	International Standard Industrial Classification of All Economic Activities
MPA	Marine protected area
NTMs	Non-tariff measures
OECD	Organisation for Economic Co-operation and Development
OETS	Oceans Economy and Trade Strategies
PCI	Product Complexity Index
SIB	Statistical Institute of Belize
SIDS	Small Island Developing States
UNCLOS	United Nations Convention on the Law of the Sea
UNDOALOS	United Nations Office of Legal Affairs Division for Ocean Affairs and the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNFSA	United Nations Fish Stocks Agreement
UNWTO	World Tourism Organization
WTTC	World Travel and Tourism Council

An Overview of Economic and Trade Aspects of Fisheries and Maritime Tourism Sectors in

Belize

1. 1 Introduction

The project "Evidence-based and policy coherent Oceans Economy and Trade Strategies" aims to support developing countries such as Belize 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 document presents detailed sectorial information on four ocean sectors in Belize to facilitate the identification and informed selection of key sectors to be considered for the next phase of the project.

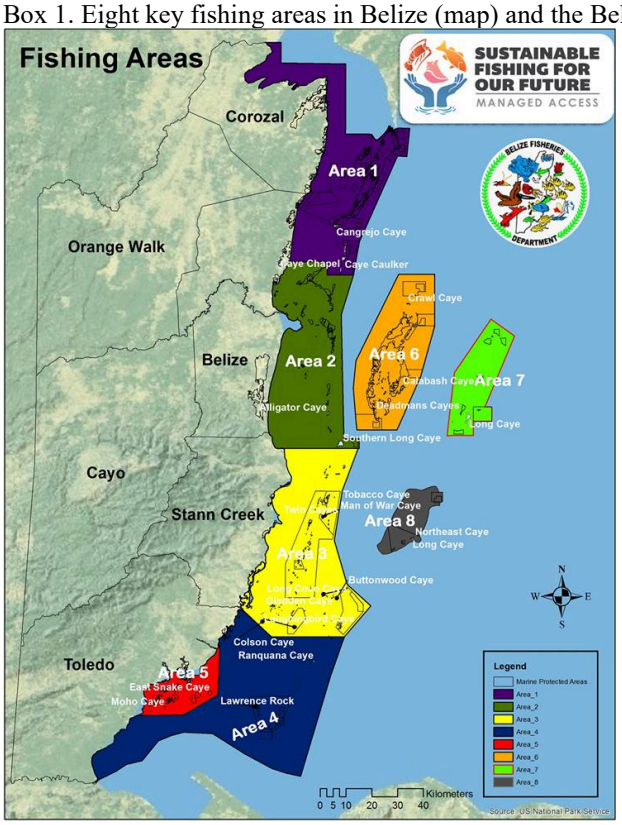
DEFINITION

There is no internationally agreed definition of "sustainable fisheries". One common understanding of this term refers to fishing activities that can be continued on a sustained or indefinite basis due to the renewable nature of the resource. A more methodological approach refers to the application of the maximum sustainable yield (MSY) that integrates economic and social considerations. The United Nations Fish Stock Agreement (UNFSA), 1995 prescribes its States Parties to establish limit reference points within the context of Articles 61 (3) and 119 (1)(a) of UNCLOS, 1982 that ensure "proper conservation and management measures to maintain or restore harvested species" at levels based on MSY and best scientific evidence [1] available to them.

On an institutional basis, 'sustainable fisheries' can be perceived to be fishing practices and actions that follow, and effectively apply, relevant international agreements, guidelines and best practices agreed (UNCTAD, 2016). Meanwhile, "sustainable tourism" refers to tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities (UNWTO-UNEP, 2005).

1.2 Belize fisheries and maritime tourism: At a glance

Box 1. Eight key fishing areas in Belize (map) and the Belizean context



Land: 22 966 km²
Coastline length: 386 km
Economic structure of the GDP (2016): agriculture and fisheries makes up 11.7% of GDP, industry 14.4% and services 59.9%. Tourism alone represents almost a quarter of GDP
Fisheries and aquaculture as a percentage of GDP: 3%
Main landing points: Belize City, San Pedro, Plascencia and Punta Gorda
Main manufacture sites: Independence and Mango Creek villages, among others
Tourism as a percentage of GDP (2017): 20-25% (direct contribution); up to 40% (total contribution, including indirect and induced effects)
Main tourist spots sites: Ambergris Caye, Caye Caulker, Great Blue Hole, Xunantunich, Hol Chan Marine Reserve

Source: Belize Fisheries Department. Available at https://www.facebook.com/287838751570329/posts/map-with-belize-fishing-areas/341762949511242/. Accessed on 7 May 2019.

1.3 Fisheries

Marine fisheries in this document are usually defined as the industry or occupation devoted to the catching, processing, or selling of fish, shellfish, other aquatic animals[2]. The fisheries sector plays a significant role in the economic development, food security, nutrition, poverty reduction, employment and livelihoods of coastal populations. Even though its average share in GDP ranges from about three per cent in Small Island Developing States (SIDS) to a low of less than one per cent for other countries, especially developed ones[3] - it is an important contributor to economic development and food security, especially for Belize, other SIDS and coastal Least Developed Countries (LDCs). Likewise, value addition and diversification in the fisheries sector can also expand livelihood opportunities, create jobs and expand internal downward and upward economic linkages in goods and services provision. Furthermore, exports of marine products may also positively contribute to the economic and social development of the communities involved in the sector.

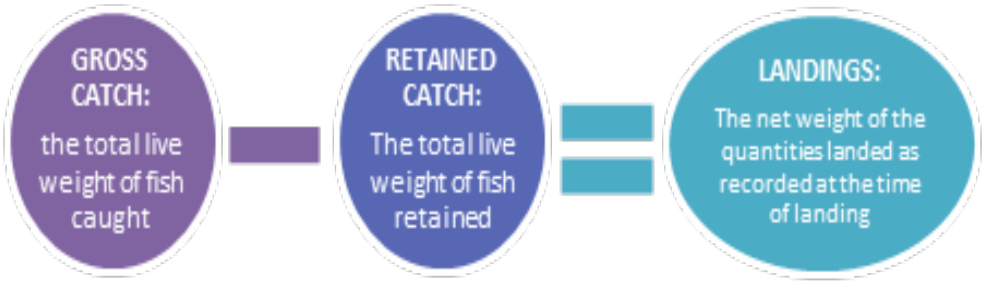
One of the most important part of the seafood value chain in Belize is the seafood manufacturing sector. With a growing demand driven by a total population of approximately 400,00 (permanent and short-term e.g. tourist stopovers) vis-a-vis highly competitive international markets in processed products such as canned tuna or animal fodder, the size of Belize's seafood manufacturing domestic market remains relatively small and development perspectives of the industry rather limited. However, there may be some good opportunities in lobster and shrimp processed products as soon as the aquaculture sector overcomes the consequences of the shrimp Early Mortality Syndrome (EMS) outbreak in 2015.

The fisheries and aquaculture industry in Belize also benefits from ideal climatic conditions with mean monthly maxima air temperatures ranging from 33°C / 91°F in the summer to 28°C / 82° F in the winter and mean monthly minima temperatures ranging from 16°C / 61° F in the winter to 24° C / 75° F in the summer. Warm sea water temperatures off the coast also open the doors for many investment opportunities in the industry, with Belize being sub-divided into two climatic systems with sub-tropical conditions in the northern lowlands and central inland areas, and tropical conditions in the southern and coastal areas. This increases the prospect for product diversification. One exceptional product in the Belizean aquaculture sector is the sea cucumber, which has a potential to become productive and profitable with good prospects for exports of processed products to expanding Asian markets. Despite an interim ban[4] on wild sea cucumber extraction activities in 2017 due to overexploitation (see Section 2, Marine Fisheries Sector) aquaculture production of sea cucumbers could benefit from previous trade relationships established before the moratorium.

Crucially still, Belize's aquaculture industry is highly vulnerable to adverse weather and disease outbreaks, in an area with increasingly unseasonal weather patterns and high risk of strengthened hurricane and tropical storm activity. Droughts and flooding are increasingly affecting aquaculture farm outputs as underlined in the Belize National Biodiversity Strategy and Action Plan (NBSAPs, 2016 – 2020)[5].

1.3.1 Landings

Box 2. Quantifying national landings in domestic ports

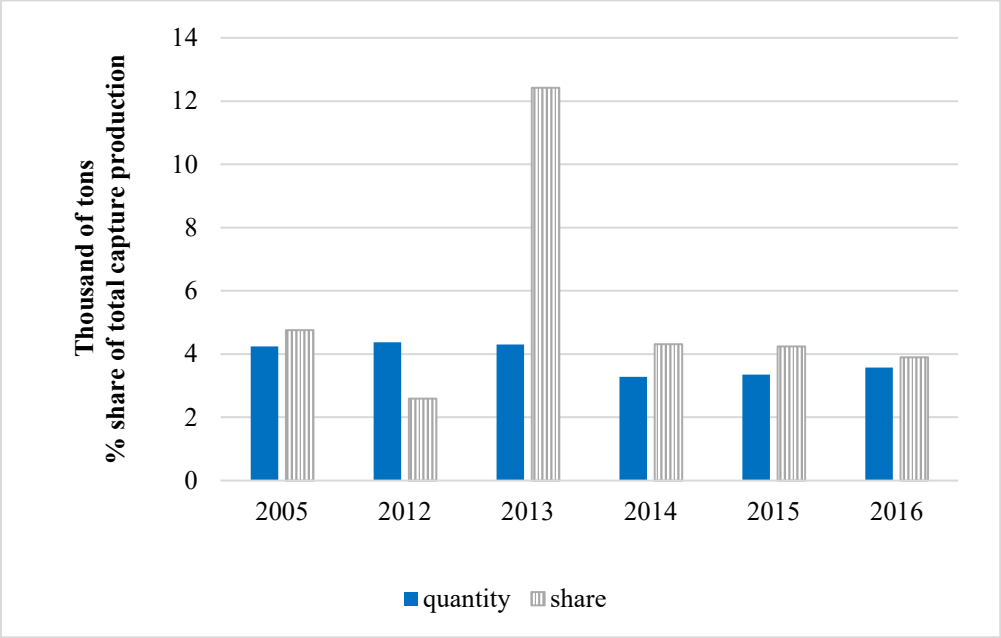


Source: FAO, 2004.
Note: There is still a considerable capture production that is not identified to the species level but is instead recorded as marine/freshwater fishes nei (nei = not elsewhere included), marine/freshwater molluscs nei and marine/freshwater (FAO, 2008).

Information on landings is not systematically reported in international data sources. But as mentioned previously, most pelagic marine fish are caught by vessels with Belize flag but land in other territories. For instance, exports declared by Belize do not include any tuna product while imports declared by trading partners may include such products. This is most probably linked to landings abroad from vessels registered with Belize authorities. Figure 1 reports rough estimates of landings based on the assumption that species not reported as exports but appearing as imports of Belize trade partners are not landed. This group consists of essentially pelagic marine fish species.

Landings have been relatively constant over the last decade showing some recovery pattern since the 2013 inflexion. They were equivalent to about four per cent of total capture production registered on vessels with Belize flag and correspond to about 3,700 tons in 2016.

Figure 1: Landings (quantity and share in total capture production), 2005-2016



Source: UNCTAD's estimates based on extracted data from FAO FishSTAT and UN Comtrade, November 5 2018.

1.3.2 Licenses and fleets

Licenses

In 2018, some of types of license fees (prices in dollars) set by Belize Fisheries Department for coastal fisheries (within the EEZ) are reported in Table 1.

Table 1: License* fees for coastal fisheries

Type of License	Price ($)
Commercial fish folks' licences (new and renewal)	25
Card Replacement	10
Vessel License under 20"	15
Vessel License over 20"	25
Researcher license	250 inside any protected area; 100 outside a protected area

Source: Belize Fisheries Department, n.d.
*Prices are based on published rates. See: http://www.fisheries.gov.bz/services/licenses/. Accessed on 28 May 2019.

The license fees for high seas fishing as published by the Belize High Seas Fisheries Unit were under review at the time of writing so they are not included in this document. Previous published fees varied depending on the target species, vessel type and type of fishing activity.

Fishing fleets

A fishing vessel is defined as "any vessel used or intended for use for the commercial exploitation of living marine resources, including mother ships and any other vessels directly engaged in such operation" (High Seas Fishing Act, 2013).

Artisanal fishing is carried out by about 500 boats operating in the shallow waters of the barrier reef and the three atolls, which provide habitats for many commercially valuable

stocks of lobster, conch, and a variety of coastal fish (UNWTO, 2017).[6] There are about 2,500 fishers licensed in Belize to operate within the exclusive economic zone (EEZ), indirectly employing 15,000 individuals and are organized into four cooperatives.[7] According to the High Seas Unit, there were 34 vessels listed as active in 2016.[8] This number has increased to about 57 vessels in 2018. This list applies only to vessels authorized to fish in areas beyond national jurisdiction (outside the EEZ).

1.4 Maritime and coastal tourism

There is no universally-accepted definition of maritime and coastal tourism. The following have been formulated and proposed by the private sector and are now widely used:

Tourism as a percentage of GDP (2017): 20-25% (direct contribution); up to 40% (total contribution, including indirect and induced effects).
Main tourist spots sites: Ambergris Caye, Caye Caulker, Great Blue Hole, Xunantunich, Hol Chan Marine

- **Maritime tourism** covers tourism that is largely water-based rather than land-based (e.g. boating, yachting, cruising, nautical sports), but includes the operation of landside facilities, manufacturing of equipment, and services necessary for this segment of tourism (Ecorys, 2013).
- **Coastal tourism** covers beach-based recreation and tourism (e.g. swimming, surfing, sun bathing), and non-beach related land-based tourism in the coastal area (all other tourism and recreation activities that take place in the coastal area for which the proximity of the sea is a condition), as well as the supplies and manufacturing industries associated to these activities (Ecorys, 2013).

In general, however, the terms "maritime" and "coastal" are interchangeably used when describing tourism.

1.4.1 Tourism and the economy: Measurement challenges

Measuring the economic performance or impact of tourism is not straightforward as official statistics rarely include pure tourism items. When they do, granularity of data is limited and does not allow capturing maritime and coastal tourism. Similarly, tourism is not included in standard goods and services trade reporting systems, nor it is directly captured by international trade statistics. For instance, UNCTAD and WTO use "SDB3" as an item code to measure the direct economic contribution of tourism:

Sector	BPM6/EBOPS 2010 item	Item name	UNCTAD/WTO Equivalent
Tourism	SDB3 (3-digit)*	Travel - Personal travel - Other Personal Travel	Travel, Personal, Other (other than health and education)

* Item SDB3 (3-digit) of the 2010 edition of the Extended Balance of Payments Services Classification (EBOPS 2010; BPM6).

Hence, indirect and induced effects are quantified relying on external sources, including literature.

1.4.2 Analytical implications

This document presents original analysis on Belize's maritime and coastal tourism conducted through using best-available official statistics published by the government of Belize and most authoritative international bodies, such as UNCTAD and the WTO. When tourism data were unavailable, the best approximate sector or industry has been used (accommodation and food services, travel etc.). In any case, survey data/insight or, as last resort, literature, has been used to complement sector/industry evidence and provide ad-hoc insight on the maritime and coastal tourism segment.

Collecting additional, more granular data will allow validating findings presented in this document and narrow down the focus of the analysis to an optimal level. A wish-list of key statistics or metrics is provided in Appendix 3.

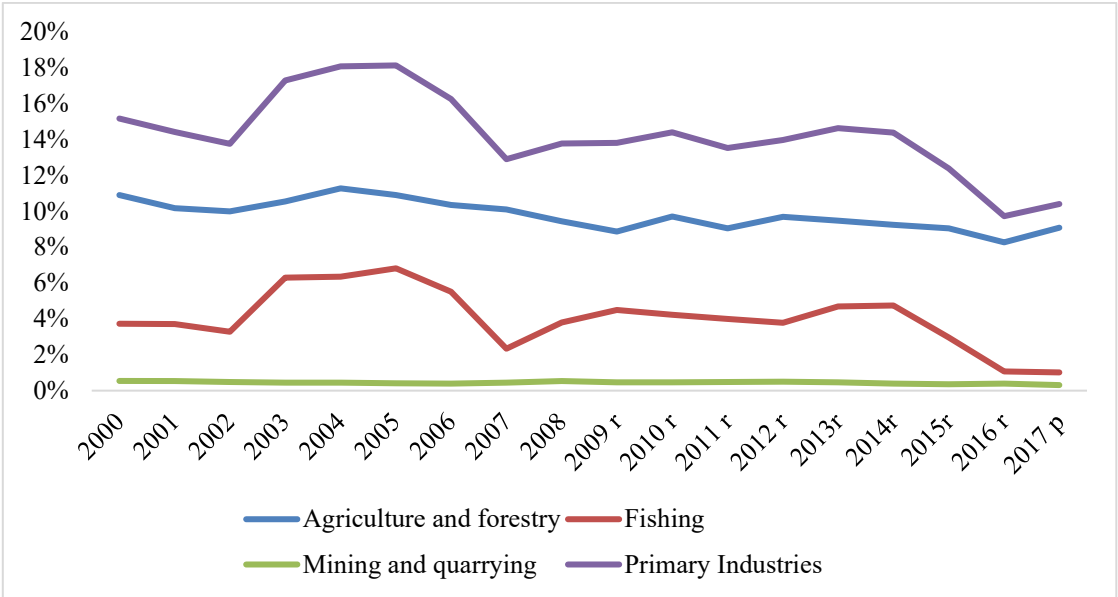
Marine Fisheries Sector

2.1 Introduction

Belize has a Caribbean coastline of 386 km and hosts a portion of the second largest coral reef in the world (the Mesoamerican Barrier Reef System) which provides enormous opportunities for sustainable use of marine resources inasmuch as it provides management challenges. Costal fisheries mainly focus on four resources: lobster, conch, sea cucumber and finfish. High seas fishing mostly harvests tuna species.

The evolution of the contribution to GDP of major primary sectors in Belize is reported in Figure 2. Agriculture and forestry sector remains the largest sector with a share in GDP varying between eight and about 12 per cent during the 2000-2017 period. However, the trend for the sector is declining if not a stagnant one.

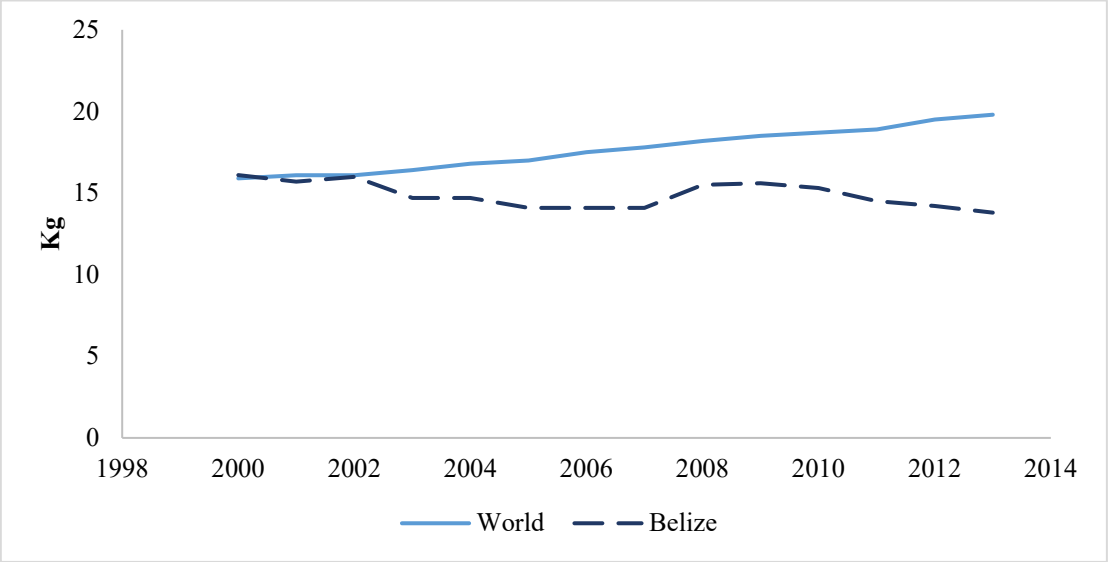
Figure 2: Share in GDP at constant process: primary industries (per cent), 2000-2017



Source: Belize Statistical Institute, 2018a.

The fishing sector is the second largest contributor to GDP amongst primary industries. At its highest, its share was about seven per cent. Lately, its contribution to GDP sank to slightly more than one per cent, driven to a large extent by the collapse of aquaculture production in the recent years.

Figure 3: Per capita supply of fish and fisheries products (kilograms)



Source: FAO FishStat, 2018.

Figure 3 depicts the evolution of per capita supply of fish and fisheries products of both Belize and the world average since 2000. After a few years of convergence between 1999 and 2002, supply per capita in Belize has been decreasing while the world trend continues to increase.

As to the external sector, while imports have shown some downward tendency over the last 15 years, the evolution of exports has been more erratic over that same period. In Figure 4a, exports (aquaculture products included) evolution has been negative between 2014 and 2016 and at best nil between 2016 and 2017. The trade balance of Belize in of fish and fisheries products (Figure 4c) had a similar pattern as the value of imports (Figure 4b) remains significantly smaller than that of exports. The exports to imports ratio was equal to 117 in 2014. It jumped down to 53 in 2016 to stand at 84 in 2017.

There is clearly some uncertainty concerning the evolution of supply capacity in the sector. A major challenge then may be in the definition of a development strategy able to stabilize overall production to guarantee acceptable earnings and sustained regular employment in the sector as well as security in consumption. Such an approach has already received support from FAO through the 2016-2019 FAO Country Programming Framework (CPF). One of its four priority areas is the enhancement of trade in fisheries products, “with an emphasis on supporting the development and implementation of institutional frameworks and arrangements for improved markets, and promotion of a gender-sensitive value chain approach.”

Figure 4a: Exports of fish and fisheries products, 2000-2017

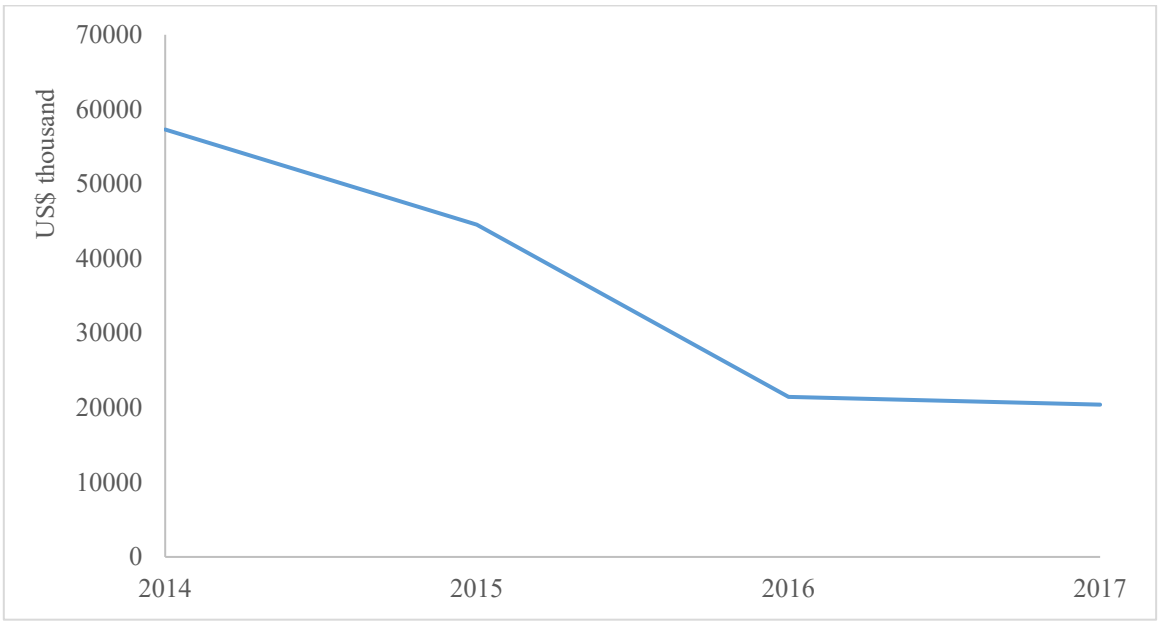


Figure 5b: , Import of fish and fisheries products, 2000-2017

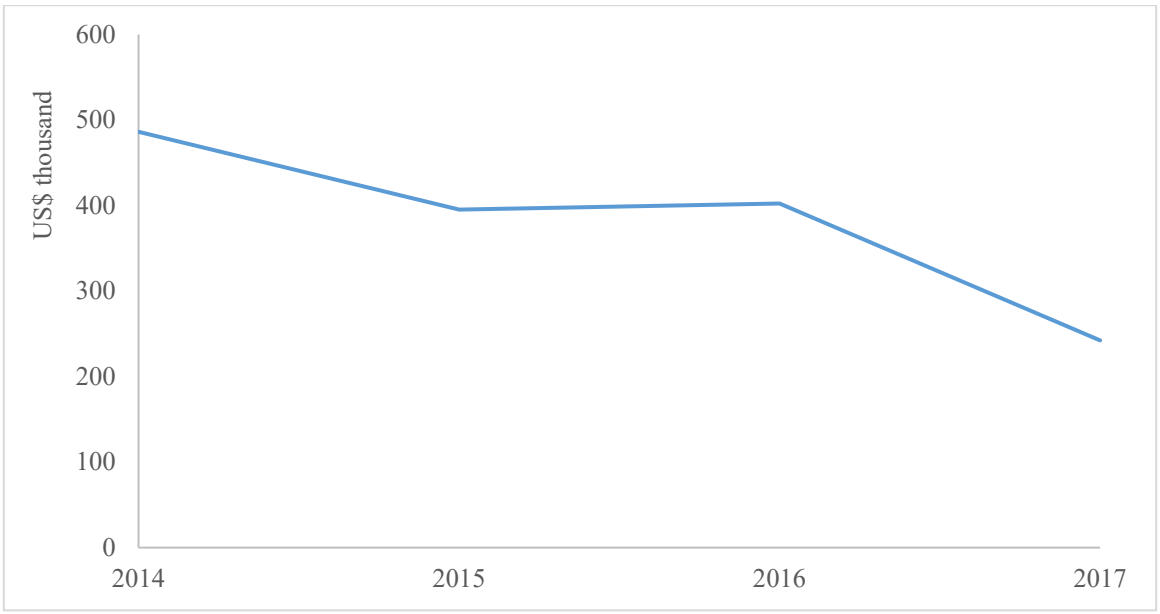
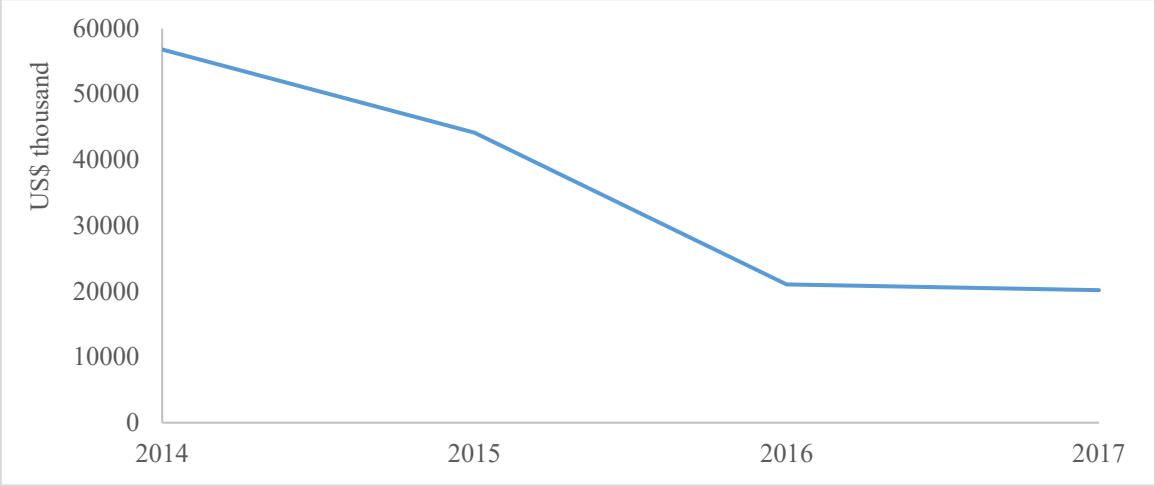


Figure 6c: , Trade balance of fish and fisheries products, 2000-2017



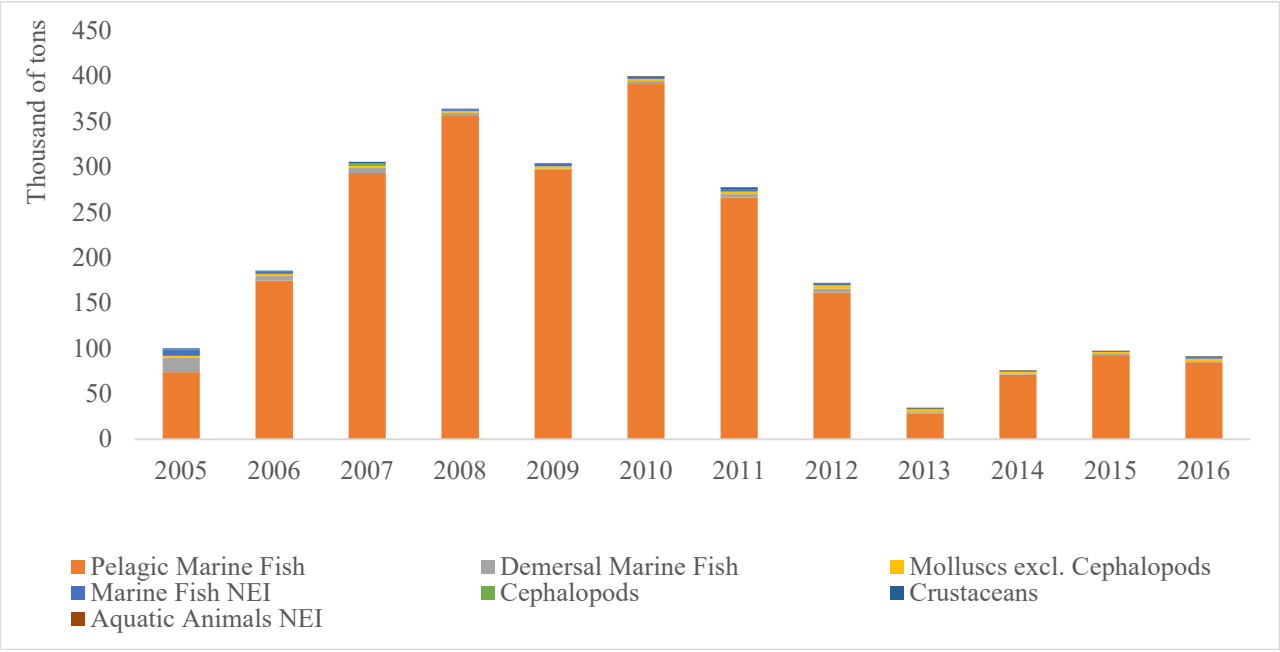
Source: Extracted data from UN COMTRADE via WITS (based on Belize reporting), 5 November 2018.
Note: Aquaculture products are included.

2.2 Production

2.2.1 Total capture

Total capture production as shown in Figure 5 has been recovering conservatively since its collapse in 2013 (see Section 4, Aquaculture Sector). In 2016, it stood at slightly more than 91,000 tons after it shrunk to about 35,000 tons in 2013. It further indicates that capture production has been driven essentially by catches of pelagic marine fish species mainly in international waters.

Figure 7: Capture production (by groups of species), 2005-2016



Source: Extracted data from FAO FishStat, 5 November 2018.

Note: "nei"= Not elsewhere included

Capture fisheries production in coastal waters are mainly focused on two valuable resources: lobster and queen conch. Between 2008 and 2014, the average annual production of lobster was quite stable at about 650 tons, and about 700 tons between 2012 and 2016. However, the production of queen conch which has shown stability at around 3,000 tons until 2013, has dropped sharply to 2,000 tons to jump back to about 2,700 tons in 2016. The total production in coastal waters was around 900 tons in 2016 (FAO, 2018a).

2.2.2 Catch recording for licensed vessels

Belize is an "open registry" State, with a number of non-locally owned fishing vessels flying its flag. As of this writing, it has authorized 60 vessels to operate in the high seas under the 1995 FAO Compliance Agreement. Information on catches landed in Belize is registered by Belizean authorities. This is not the case for vessels operating in offshore waters and landing their catches abroad. For these vessels, information on catches is available only from sources external to the country (FAO, 2018a) and may differ from national data.

Tuna catches from these vessels have surged from 4,000 tons per year since 2003 to 24,000 tons in 2012 and eventually dropping to about 17,000 tons in 2016. Whereas catches of other species, mainly small pelagic species (e.g. sardines, mackerels, anchovies) from Eastern Central Atlantic and the Southeast Pacific peaked at nearly 1.4 million tons in 2010, this decreased dramatically to around 70,000 tons in 2016. (FAO, 2018a).

Similarly, capture of coastal fishes also declined sharply from 2013 to 2015. From 800 tons in 2012, it shrunk to 34 and 20 tons from 2014 to 2015 respectively. The next year, recorded capture increased slightly but was only about 24 per cent of the 2012 capture.

Figure 8: Capture production (by species), 2005 and 2012-2016

Figure 6 (a)

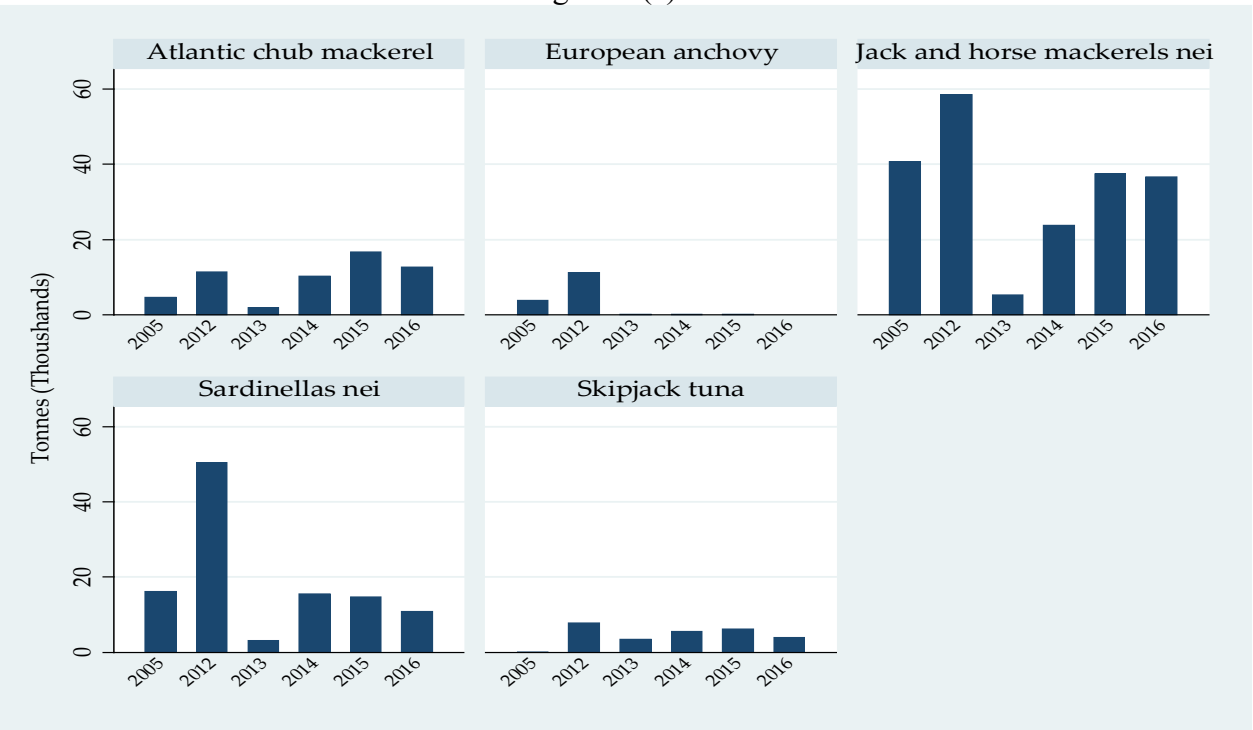


Figure 6 (b)

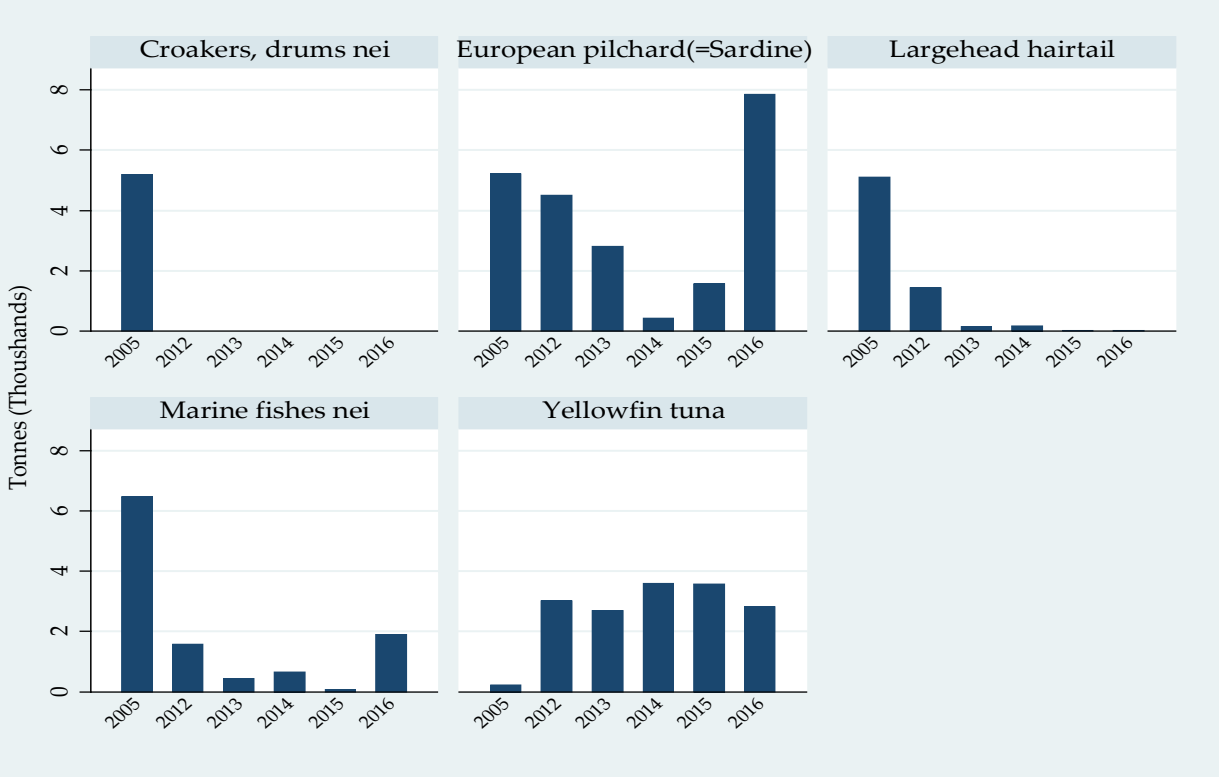


Figure 6 (c)

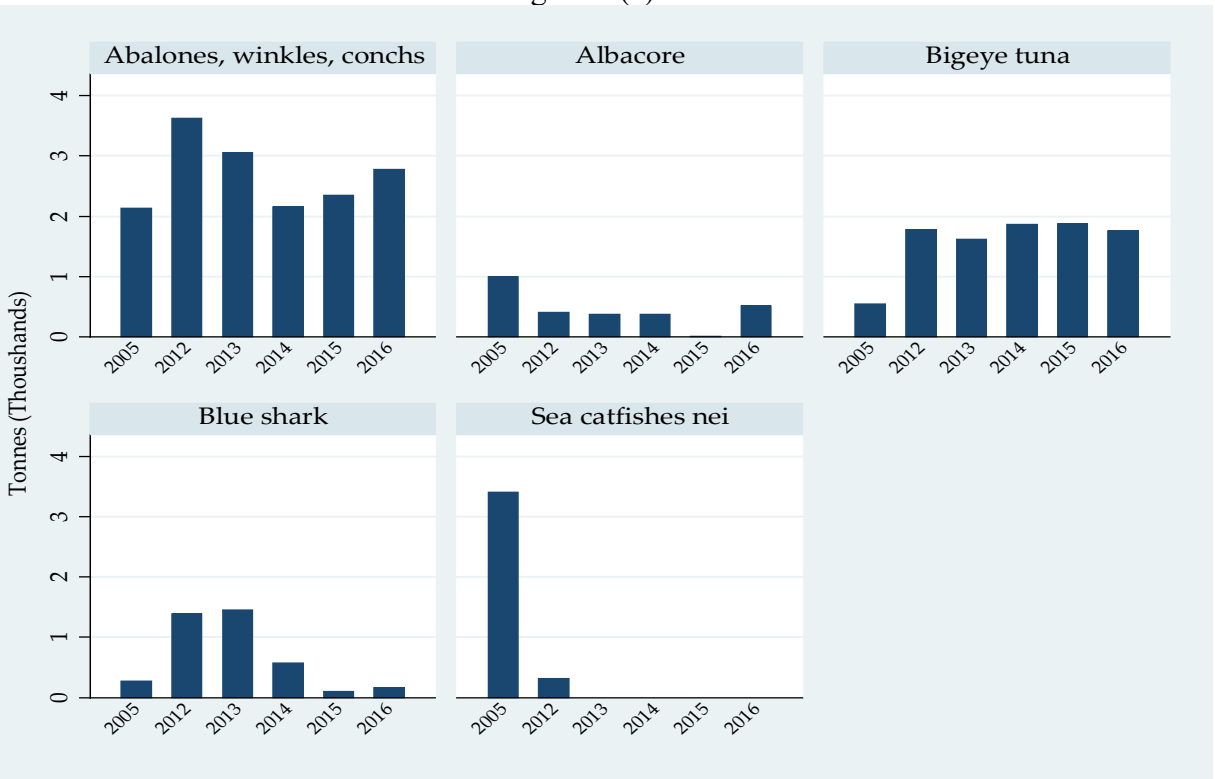
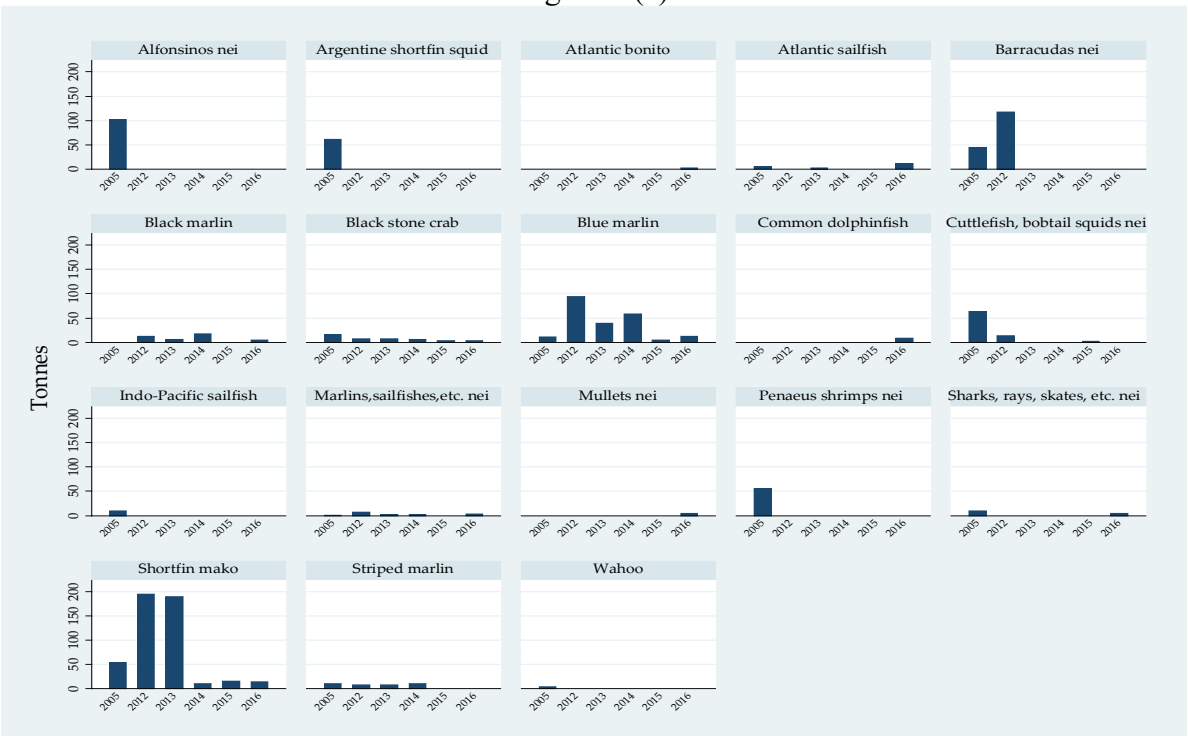


Figure 6 (d)

Figure 6 (e)



Source: Extracted data from FAO FishStat, 5 November 2018.
Note 1: Panel (a) includes species with catches larger than 10,000 tons. Panel (b) includes species with catches between 5,000 tons and 10,000 tons. Panel (c) includes species with catches between 1,000 and 5,000 tons.

Panel (d) includes species with catches between 200 and 1,000 tons. Panel (e) includes species with catches of less than 200 tons.
Note 2: "nei" = Not elsewhere included

As shown in panels (a) and (b) of Figure 6 several species from various groups were captured on a temporary basis. For instance, sea cucumber's extraction (which was under pressure from consistent and increasing demand from the Asian markets) has decreased sharply between 2012 and 2016 (see Figure 6, panel (d)). This was due to an increasingly tighter control from Belize Fisheries Department (BFD) to preserve the domestic stocks and manage its utilization sustainably. Consequently, BFD banned the extraction for all species of sea cucumber in 2017[9]. Currently, its production in aquaculture is being considered and may be launched shortly as discussed in Section 4, Aquaculture Sector.[10]

2.3 Trade

2.3.1 Overview

As mentioned above, the value of total exports of fish and fisheries products decreased significantly since 2014 after a period of strong recovery starting in 2010. However, as suggested by figures contained in Table 3, this downward tendency seems to be the consequence of a collapse in exports of aquaculture products. Exports value of marine products steadily increased from 12.9 million in 2014 to 14.6 million in 2017 despite ups and downs in quantities eventually reflecting some price evolutions mostly favourable to Belize exporters. The share of marine products in total exports has increased significantly due to the general downward trend observed during the 2014-2017 period moving from slightly more than four per cent in 2014 to 6.5 per cent in 2017. Although this may be interpreted positively, it may also be related to the collapse of the aquaculture sector in 2015 to due to the outbreak of the EMS shrimp disease (see Section 4, Aquaculture Sector). The number of destinations dropped from 18 in 2014 to 12 in 2017. The total number of exporter products also decreased by a third from 21 in 2014 to 14 in 2017.

Table 2: Exports, number of products, number of destinations, 2014-2017

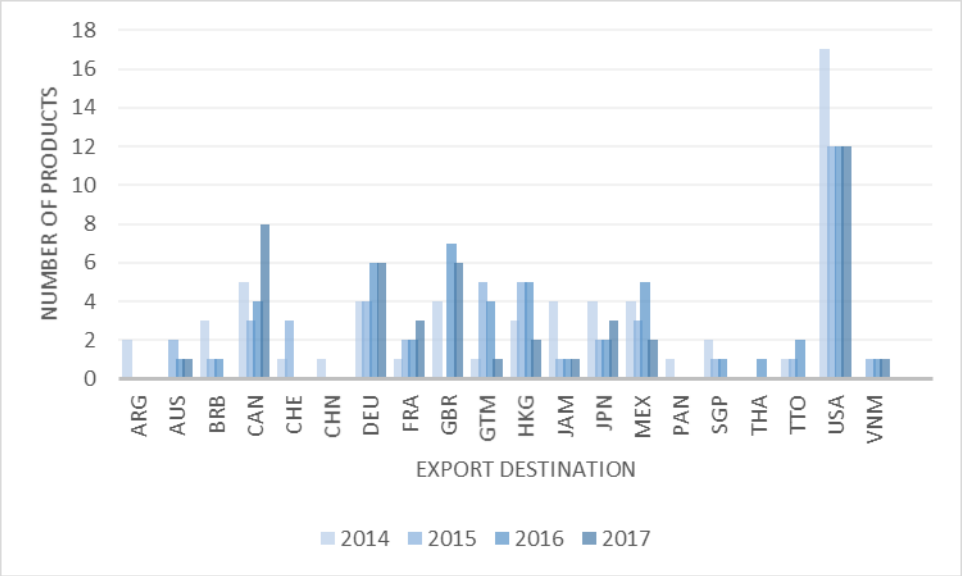
	2014	**2015**	**2016**	**2017**
Exports value ($ millions)	12.9	13.6	14	14.6
Exports quantity (tons)	1875.4	1610.4	1880.2	1691.2
Number of Destinations	18	15	15	12
Number of Products	21	15	14	14
Total Exports ($ millions)	307	268	201	223
Share in Total	4.2%	5.1%	7%	6.5%

Source: Extracted data from UN Comtrade via WITS (exports data), 5 November 2018.
Note 1: Aquaculture products are not included in any calculation.
Note 2: Trade data based on the 2012 version of the HS classification are available only since 2014 for Belize.
Note 3: Data reflect export flows as declared by the competent authority to the United Nations Statistical division.

Figure 7 shows how the product destination composition has evolved during the 2014-2017 period. The United States of America represent the most important destination although the

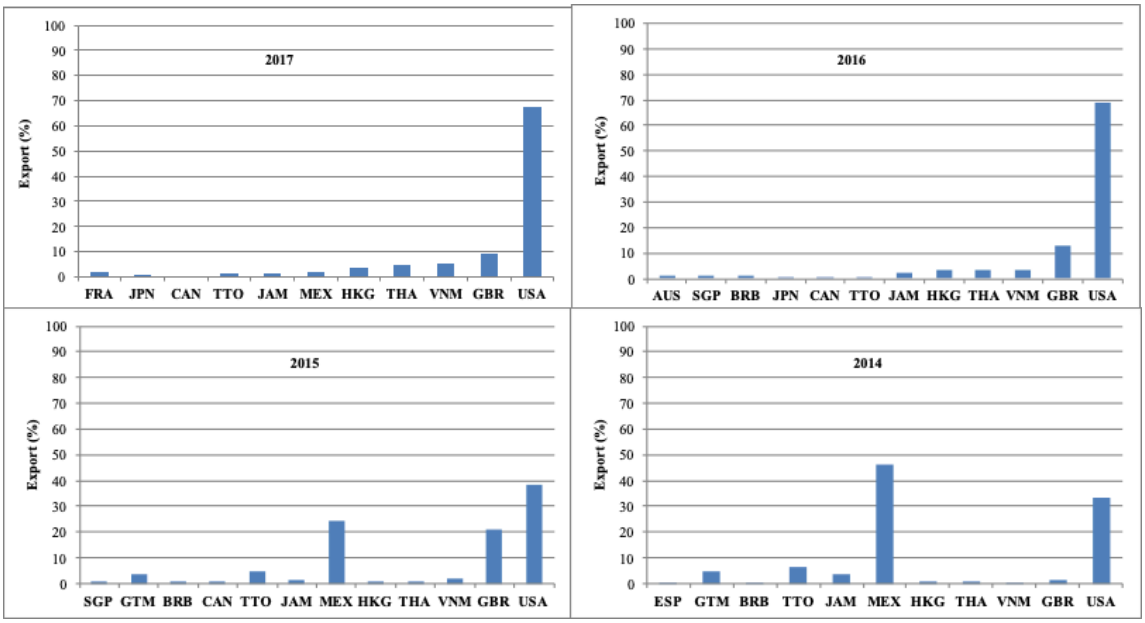
number of products reaching their market has decreased, followed by Canada, the United Kingdom of Great Britain and Northern Ireland, and Germany with half of the products sent to the United States market. Late incomers are Eastern Asian countries such as Viet Nam and Singapore. Exports to China were interrupted in 2015 as a result of the interruption of sea cucumber harvesting (see Section 4, Aquaculture).

Figure 9: Number of products per destination, 2014-2017



Source: Extracted data from UN Comtrade via WITS (exports data), 5 November 2018.
Note 1: Aquaculture products are not included in any calculation.
Note 2: The number of products is defined using the HS 2012 version classification. See details in Appendix 1.
Note 3: Full official UN country names are provided in Appendix 4.

Figure 10: Major export destinations, 2014-2017



Source: Extracted data from UN Comtrade via WITS (exports data), 5 November 2018.
Note 1: Aquaculture products are not included in any calculation.
Note 2: Full official UN country names are provided in Appendix 4.

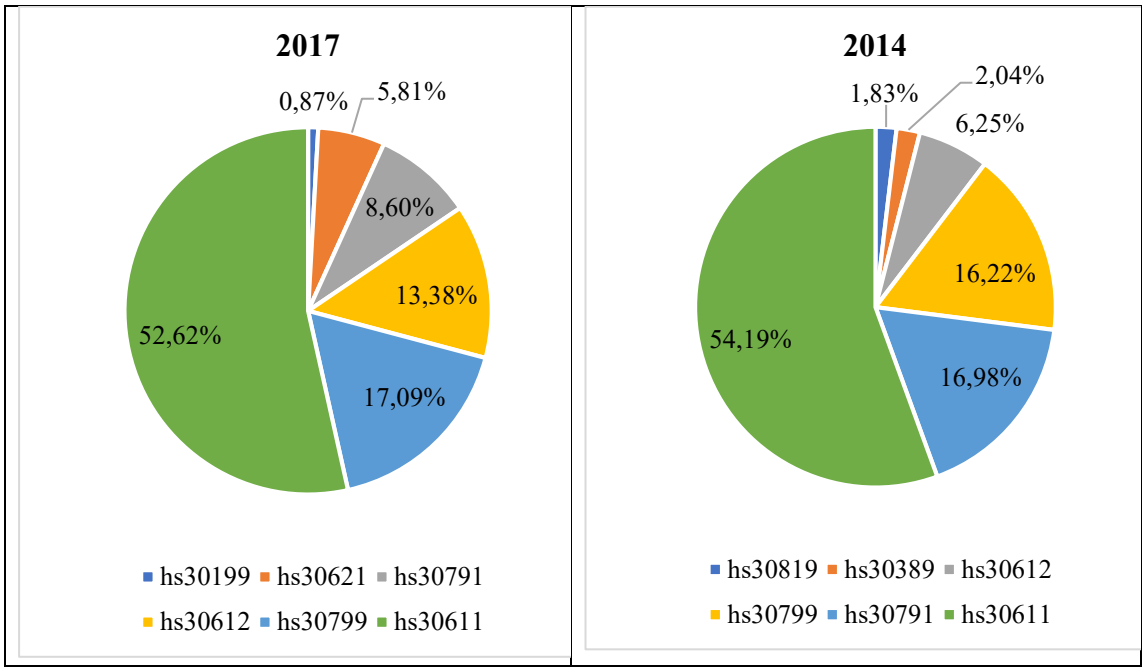
Figure 8 presents major export destinations in terms of value share. The share of the United States of America remarkably increased from 33.5 per cent to about 68 per cent in no more than four years. At the same time, the share of exports to Mexico collapsed from about 47 per cent in 2014 to a mere 2.1 per cent three years later, which could be attributed to the EMS outbreak in 2015 (see Figure 29, Section 4.3.2).

2.3.2 Supply capacities

As shown in Figure 9, export composition reflects capture production composition. Frozen lobsters as represented by products HS 0306.11 and HS 0306.12 and HS 0306.21 are the main exported product in 2014 and 2017 followed by queen conches (HS 0307.99 and HS 0307.91). Lobsters share increased from about 60 per cent in 2014 to about 72 per cent in 2017. As to queen conches, their share fell from 33 per cent in 2014 to about 26 per cent in 2017. Interestingly, while lobster and conch exports are not huge in volume, they are very significant in terms of exports value.

Not surprisingly, sea cucumbers disappeared from the list of exported products in 2017 while ornamental fishes became the sixth most important product exported. The latter's share is less than one per cent though showing potential for Blue BioTrade activities (UNCTAD, 2018).

Figure 11: Major products exported, 2014 and 2017



Source: Extracted data from UN Comtrade via WITS (exports data), 5 November 2018.

Note 1: Details for the relevant HS codes for marine fisheries products are in Appendix 1.
Note 2: HS codes: 0301.99: Other live fish; 0306.21: Not frozen rock lobster and other sea crawfish; 0307.91: Other molluscs including flours, meals and pellets, fit for human consumption (Live, fresh or chilled); 0306.12: Frozen lobsters; 0307.99: Other molluscs including flours, meals and pellets, fit for human consumption (other); 0306.11: Frozen rock lobster and other sea crawfish; 0308.19: Sea cucumbers, (other than live, fresh or chilled); 0303.89: Other (other fish, excluding livers and roes)

2.3.3 Demand

Demand dynamics can be appreciated, although roughly, by looking at the evolution of imports in both value and quantity terms. Figure 10 shows demand for products exported by Belize has changed in their destination markets. Growth rates represented are the average of yearly growth rates computed between 2014 and 2017. Figures appear to be negative for several products. Frozen lobsters remain the most dynamic product of Belize in export destination markets.

Figure 12: Average import growth in Belize's destination markets (per cent), 2014-2017

Source: Extracted data from UN Comtrade via WITS (exports data), 5 November 2018.

Note 1: Growth rates larger than 100% are excluded.
Note 2: Details for the relevant HS codes are in Appendix 1.

Figure 13: Average import growth in world markets (per cent), 2014-2017

Source: Extracted data from UN Comtrade via WITS (exports data), 5 November 2018.
Note 1: Growth rates larger than 100% are excluded.
Note 2: Details for the relevant HS codes are in Appendix 1.

Figure 11 estimates similar average growth rates but including all possible destinations. Generally, growth figures are even less encouraging than those obtained for historical Belize export markets, which is either negative or only slightly positive. This may be interpreted as a caveat to any sectoral development strategy focusing exclusively on non-processed products.

Calculations of Figures 10 and 11 were voluntarily based on growth rates strictly below 100 per cent in order to avoid any possible bias the appearance of new markets would induce. By looking at these outlying observations, some additional information can be retrieved. We observe that particularly dynamic demand in Belize destination markets is obtained for products 0303.83 (frozen toothfish), 0306.11 (frozen rock lobster), and 0307.89 (abalone other than live, fresh or chilled). Particularly dynamic importing countries appear to be Viet Nam, Thailand, Argentina, China, Guatemala and the United Kingdom.

Table 3: Dynamic demand, 2014-2017

	Viet Nam	Thailand	Argentina	China	United Kingdom	Guatemala
0301.11	X					
0301.99	X					X
0303.55						
0303.83				X	X	
0303.89						
0304.99			X		X	
0305.69				X	X	
0306.11		X	X	X		X
0306.12		X				
0306.21	X	X				X
0306.24	X	X	X			X
0306.29		X	X			
0307.11	X					
0307.39		X				
0307.60	X			X		
0307.71					X	
0307.79			X			X
0307.89	X				X	
030791	X					X
0307.99	X		X			
0308.19						
0308.21	X	X				
0308.90	X	X		X		

Source: Authors' calculations based on extracted data from UN Comtrade via WITS (exports data), 5 November 2018.
Note: Crosses indicate at least one recorded growth rate during the 2014-2017 period larger than 100%.

2.3.4 Discrepancies between exports and mirror imports data

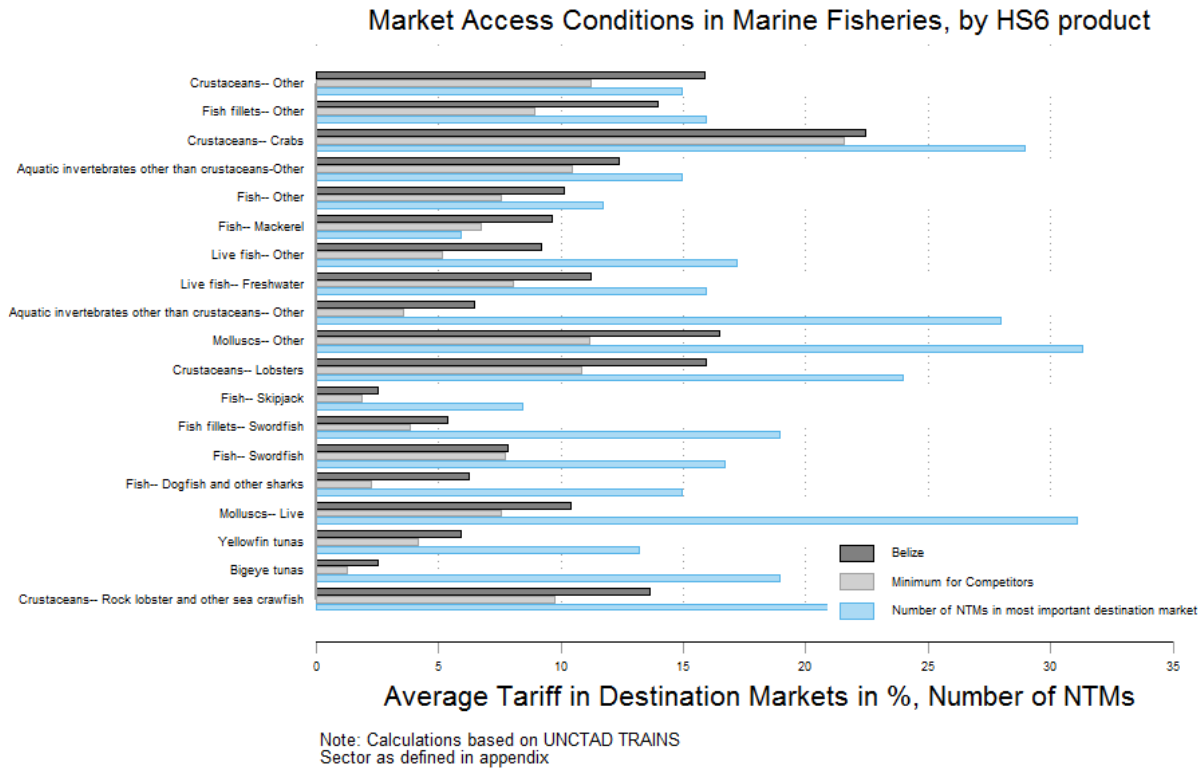
Trade flows as reported in UN Comtrade are in principle declared twice: (1) by the exporting country and (2) by the importing country as long as a trade flow exists. The difference between the values declared by each side of the trade relationship should reflect the freight and insurance costs. In practice, 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.

Belize exports of fish and fisheries products are no exception. Based on importing countries declarations, Belize exports would amount to more than $34 million more than twice the value of the declared exports. In 2017, Belize capture products are exported to 23 countries not 12 as found on the exports side. The number of capture products exported in 2017 is 33 as opposed to the 14 registered as exports for the very same year. The reason for such discrepancies is likely to be linked to the open registry approach adopted by the Belize authorities and landings in third countries. This may not be dramatic as such but it certainly requires more attention. For instance, imports of frozen tuna from Belize vessels appear to be worth about $17 million and amount to circa 6,500 tons.

2.3.5 Market access conditions

Besides supply side capacity and competitiveness, the level of market access (tariff and non-tariff measures (NTMs) is another important determinant for export success.

Figure 14: Tariffs and NTMs for Belizean marine fisheries



Source: Authors' calculations based on extracted data from UNCTAD TRAINS, 1 November 2018.

Belize's marine fisheries exports tend to face higher tariff rates than its competitors as shown in Figure 12. In many cases, tariffs go beyond the average applied and WTO favourable tariffs. Becoming a Party to UNCTAD's Agreement on the Global System of Trade Preferences among Developing Countries (GSTP) could be a good option to reduce tariff barriers for Belize. The average number of non-tariff measures (NTMs) is high for Belize exports. NTMs are not voluntary standards but mandatory regulations to be able to commercialise in the internal market of importing countries. While this is not surprising in the fisheries sector where NTMs are 2.5 times more common than in manufactures (UNCTAD, 2016 and Fugazza, 2017), it is a worrisome factor. A more specific mapping will be necessary to understand the number, nature, typology and impact of these measures on Belize exports. Again, a more targeted trade strategy seems greatly needed to secure access to key markets.

2.4 Employment

According to FAO statistics based on national sources, employment in the capture production sector represents the bulk of employment in the fish industry especially after the recent collapse of the aquaculture production of whiteleg shrimps in 2015. Unfortunately, statistics data are not available at a very disaggregated level. Figures reported in Table 5 indicate that the share of employment in the capture production represents ten to 12 per cent of

employment in the primary sector. The latter recently represented no more than 15 to 16 per cent of total employment.

Table 4: Employment in the capture production fish sector, 1990-2017

	1990	2000	2010	2011	2012	2013	2014	2015	2016	2017
Capture	1.75	1.87	2.47		2.76	2.5	2.43			
Primary industry	17	20	21	21	22	22	23	23	23	24
Share in primary industry (%)	10.3	9.4	11.8		12.5	11.4	10.6			

Source: Extracted data from FAO statistics and ILOSTAT, 5 November 2018.

2.5 Environment

Belize is internationally known for its environmental conservation efforts and great care of its ocean facade. The Belize Barrier Reef Reserve System (BBRRS) is part of the UNESCO World Heritage sites list since 1996. Belize is a Party to and has implemented various relevant multilateral environmental agreements including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Convention on Biological Diversity (CBD), and the Inter-American Convention for the Protection and Conservation of Sea Turtles (2001)-(IACST) to protect biodiversity and marine species. More recently, Belize issued an indefinite moratorium on oil, gas and mining exploration (See Petroleum operations (Maritime zone moratorium) Act, No. 54 of 2017)[11].

Belize has been a leader in the creation of nine Marine Protected Areas (MPAs) in the Caribbean that are directly managed or co-managed by Belize Fisheries Department (BFD). It has also declared three marine national parks, two natural monuments, twelve fish spawning aggregations sites and two marine wildlife sanctuaries. All the above cover a surface of some 4,051 km² (or 21.6 % of Belize territorial seas).[12]

The Belize Fisheries Act (last revised in 2000) regulates fishing in Belize in terms of the types of commercial activities that are allowed within their EEZ. The Act regulates the issuing of different types of licences for fishing, scientific research; export of marine products and the types of nets and gear allowed for fishing. It also strictly regulates and limits the use of poison, explosives and other types of destructive practices. Moreover, the Act also establishes, controls and regulates marine reserves. For activities by fishing vessels in the high seas, including measures against Illegal, Unreported and Unregulated (IUU) fishing and pollution control, the main regulation is the High Seas Fishing Act of 2013 (HSFA, 2013).

Seafood Manufacturing Sector

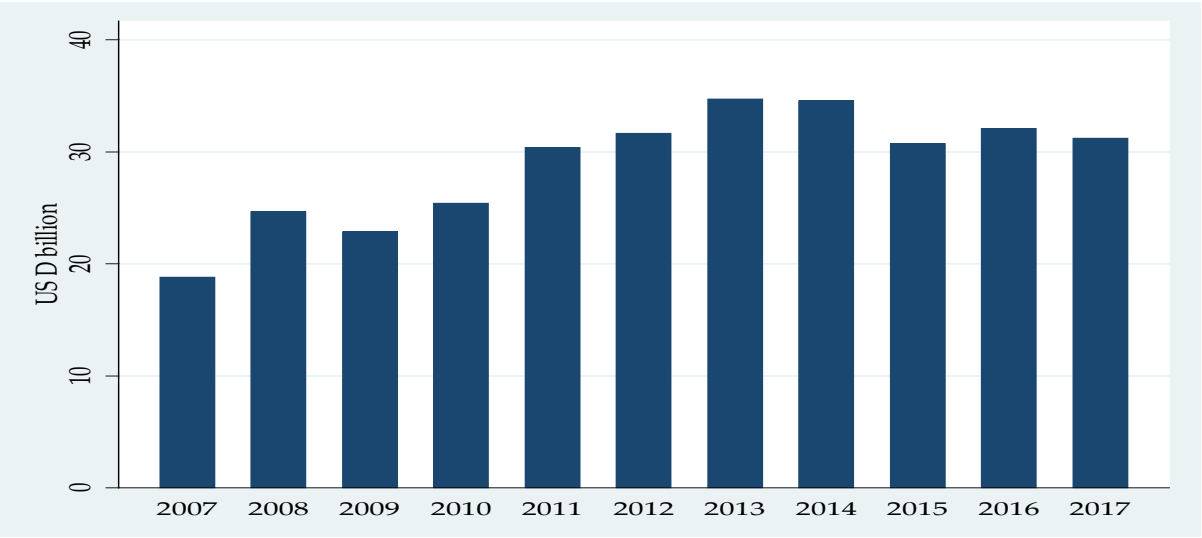
3.1 Introduction

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, 2018b) 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 13

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 per cent despite a sustained growth path between 2007 and 2013-2014.

While seafood has the lion share of the fish processing business, non-edible uses should not be disregarded as there are increasing trends towards the demand for 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 15: Total exports of seafood products, 2007-2017



Source: Extracted data from UN COMTRADE via WITS (exports data), 5 November 2018.

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 $152 billion in 2017. Over 50 per cent of this trade originates in developing countries whose net trade income (export – import), valued at $37 billion in 2013, is greater than the net income of most other agricultural commodities combined (UNCTAD-FAO-UNEP, 2018). CARICOM exports of fish and seafood have been estimated $400 million with a potential for additional $130 million in exports, if appropriate food safety measures were in place (Jamaica Observer, 29 May 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-UNEP, 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.

3.1.1 The seafood value chain

An important aspect of the seafood value chains it that it uses inputs from both the aquaculture and fisheries extractive sector 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 (Box 3).[13] The 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.

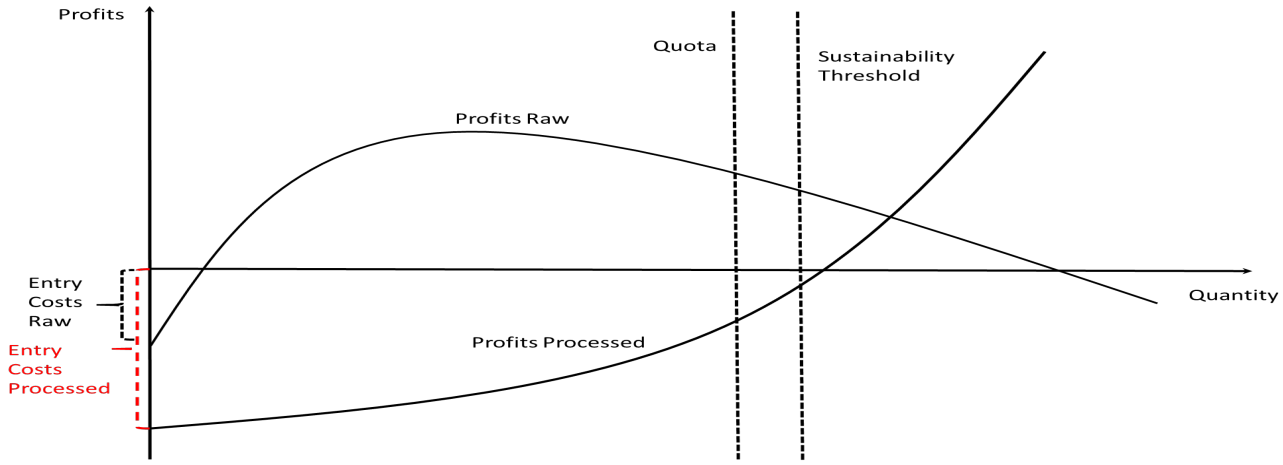
Box 3: A simplified representation of the seafood value chain

Source: UNCTAD, 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 Figure 14. The evolution of profits for raw products (fresh or chilled) aims 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 Figure 14, 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).

Figure 14 is likely to be over simplistic. However, it should only be used as a basis for conceptualizing sectoral development strategies.

Figure 16: Profit trajectory of raw and processed fish products



Source: Authors' own elaboration.

3.2 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: Domestic Supply/Consumption = Production + Imports – 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 6. As mentioned, previous 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 5: Fish meal consumption components (in tons), 2004, 2005, and 2007

Element	Year	Value
Domestic supply quantity	2004	8
Export quantity	2004	62
Import quantity	2004	0
Production	2004	70
Domestic supply quantity	2005	5
Export quantity	2005	255
Import quantity	2005	0
Production	2005	260
Domestic supply quantity	2007	7
Export quantity	2007	0
Import quantity	2007	7
Production	2007	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. The next sub-section presents the export performance of Belize, which has been essentially driven by sea cucumber processing in the very last year with a complete interruption of export flows due to the moratorium on sea cucumbers extraction as there were symptoms of depletion.

3.3 Trade

3.3.1 Overview

Trade data are based on the 2012 edition of the Harmonized System classification (HS- 2012) which remains the one used by Belizean authorities in their declaration to the United Nations Statistics Division (in charge of gathering trade data form all United Nations Member States and publishing them in its harmonized database, UN Comtrade). An exhaustive list of products discussed in this document as defined in the HS-2012 classification is reproduced in Appendix 1. Three groups of products can be defined: (1) fish fats and oils, (2) fish preparations based on different categories of species and (3) fish residues and waste products and salt. As to the salt product, it may not exclusively refer to salt from 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 7, total exports of seafood products are negligible if compared to the level of exports of unprocessed marine fisheries and aquaculture exports. For 2017, no exports have been declared. In 2016, exports were about $160,000 and about $60,000 the year before. Three different products have reached two destinations in 2015, namely the United States of America and Hong Kong, China. Moreover, exports of products other than prepared or preserved sea cucumbers are reported with zero values.

Table 6: Exports, number of products, number of destinations, 2014-2017

	2014	2015	2016	2017
Exports value ($)	-	59,327	159,253	0
Exports quantity (tons)	0.256	10.15	31.48	0
Number of destinations	1	2	1	0
Number of products	3	1	1	0
Total exports ($ million)	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: Extracted data from UN Comtrade via WITS (exports data), 5 November 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 United Nations 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 the import side is considered. Table 8 shows that the number of products imported has been in the mid-to-low 20s 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 mere five per cent of the imported value in 2015 and about 13 per cent in 2016 to plummet to zero in 2017. In quantity terms, imports varied between about 6,000 tons in 2016 and 7,000 tons the year before. The last available information indicates a total quantity of imported products equal to 6301.6 tons.

Unit values (values/weight) computations for the year 2016 reveal that one kilogram of exports of processed sea cucumber yielded about $5, while a similar import cost on average about $0.20.

Table 7: Imports, and number of products, 2014-2017

	2014	2015	2016	2017
Imports value ($ million)	1.33	1.261	1.262	1.11
Imports quantity (tons)	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: Extracted data from UN Comtrade via WITS (imports data), 5 November 2018.
Note 1: Trade data based on the HS 2012 classification are available only since 2014 for Belize.
Note 2: Data reflect import flows as declared by the competent authority to the United Nations Statistical division.

3.3.2 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, as reported in Table 9. Inevitably, exports dropped to zero with the suspension of the extraction for all species of sea cucumbers in early 2017.

Table 8: Seafood products exports, 2014-2016

Product code	Description	Year	Exports ($)	Net weight (Kg)
1604.11	Prepared or preserved salmon	2014	0	160
1605.59	Prepared or preserved crustaceans	2014	0	66
1605.61	Prepared or preserved sea cucumbers	2015	59,327	10,158
1605.61	Prepared or preserved sea cucumbers	2016	159,263	31,487
2501.00	Salt	2014	0	30

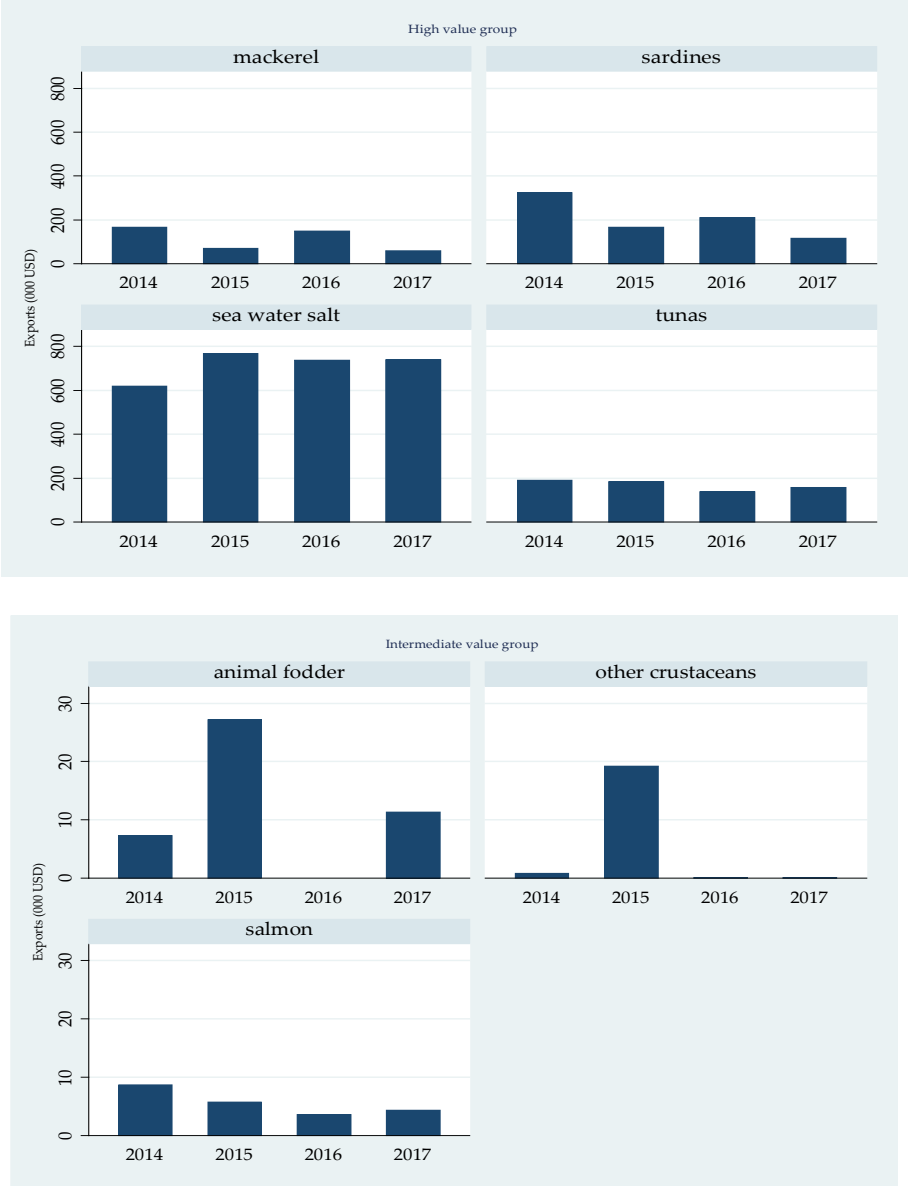
Source: Extracted data from UN Comtrade via WITS (export data), 5 November 2018.

Although supply capacity appears to be relatively limited at least in terms of exports, imports demand is relatively diversified as suggested by Figures 15 and Figure 16.

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

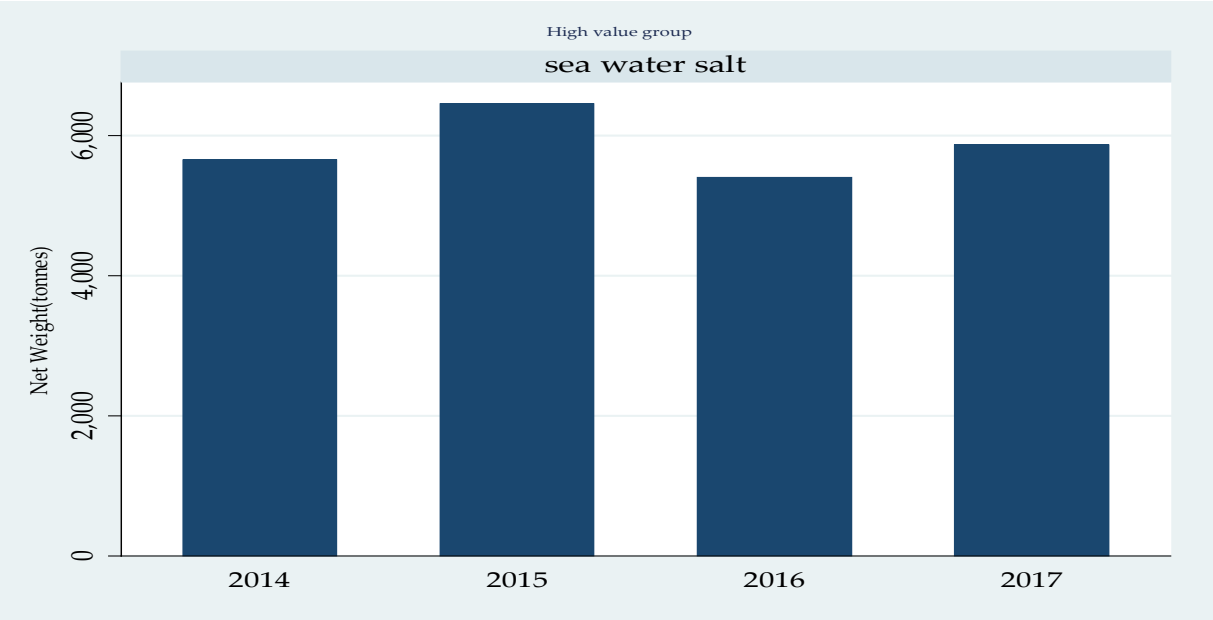
imports of canned products never exceeded $200,000, imports of sea water salt have been worth about $750,000 during the years 2015 to 2017. Imports of salmon preparations and animal fodder amounted to $5,000 and around $10,000 respectively in 2017. There is also a relatively large group of products whose import value has been on average not more than $4,000. The group referred to as "other" in the HS 2012 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 in demand with an average of 6,000 tons imported on average each year between 2014 and 2017. The imported quantity of tuna preparations has remained relatively stable around 200 tons per year. Imported quantities of mackerel have somewhat oscillated and were below 100 tons in 2017 while imports of sardines also fluctuated to around 120 tons in the same year. 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 two and three tons in 2017.

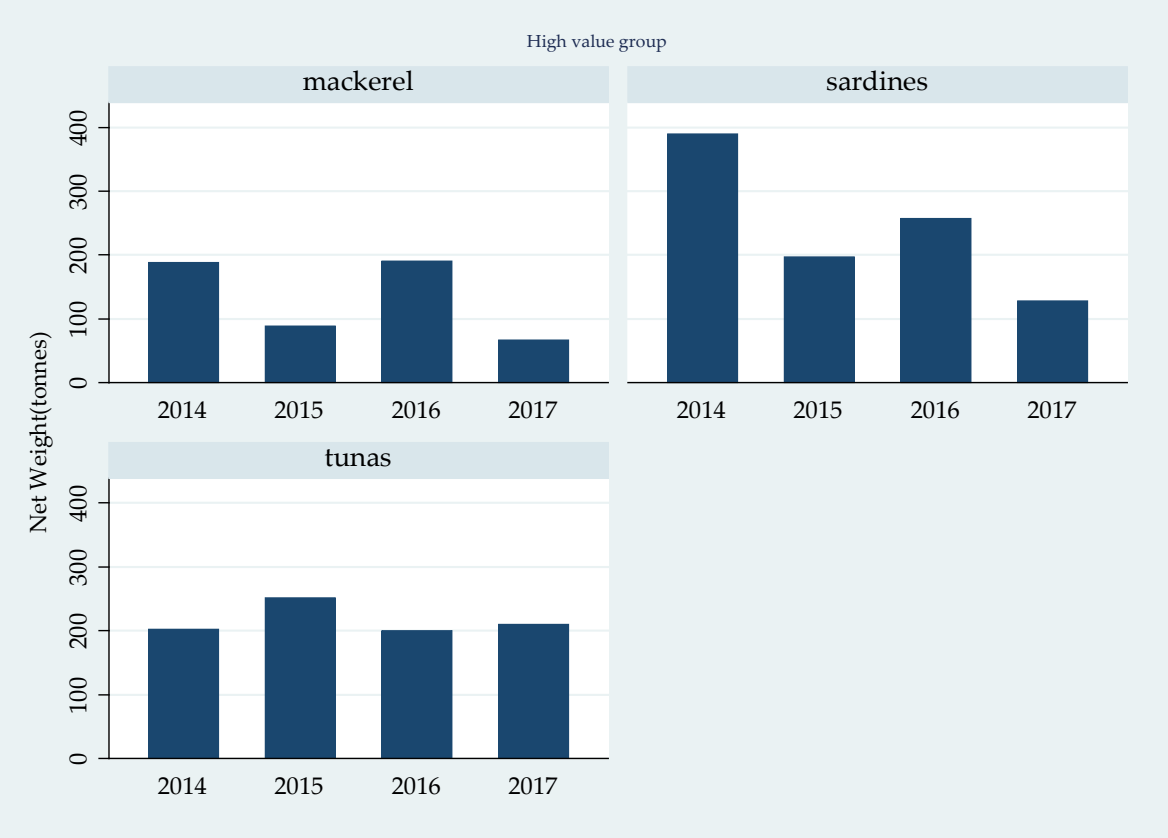
Figure 17: Imports of seafood (value), 2014-2017

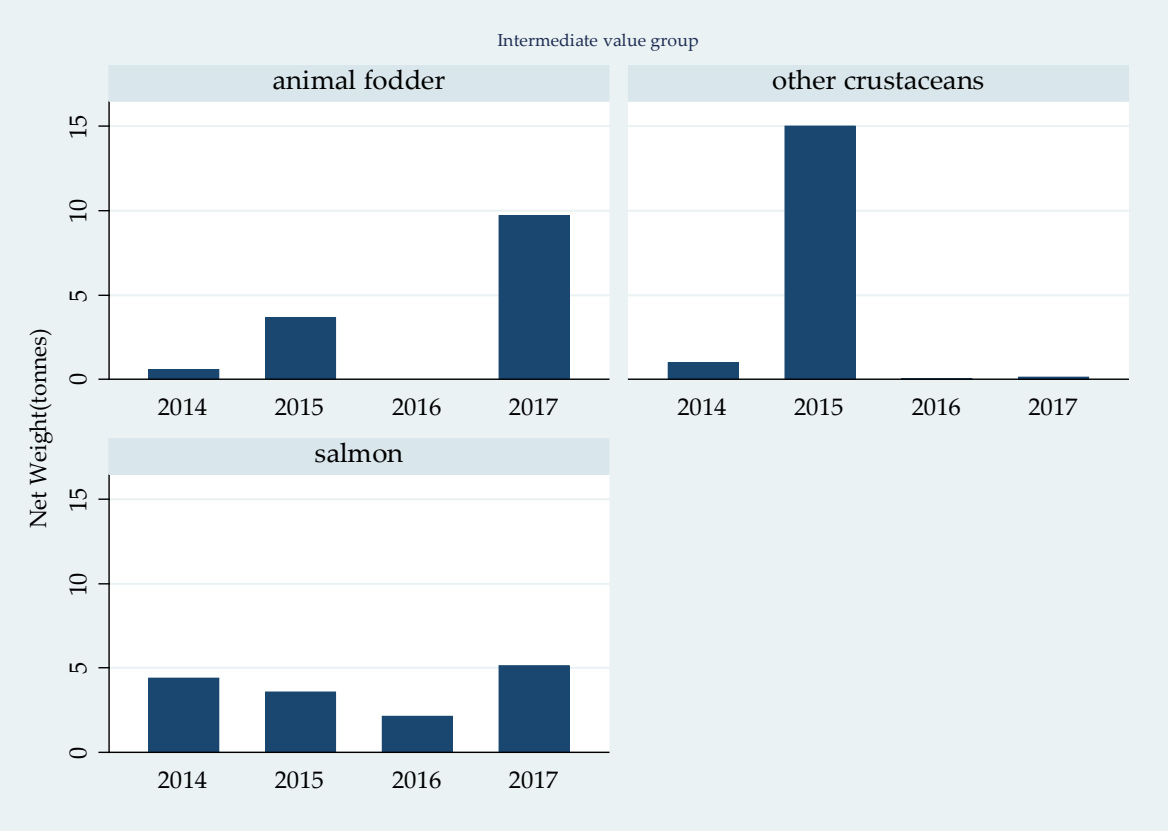


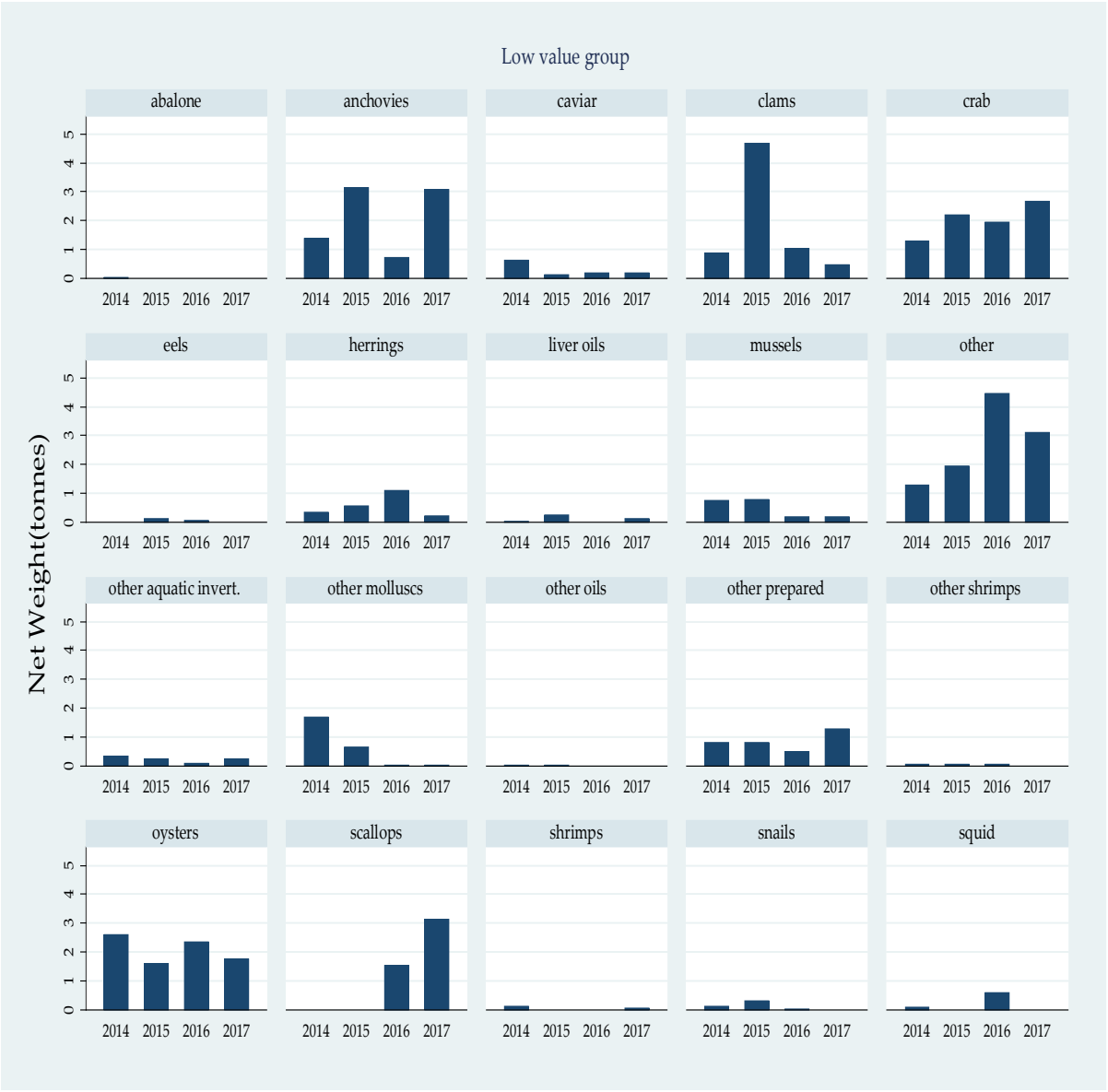
Source: Extracted data from UN Comtrade viaWITS, 5 November 2018.

Figure 18: Imports of seafood (quantity), 2014-2017




High value group
mackerel
sardines
tunas
Net Weight(tonnes)
0
100
200
300
400
2014
2015
2016
2017


Intermediate value group
animal fodder
other crustaceans
salmon
Net Weight(tonnes)
0
5
10
15
2014
2015
2016
2017



Source: Extracted data from UN Comtrade via WITS, 5 November 2018.

3.3.3 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 per cent and quantity by 1.9 per cent. Table 10 is an extract of 2017 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 despite the decrease in its total imports between 2014 and 2016. Two non-fish products are amongst the top five in 2017, namely animal fodder which ranks number two with an international market worth $4.24 billion and sea water salt which ranks number four with an international demand of $3.7 billion. 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, the potential for Belize shrimp products (not in airtight container) may represent a reasonable option if no important technology constraints exist. This would necessitate a further in-depth analysis.

Table 9: Top world imports (in value), 2017

Processed product	Product Code (HS-2012)	Imports Value ($ billions)	Net Weight (thousand tons)	Share Value (%)	Share Quantity (%)
Tuna	1604.14	6.36	1.13	19.8	2.6
Animal fodder	2301.20	4.24	3.02	13.2	6.8
Shrimps and prawns	1605.21	3.7	0.35	11.6	0.8
Sea water salt	2501.00	3.43	36.75	10.7	82.9
Other non-minced fish	1604.19	1.87	0.42	5.8	0.9
Other prepared fish	1604.20	1.82	0.50	5.7	1.1
Fats and oils	1504.20	1.58	0.70	4.9	1.6
Crab	1605.10	1.18	0.08	3.7	0.2
Other shrimps and prawn	1605.29	1.03	0.10	3.2	0.2
Sardines	1604.13	0.87	0.30	2.7	0.7

Source: Extracted data from UN Comtrade via WITS (imports data), 5 November 2018.

Table 10: Top world imports (in value): Most dynamic products, 2017

	Product code	Value growth	Quantity growth
Squids	1605.54	20.2	5.0
Octopus	1605.55	10.6	10.1
Lobster	1605.30	10.4	24.0
Eels	1604.17	10.2	11.6
Sea cucumbers	1605.61	8.7	20.7
Jellyfish	1605.63	4.5	-7.4
Oysters	1605.51	4.3	2.1
Caviar substitutes	1604.32	3.7	1.6
Clams	1605.56	3.1	7.4
Caviar	1604.31	0.7	-3.1

Source: Extracted data from UN Comtrade via WITS (imports data), 5 November 2018.

Table 11 reports the most dynamic products in 2017, i.e. 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. There is no overlap between the list of products in Table 10 and Table 11.

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. The value of squid has increased on average by more than 20 per cent a year, which is considerable. However, quantity growth of squid imports has remained relatively low in comparison. The highest growth rates in terms of quantity imported are found for lobsters and sea cucumber products. These facts lead to two considerations: (1) Is the Belizean lobster sector able to produce processed products and in that context (2) Is it 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, which have been a consequence of an extremely dynamic demand, especially from 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.

3.3.4 Discrepancies between exports and mirror imports data

Trade flows as reported in UN Comtrade are in principle 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 11: Mirror exports statistics, 2014-2017

	2014	2015	2016	2017
Exports value ($)	-	59,327	159,253	0
Mirror value ($)	**814,709**	**366,292**	**132,663**	**1,059**
Exports quantity (tons)	0.256	10.15	31.48	0
Mirror quantity (tons)	**127.4**	**27.3**	**8.06**	**0.203**
Number of destinations	1	2	1	0
Mirror number of destinations	**4**	**3**	**5**	**3**
Number of products	3	1	1	0
Mirror number of products	**3**	**9**	**6**	**2**

Source: Extracted data from UN Comtrade via WITS (export and import data), 5 November 2018.

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's competent authorities. They are clearly higher in all years reported in Table 12 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 $815,000. In 2015, importing countries declared a sum of about $366,000 as compared to about $60,000 declared by Belize's competent authorities. In 2016, the difference stayed in favour of declared exports which stood at about $160,000 against the slightly more than $130,000 thousand declared by importing partners. In 2017, some imports were declared while no exports were recorded due to the interruption of sea cucumbers extraction. Similar conclusions apply to exported quantities.

Table 12: Importing countries and number of products imported, 2014-2017

Importing Country	2014	2015	2016	2017
Spain	0	0	0	1
Guatemala	1	1	1	0
Japan	1	0	0	0
Mexico	1	0	0	0
Netherlands	0	7	2	1
Pakistan	0	0	0	1
Panama	0	0	2	0
Singapore	0	0	1	0

United States of America	1	2	1	0

Source: Extracted data from UN Comtrade via WITS (import data), 5 November 2018.

The number of destinations is also larger according to mirror data. It varies between three in 2017 and five in 2016. The United States of America and Hong Kong, China are the only two destinations found based on export declarations. The corresponding list when looking at mirror data shown in Table 13 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 14. Shrimp 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 the 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 13: Belizean exported products as declared by importing countries, 2014-2017

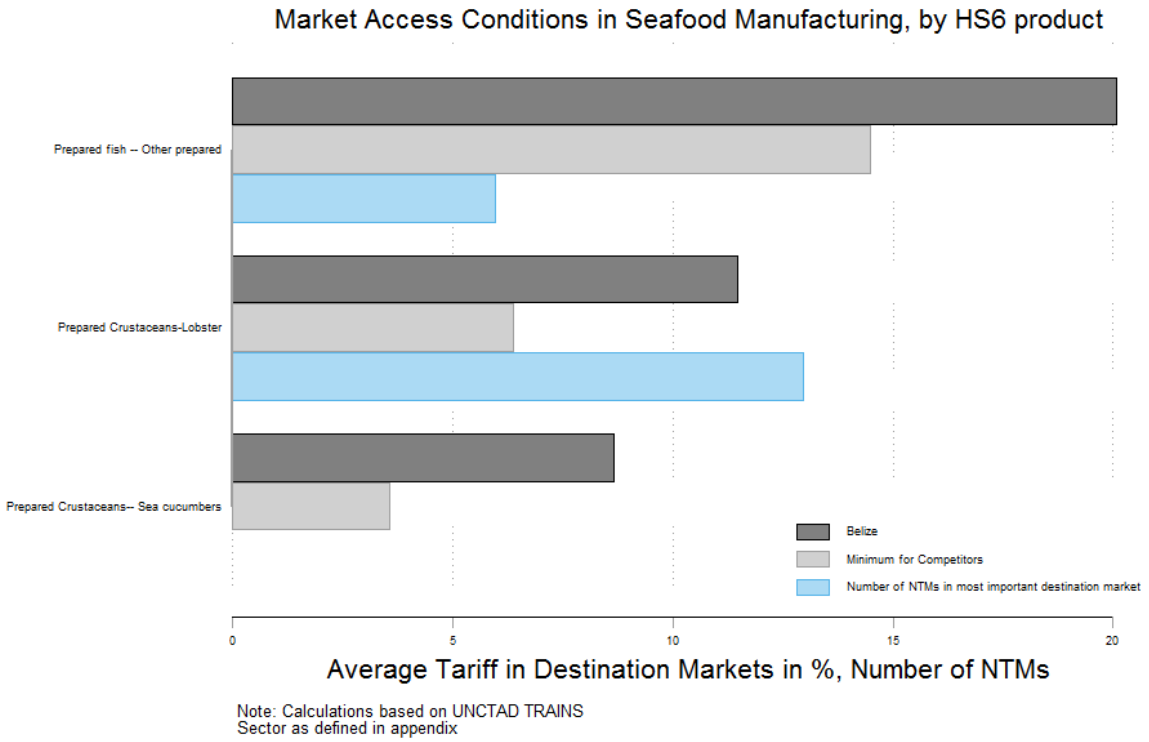
		2014	2015	2016	2017
Fats and oils	1504.20	0	1	0	0
Sardines	1604.13	0	1	0	0
Tunas	1604.14	0	1	0	1
Mackerel	1604.15	0	1	0	0
Other prepared or preserved fish	1604.20	0	0	1	0
Crab	1605.10	0	1	0	0
Shrimps and prawns (not in airtight container)	1605.21	1	1	1	1
Other shrimps and prawns	1605.29	0	1	1	0
Lobster	1605.30	0	0	1	0
Sea cucumbers	1605.61	0	1	1	0
Animal fodder	2301.20	1	0	0	0
Sea water salt	250100	1	1	1	0
Total		3	9	6	2

Source: Extracted data from UN Comtrade via WITS (import data), 5 November 2018.

3.3.5 Market Access Conditions

Figure 17 reports a set of measures of market access applied on international markets to products of interest to the Belizean fish sector.

Figure 19: Tariffs and NTMs for a selection of seafood products



Source: UNCTAD TRAINS, 2018[14]

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

3.4 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 to 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 aggregated information about employment on regular basis but little can be inferred for the seafood section of the fish sector.

Table 15 presents information published by the CRFM and is based on several sources. Figures are comparable to those presented in the Marine fisheries and Aquaculture sectors (see Sections 2 and 4 respectively).

Table 14: Employment in the fish sector, 2011-2013

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

Source: Caribbean Regional Fisheries Mechanism (CRFM) Statistics and Information Report, 2014.

The number of persons employed in fishery-dependent activities which are not either capture or aquaculture production has been estimated in 2011 to be about a thousand. No equivalent estimate exists for a later period at least in resources which are publicly available. This number, however, cannot 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.

Aquaculture Sector

4.1 Introduction

DEFINITION

Aquaculture or farming in water is the aquatic equivalent of agriculture or farming on land […] covers the farming of both animals (including crustaceans, finfish and molluscs) and plants (including seaweeds and freshwater macrophytes). Aquaculture occurs in both inland (freshwater) and coastal (brackishwater, sea water) areas.
Source: FAO, 1998.

Aquaculture in Belize formally began in 1982 with the development of pilot programmes led by the private sector. The production is now largely dominated by Pacific white shrimp (*Penaeus vannamei, also "whiteleg shrimp")* farming with both investment inside and markets outside of the country driven by strong continuous demand regardless of price variation. The whiteleg shrimp production accounted for 99.5 per cent of aquaculture production in 2014 and about 97 per cent in 2016 after the production collapsed due to Early Mortality Syndrome (EMS) disease. There are some investments in large scale tilapia (*Oreochromis niloticus*) and some family scale tilapia farming but product remains low (FAO, 2018a). In 2013, a tilapia hatchery centre was opened under a bilateral technical cooperation project, to support growth in this sector.

Belize aquaculture products have been exported within the region to the United States of America, Mexico, Guatemala, Trinidad and Tobago, Jamaica. Further away – the United Kingdom, Germany and Spain have also been important destination markets over the last few years. Belizean products even reached some Asian markets with dynamic domestic demand, namely Thailand and Viet Nam. Note that both countries are also dynamic exporters of similar aquaculture products.

Aquaculture production still represents a small share of total fish production. Its share in total production has varied between the 19 per cent in 2003 and one per cent in 2016. The last years are not necessarily representative of longer terms tendency due to EMS shrimp disease outbreak in 2015.

As to the external sector, aquaculture products represented more than three fourth of fish exports in 2014. In 2017, they still represented 25 per cent despite the extraordinary decrease in production. The reason is twofold: (1) prices of aquaculture products such as shrimps are relatively high compared to other more substitutable products and (2) species groups such as tuna or sardines or mackerels directly landed in foreign countries are not counted as exports from Belize.

Because of the EMS episode, imports of shrimps surged between 2014 and 2017. About 25 tons overall were imported from the region during these three years. This indicates that some domestic consumption exists and may be expanded further in the future. It is however impossible to identify whether consumption is demanded by local people or by tourists.

In global perspective, Belize's farmed shrimps' exports are still relatively modest and even more since EMS outbreak. Between 2010 and 2015, Belize exports share varied between 0.1 per cent and 0.2 per cent in value terms and between 0.1 and 0.7 in quantity terms. After 2015, Belize exports have not represented more than 0.03 per cent of world exports in value terms, and 0.06 per cent in quantity terms. Largest exporters of frozen or not frozen shrimps

are India, Ecuador, Indonesia, Thailand, Argentina, Viet Nam and China. They represent all together about 70 per cent of world exports in both value and quantity terms.

Figure 20: Aquaculture and capture production (thousand tons), 2000-2016

Source: Extracted data from FAO FishStat, 5 November 2018.

Apart from shrimp farming, Belize has also developed tilapia and seaweed farming with opportunities that exist to produce and export snapper, grouper, red drum, octopus and sea cucumber among other fisheries commodities.

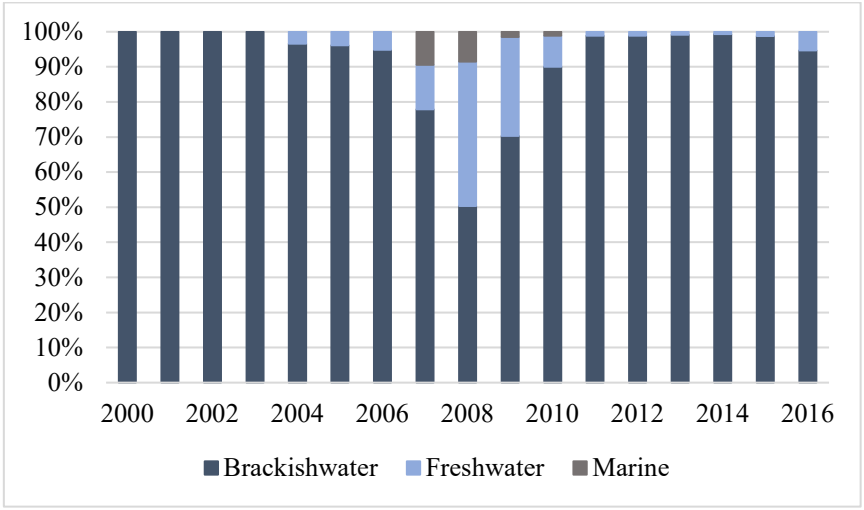
The environmental impact of aquaculture is important as it is an industry intensive in water, land, diverse food inputs, labour and ecosystem services. Belize has prepared a National Strategy and Action Plan for the development of freshwater aquaculture in Belize, with emphasis on tilapia farming. In social terms, aquaculture can be a significant job creator in rural Belize.

FAO is promoting the Caribbean Blue Revolution Initiative, which could be of potential benefit to Belize through country participation. The aim of the Initiative, which is to be funded by PetroCaribe, is to double fish production of Eastern Caribbean States over the next ten years through the intensification of aquaculture activities in the region.[15]

4.2 Production

The species currently farmed in Belize are the Pacific white shrimp (*Penaeus vannamei* also known as *Litopenaeus vanammei*) and the Nile Tilapia (*Oreochromis niloticus*). Pacific white shrimp remains by far the most lucrative aquaculture product (about 97 per cent of value generated by aquaculture in 2016) despite the collapse in its production in 2015. As depicted in Figure 19 most of the production remains in brackish water environment (briny water with more salinity than fresh water) due to the predominance of Pacific white shrimp production. However, freshwater is used for tilapia farming and freshwater shrimp farming although both remain significantly modest with respect to shrimp production.

Figure 21: Aquaculture production by culture environment, 2000-2016

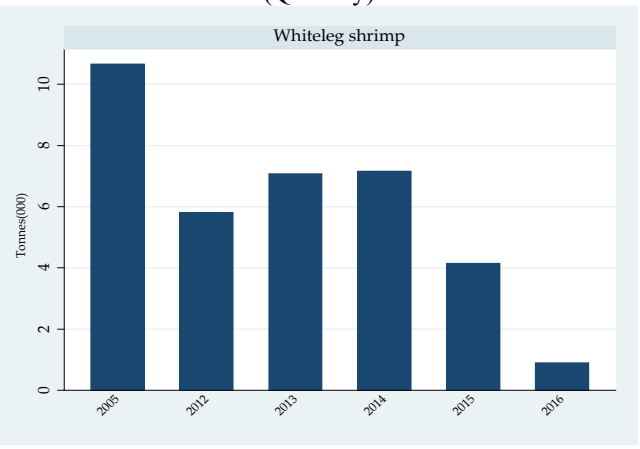


Source: Extracted data from FAO FishStat, 5 November 2018.

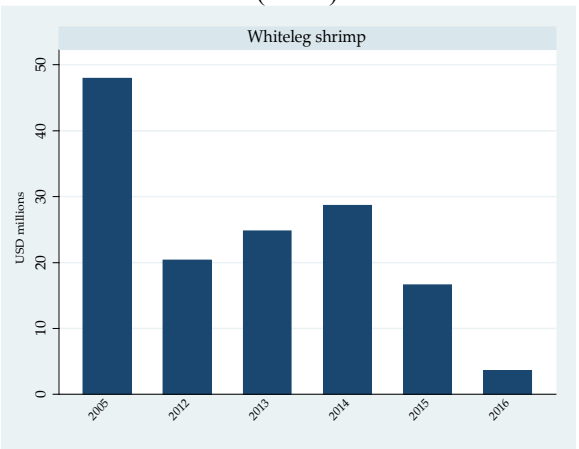
Historically, shrimp production has been about ten tons a year as shown in Figure 20. Due to the EMS outbreak, production has dropped dramatically in 2015 and 2016. Consequently, production value plunged from $28.6 million in 2014 to $3.6 million in 2016. It is now known that EMS is caused by a bacterial agent, which is transmitted orally, colonizes the shrimp gastrointestinal tract and produces a toxin that causes tissue destruction and dysfunction of the shrimp digestive organ known as the hepatopancreas. Actions to recover former pre-EMS production level have been taken but trade trends presented here do not show any strong recovery yet. The major shrimp farms are located along the coastal plain of Belize and stretches from just north of Dangriga in its most northerly extent, to a little south of the Port of Big Creek in its southerly extent. A remarkable achievement of the sector has been the certification process, based on socially responsible and environmentally sustainable farming practices by the Aquaculture Stewardship Council (ASC) of the members of Belize's Shrimp Growers Association production, which represents about 90 per cent of the country's shrimp production.[16] Belize has thus become the first country in the world to be awarded a certification of this type for such a large portion of its national production.

Figure 22: White shrimp aquaculture production, 2005 and 2012-2016

(Quantity)



(Value)

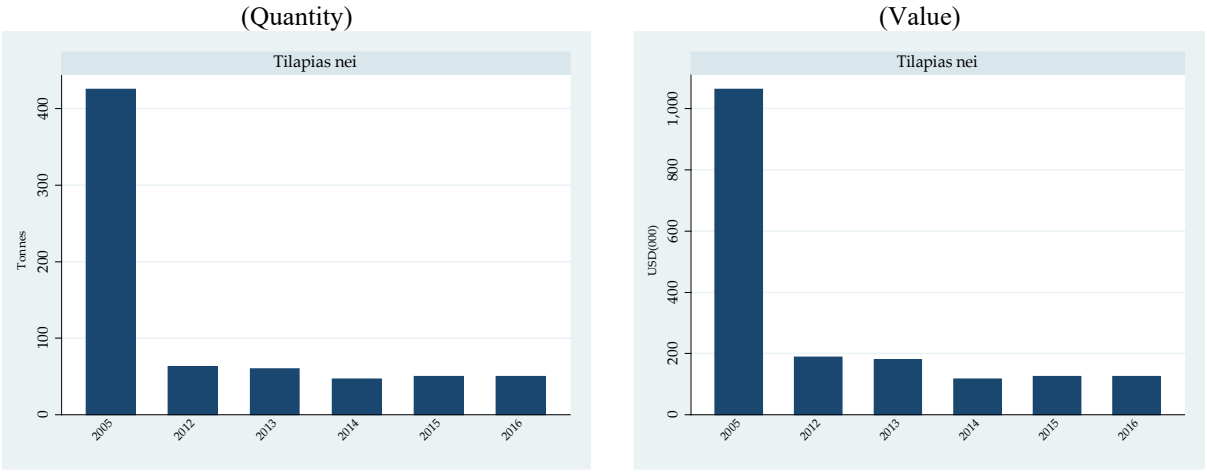


Source: FAO FishStat, 2018.

As shown in Figure 21, tilapia production back in 2005 was above 400 tons but fell drastically around 2010. Production has remained somewhat constant since 2014 at about 50 tons and is worth about $125,000.

Cobia (*Rachycentron canadum*) has also been a Belizean aquaculture product from 2007 to 2010. Its production picked at 384 tons in 2008 for a value of about $2.3 million. Further back in time, other species have been farmed in Belize such as ornamental African Rift Lake Cichlids (e.g. *Haplochromis and Pseudochromis*).

Figure 23: Tilapia aquaculture production, 2005 and 2012-2016

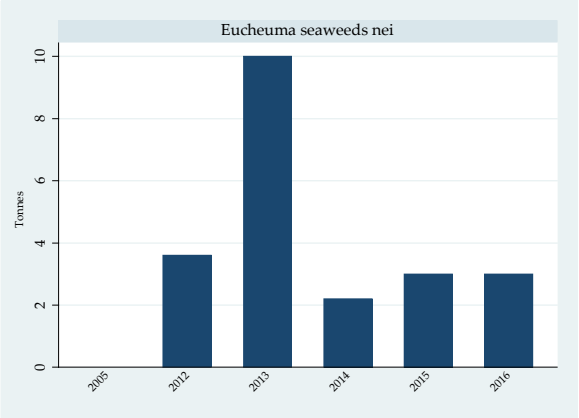


Source: FAO FishStat, 2018.
Note: "nei" = Not elsewhere included.

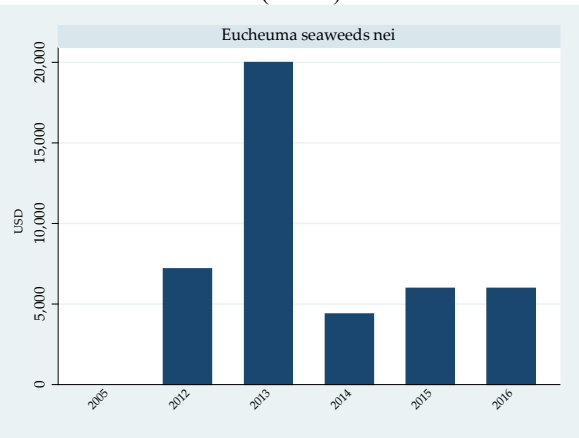
Besides fish species some aquatic plants have also been farmed recently. The production of red seaweeds started in 2012. Belize's coastal waters are a perfect ecosystem for such a farm: the water's depth and temperature provide enough nutrients to sustain repeated crops. Squid, lobster, octopus, and fish breed and feed there. Belize has the second-longest reef in the world, and with reefs under pressure from climate change and fishing, this is one way to promote biodiversity. As shown in Figure 22 production reached almost ten tons in 2013 to stabilize at about three tons in the following years. Production value remains quite modest at about $6,000. Growth potential should not be underestimated especially in a context of increasing demographic pressure on traditional crops production around the word. Moreover, no fresh water is necessary in the farming of seaweeds.

Figure 24: Red seaweed aquaculture production, 2005 and 2012-2016

(Quantity)



(Value)



Source: FAO FishStat, 2018.
Note: "nei" = Not elsewhere included.

Harvesting of sea cucumber took place for two decades or so in Belizean waters. The fishery included two main species, *Holothuria mexicana* and *Isostichopus badionotus*. In 2009, Belizean sea cucumber started being sold on international markets. However, due to overfishing, the entire fishery was closed in 2017. However, sea cucumber remains highly demanded worldwide with popularity in Asia stemming from (i) the dried product's unique components that serve different applications in food and medicine and (ii) existence of opportunities based on previous trade relationships. Every year, billions of larvae and millions of juveniles are successfully grown in aquaculture facilities, most of them being located in Asia and new initiatives are also booming in other parts of the world. The core species that have so far been successfully cultivated are the *Apostichopus japonicus*, the *Holothuria scabra* and the *Isostichopus fuscus*.[17] Considering such opportunities and owing to Belize's effort to sustainably manage utilization of sea cucumbers, it may not be too long when its farming in Belize may start thriving.

As argued by Beltraide, the Belize Trade and Investment Development Service, some additional species could be farmed in Belize. These include native stocks such as the River Lobster (*Macrobrachium spp.*), Blue-eye Catfish (*Ictalurus furcatus*), Common Snook (*Centropomus undecimalis*), Mutton Snapper (*Lutjanus analis*), Nassau Grouper (*Epinephelus striatus*), Blue Crab (*Callinectes sapidus*), or some exotic species such as the Australian Freshwater Lobster (*Cherax quadricarinatus*), Channel Catfish (*Ictalurus punctatus*), Flounder (*Paralichthyidae spp.*), American Oyster (Crassostrea virginica), Malaysian Prawn *(Macrobrachium rosembergii*), Florida Pompano (*Trachinotus carolinus*). A closer look at their respective demand on international markets could be relevant in a more detailed analysis.

4.3 Trade

4.3.1 Overview

With shrimp production representing more than 97 per cent of total aquaculture production, tendencies reported in Table 16 are everything but surprising. Exports collapsed between 2014 and 2016 due to the EMS in shrimp production and its repercussion on certification.

Optimistic projections pointed to $20 million of export earnings by the end of 2017. Less than a fifth of that amount was eventually cashed in by the external sector. As a consequence, aquaculture exports were slightly more than two per cent of total exports in 2017 against almost 15 per cent three years before. Consequently, the number of products exported and markets reached have also declined due to the strong contraction of the shrimp sector and of the suspension of certification for some farms.

Table 15: Exports, number of products, number of destinations, 2014-2017

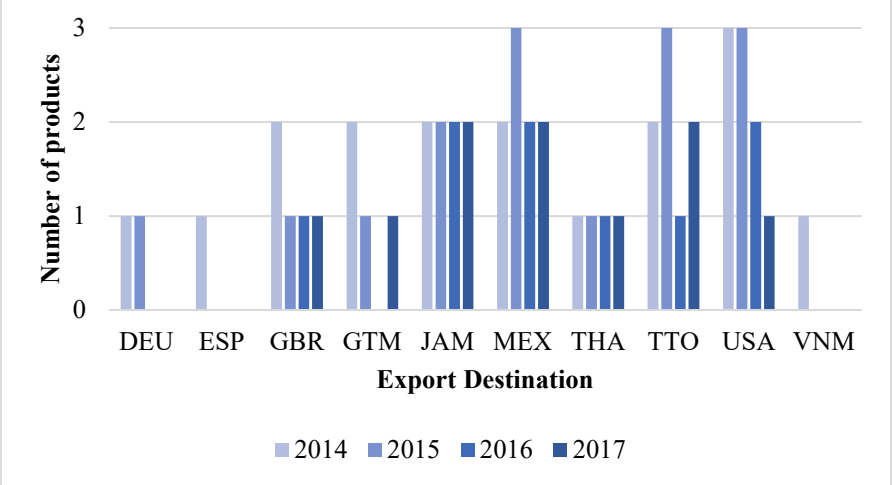
	2014	2015	2016	2017
Exports value ($ million)	44.1	30.2	6.4	4.6
Exports quantity (ton)	14,350.8	10,188.3	1,624.1	1,286.8
Number of destinations	10	8	6	7
Number of products	3	6	4	3
Total exports ($ million)	307	268	201	223
Share in total %	14.4	11.3	3.2	2.1

Source: Extracted data from UN Comtrade via WITS (exports data), 5 November 2018.

Note: Relevant HS codes for Aquaculture products are around fresh or frozen shrimps and tilapia as well as fillets as shown in Appendix 1.

Figure 6 reports export destinations for aquaculture products between 2014 and 2017. We clearly observe some discontinuity in either 2015 or 2016. The same is true for the number of products reaching the different markets.

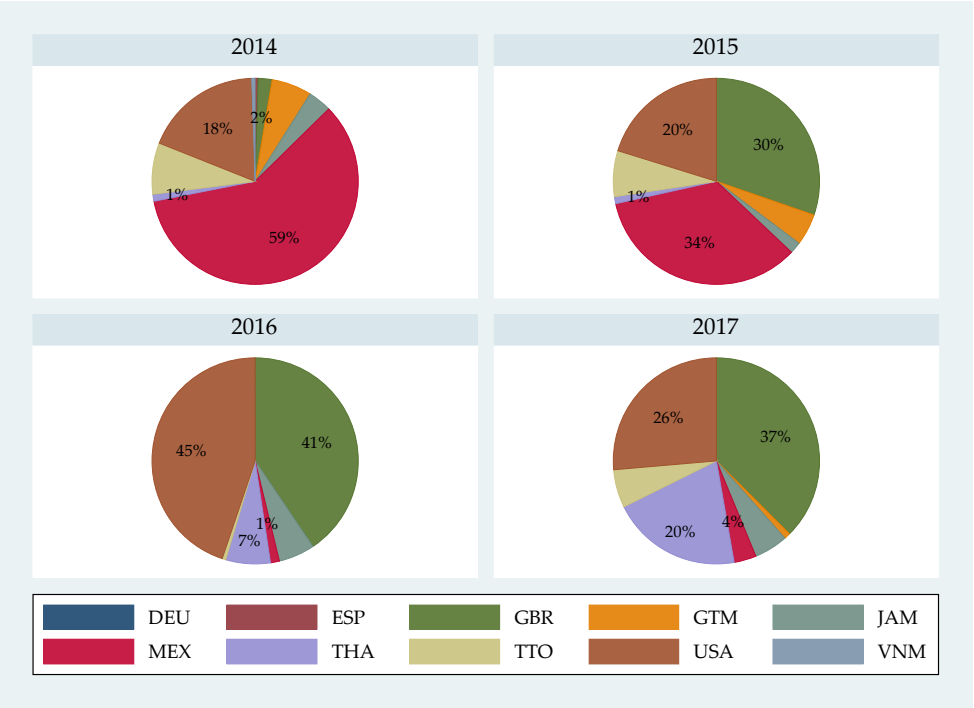
Figure 25: Number of products per destination, 2014-2017



Source: Extracted data from UN Comtrade via WITS (exports data), 5 November 2018.
Note 1: Relevant details of HS codes for Aquaculture products (fresh or frozen shrimps and tilapia as well as fillets) are in Appendix 1.
Note 2: Full official UN country names are provided in Appendix 4.

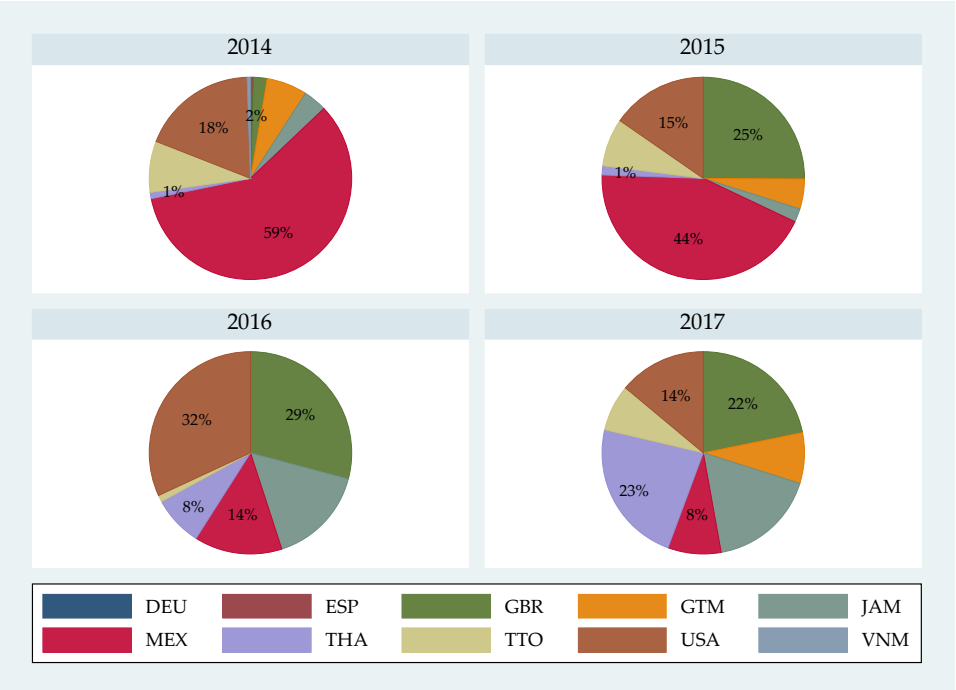
Figure 24 and Figure 25 point to a drastic re-composition of Belize export destinations basket. Major destinations in 2017 in value terms representing more than 30 per cent of all aquaculture exports are the United Kingdom, Thailand and the United States of America. In 2014, Mexico held the largest share with about 60 per cent. In quantity terms, Thailand is the largest export market in 2017 with a share equal to 23 per cent, while Mexico occupied that position in 2014 with again about 60 per cent of all Belize export quantity. Jamaica appears as the third important destination in terms of quantity with more than 20 per cent but counting for less than seven per cent in terms of value.

Figure 26: Export value (share) by destination, 2014-2017



Source: Extracted data from UN Comtrade via WITS (exports data), 5 November 2018.
Note 1: Full official UN country names are provided in Appendix 4.

Figure 27: Export quantity (share) by destination, 2014-2017

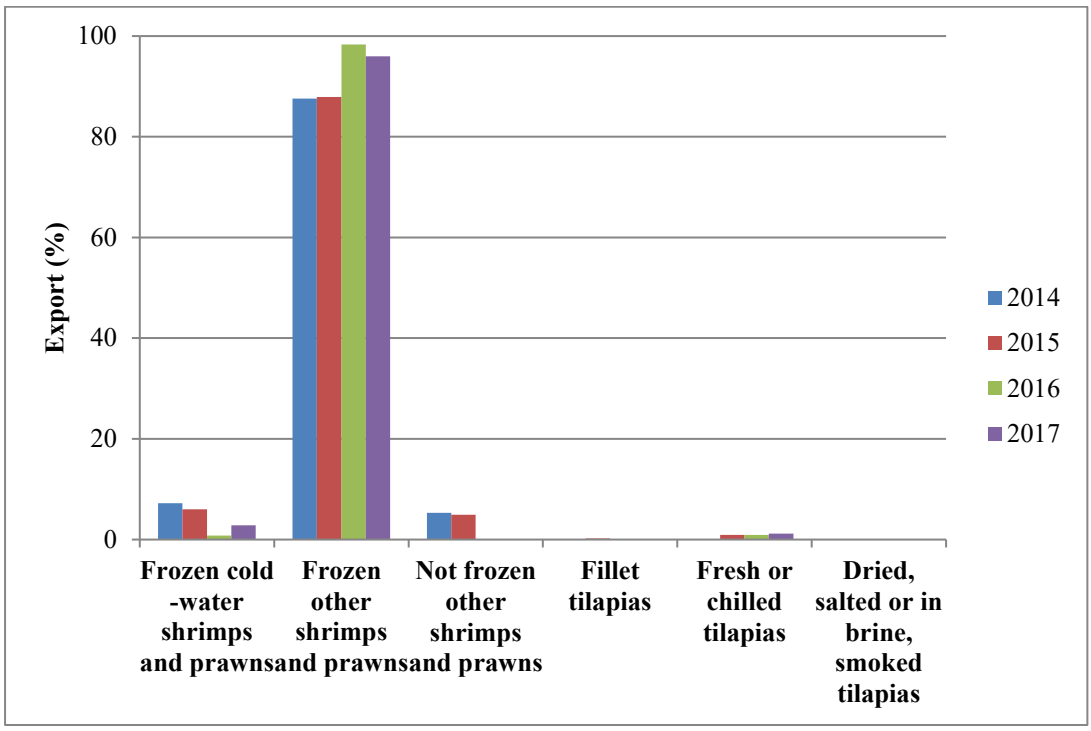


Source: Extracted data from UN Comtrade via WITS (exports data), 5 November 2018.
Note 1: Full official UN country names are provided in Appendix 4.

4.3.2 Supply capacities

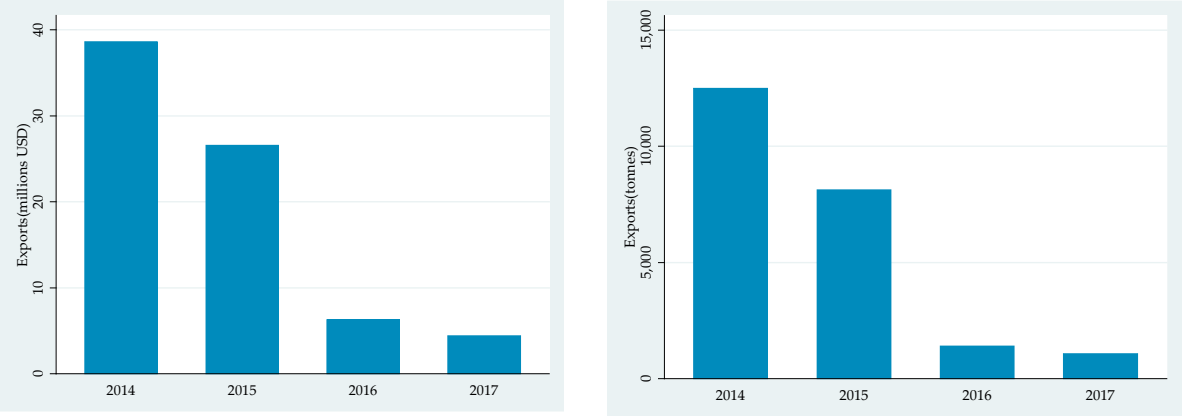
Figure 26 shows the composition of exports of aquaculture products as defined in the 2012 version of the HS classification. The predominance of shrimp products is obvious. However, it is important to highlight the following: (1) Tilapia was exported as fresh or chilled since 2015 while tilapias fillets have been exported in 2015 and 2016 but not in 2017; (2) Pacific white shrimps were exported only as frozen after 2015 and (3) cold-water shrimps and prawns are declared to be exported while they do not necessarily appear among the species found in production data.

Figure 28: Exported aquaculture products, 2014-2017



Source: Extracted data from UN Comtrade via WITS (exports data), 5 November 2018.

Figure 29: Frozen cold water shrimp exports (value and quantity), 2014-2017

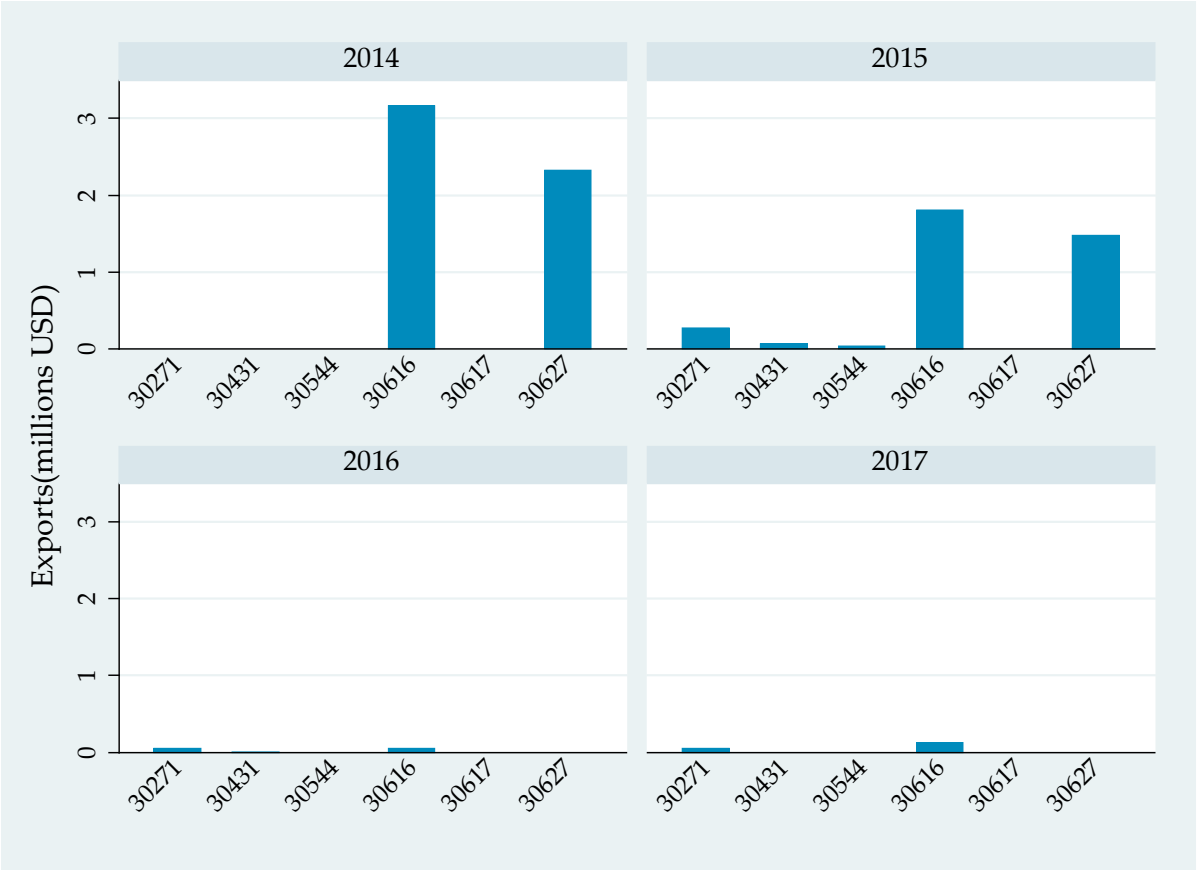


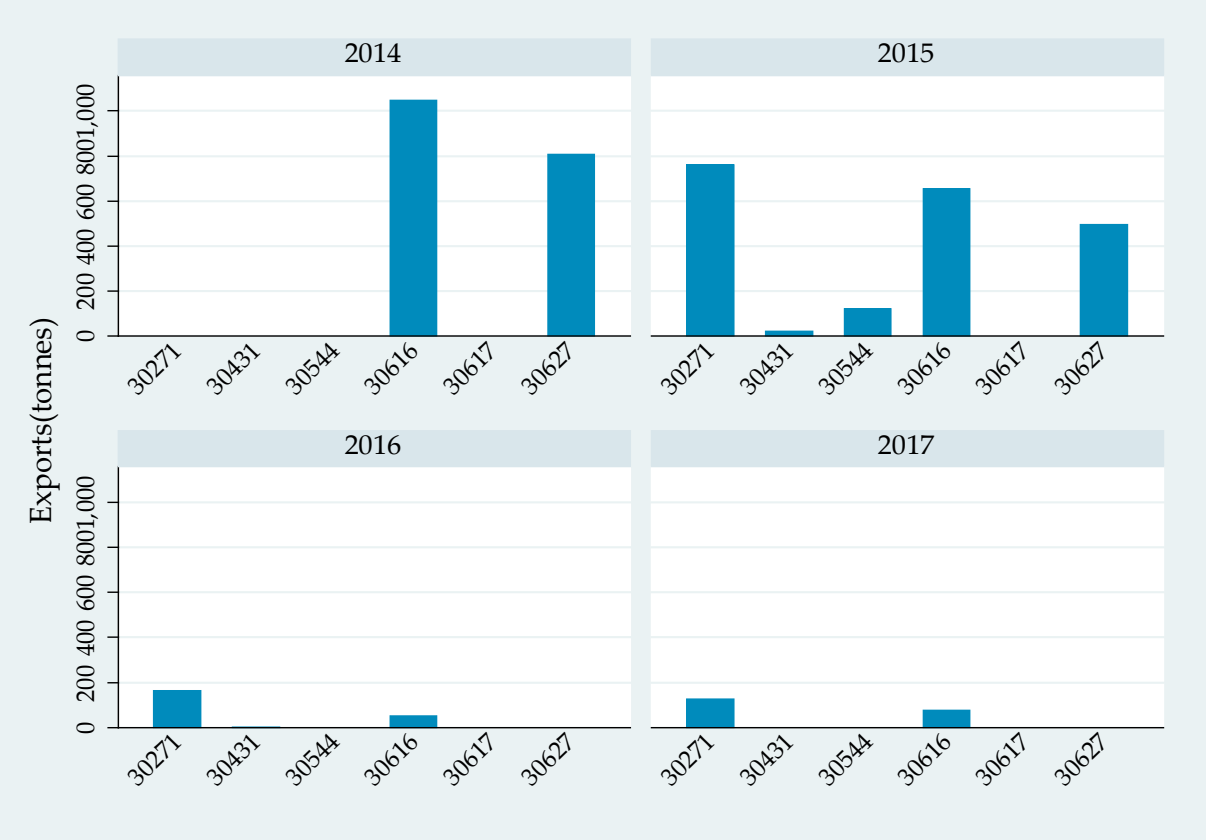
Source: Extracted data from UN COMTRADE via WITS (exports data), 5 November 2018.

Figure 27 is a precise reflection of what occurs with production of shrimps. With the outbreak of EMS in 2015, exports collapsed in the following two years and the tendency does not appear to be fully reversed yet. This represents a major loss in exports revenues and clearly calls for not only long-lasting recovery strategy but also for the definition of a sustainable

diversification plan of actions. This is corroborated by Figure 28 which reports the evolution of exports in aquaculture products other than frozen white shrimps. Only tilapia products have been exported besides shrimp products. Figure 28 also shows a non-insignificant decrease in exports both in quantity and in value terms which reflects an inflection in domestic production. The possible sources of such trend are not necessarily clearly identified. Disease outbreak could be the main reason but there could be other factors to be analysed as tilapia was not affected by the EMS. Increased internal demand or fall in international demand or prices could have also been factors in this decline. Revenue from tilapia exports remains small and it may be beneficial to pay specific attention to this sector to identify sustainable expansion strategies going forward.

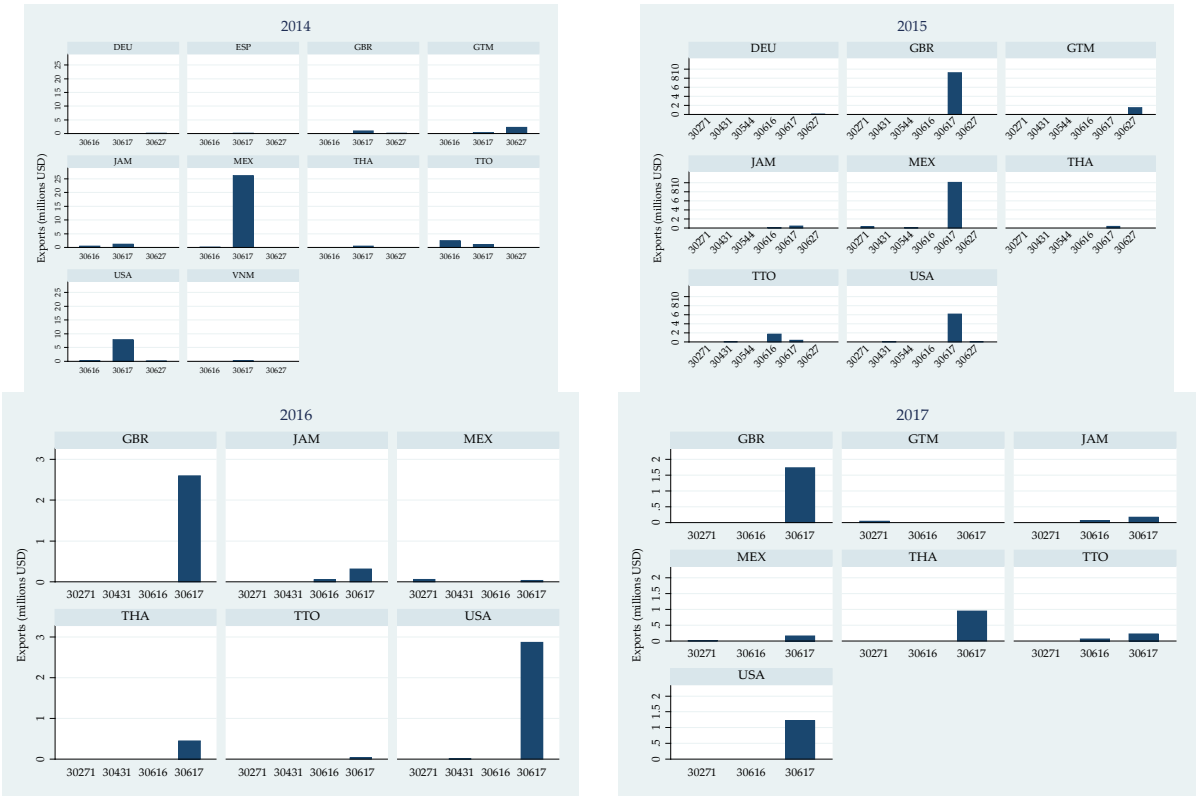
Figure 30: Other aquaculture products exports (value and quantity), 2014-2017





Source: Extracted data from UN Comtrade via WITS (exports data), 5 November 2018.

Figure 31: Exports per product-destination ($ million), 2014-2017



Source: Extracted data from UN Comtrade via WITS (exports data), 5 November 2018.

As indicated in Figure 29, top markets for crustaceans' products from Belize have been Mexico, the United States and Guatemala followed by some CARICOM Members such as Jamaica. Closeness, demand, culture, business relations and historical relations with these countries may be the main reason for these markets to become the most relevant ones for Belize. With the outbreak of the EMS in 2015, exports to Mexico collapsed almost instantaneously. Exports to the United Kingdom and Thailand somewhat remained resilient as well as those to the USA although to a lesser extent.

4.3.3 Demand

Figure 30 shows the average of the annual growth rates of imports in Belize historical destination markets for its aquaculture products. The negative values found for shrimp products are clearly associated with the collapse of the production that occurred in 2015. An interesting feature is on one side, the strong increase in demand for fresh or chilled tilapia (0302.71) and on the other side, the fall in demand for tilapia fillets (0304.31) and in dried or salted tilapia (0305.44).

Figure 32: Average import growth in Belize's destination markets, 2014-2017

Source: Extracted data from UN Comtrade via WITS (imports data), 5 November 2018.
Note: 0302.71: Tilapias; 0304.31: Fresh, chilled or frozen tilapias; 0305.44: Smoked tilapias; 0306.16: Frozen cold-water shrimps and prawns; 0306.17: Frozen other shrimps and prawns ; 0306.27: Not frozen other shrimps and frozen.

Figure 31 reports average annual growth rates of demand from international markets. A general finding is the strong positive growth obtained for all products produced in aquaculture in Belize. Tilapia products (0302.71 to 0305.44) appear to be the most dynamic

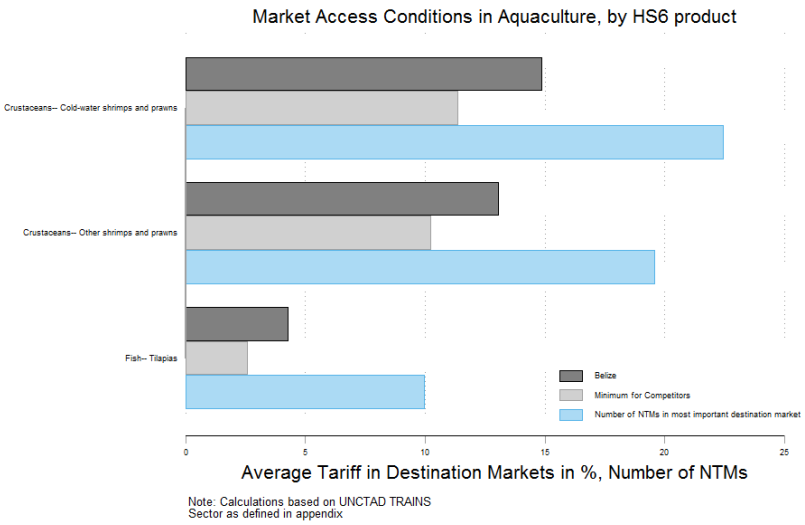
with growth rates of both value and quantity having been always above 15 per cent and even reaching 50 per cent for the quantity of frozen tilapia (0303.23) imported over the period between 2014 and 2017. Growth rate of the shrimp markets have been less spectacular but remain at levels that reflect a steadily increasing demand around the world. Certification may even boost it further, but no clear evidence has been identified so far.

Figure 33: Average import growth in world markets, 2014-2017

Source: Extracted data from UN Comtrade via WITS (imports data), 5 November 2018.
Note: 0302.71: Fresh or chilled tilapias; 0303.23: Frozen tilapias; 0304.31: Fresh, chilled or frozen tilapia fillets; 0304.93: Other frozen tilapias; 0305.44: Smoked tilapias; 0306.16: Frozen cold-water shrimps and prawns; 0306.17: Frozen other shrimps and prawns; 0306.26: Not frozen shrimps and prawns; 0306.27: Not frozen other shrimps and prawns.

4.3.4 Market access conditions

Figure 34: Tariffs and NTMs for Belizean aquaculture products



Besides supply side capacity and competitiveness, the level of market access (tariff and NTMs) is another important determinant for the export success for Belize aquaculture products. Figure 32 shows that market destinations of Belize aquaculture products tend to have higher average tariffs being applied to them (dark grey bars) than the ones applied by some of its competitors (light grey bars) in Belize destination markets. There is scope for Belize to explore further tariff concessions or preferential market access in its main market destinations thought bilateral, regional multilateral trade negotiations. Such an effort could put Belize in an equal or better position in relation to some of its competitors. The same could apply to NTMs, which show to be significant in number in the case of crustaceans exports.

4.3.5 Employment

About 11 active shrimp farms generate about 800-1,200 jobs (depending on the time of the year), predominantly from the southern Belize communities. Drops in employment in 2016 as shown in Table 17 have occurred parallel with the production and exports reductions consequential to the EMS outbreak in 2015-2016 period. Data recently published by the SIB reports 1,543 jobs in aquaculture (one per cent of total employment) as of April 2018. This may indicate some strong recovery of the sector or maybe only some seasonal phenomenon that could translate into a much smaller figure if expressed on an annual basis[18]. Two thirds of jobs are located in the Belize City district (Table 18). Accordingly, female employment represented less than 2.5 per cent of total employment in the sector. This again may reflect some seasonal trend.

The availability of skilled labour has not so far represented a major constraint in the shrimp and aquaculture industries. About 60% of workers in the sector are usually lower-skilled employees, and there is available supply of such individuals who live in rural communities close to the coast.

Table 16: Social indicators for the aquaculture sector

	2014	2015	2016
Employment	1, 189	1, 185	772
Total wages (BZ$)	6, 593, 804	8, 106, 042	4, 152, 616

Source: Belize Ministry of Investment, Trade and Commerce as cited in Daly, J. and Fernandez-Stark, K. (2018).
Note: $/BZ$: 2.013/1 as at 5 November 2018. (https://www.xe.com)

Table 17: Employment in aquaculture reported in April 2018

	Sex			**District**					
	Male	Female	Total	Corozal	Orange Walk	Belize City	Cayo	Stann Creek	Toledo
Aquaculture	1, 543	38	1, 581	108	25	1, 058	0	178	212
Share in total	96, 442	59, 508	155, 950	20, 545	19, 677	50, 816	35, 638	16, 298	12, 976

Source: SIB Labour Force Statistics, 2018.

Information about salaries and more generally, earnings in the sector remain scarce. Table 17 reports some yearly earnings not necessarily annualized. The reason may be a strong seasonality in employment. Reported total earnings would amount to about $3,500 in 2014 to $2,750 in 2015 and 2,700 in 2016. Considering that the minimum salary in Belize is about

$700 per month previous earnings appear to be relatively low and clearly need some adjustment to reflect seasonality properly as already mentioned.

4.3.6 Environment

Belize is the first developing country in the world to achieve Aquaculture Stewardship Council (ASC) certification, with 90 per cent of its shrimp farms output fully certified (Belize NBSAP, 2016-2020). In 2015, five shrimp farms in Belize attained ASC shrimp certification. This process was facilitated by the World Wildlife Fund (WWF) through the engagement of Compete Caribbean and Belize Shrimp Growers Association (BSGA). With ASC certification, shrimp farms in Belize gain a competitive advantage in high-quality international markets since it demonstrates that shrimps were produced with minimal impact to the environment and communities where farms are located. Opportunities available from ASC shrimp certification include reduction of adverse environmental impacts through wetland and mangrove preservation, improved water and management, responsible use of feed, disease control and addressing biodiversity issues, supporting improvements to coastal zone and fisheries management and consideration of future food security, improved social conditions and production methods and technology. With this certification, Belizean shrimp farms will set the standards for best practices in shrimp production and processing for this region, enhancing the sustainability of the industry (UNCTAD-DOALOS, 2018). Nevertheless, it still is a fragile industry, as shrimp farms have suffered considerable loss due to the EMS outbreak leading to all major farms in the country being drained and dried, and restocked in 2016 (Belize National Biodiversity Strategy and Action Plan, 2016 -2020).

Maritime and Coastal Tourism Sector

5.1 Introduction

Tourism is the largest of all ocean economic sectors, generating more than $1.6 trillion globally in 2017. International tourist arrivals grew by seven per cent reaching a record of 1,323 million arrivals in 2017. It is expected that international arrivals will reach 1.8 trillion by 2030 (UNWTO, 2017), outperforming all other services sectors with perhaps the exception of financial services.

Tourism is also the sector that contributes the most to the GDP of Small Island Developing States (SIDS), but also of coastal developing countries. These countries enjoy a special geographical situation, outstanding natural endowments and cultural heritage richness that make them unique for visitors. At the same time, they confront several challenges and vulnerabilities including remoteness, limited air connectivity and economic diversification, small internal markets, as well as adverse, perhaps recurrent climate events.

Management of ecosystems services that support tourism activities is essential for their sustainability due to their high levels of vulnerability and interconnectivity, especially in the marine realm. Belize has outstanding natural coastal, reefs and marine endowment and a relatively diversified tourism offer, with coastal, marine, ecotourism, adventure and cultural heritage tourism being the most developed segments. Belize is also quite dependent on tourism as the sector represents about 20-25 per cent of its GDP depending on time of the year.

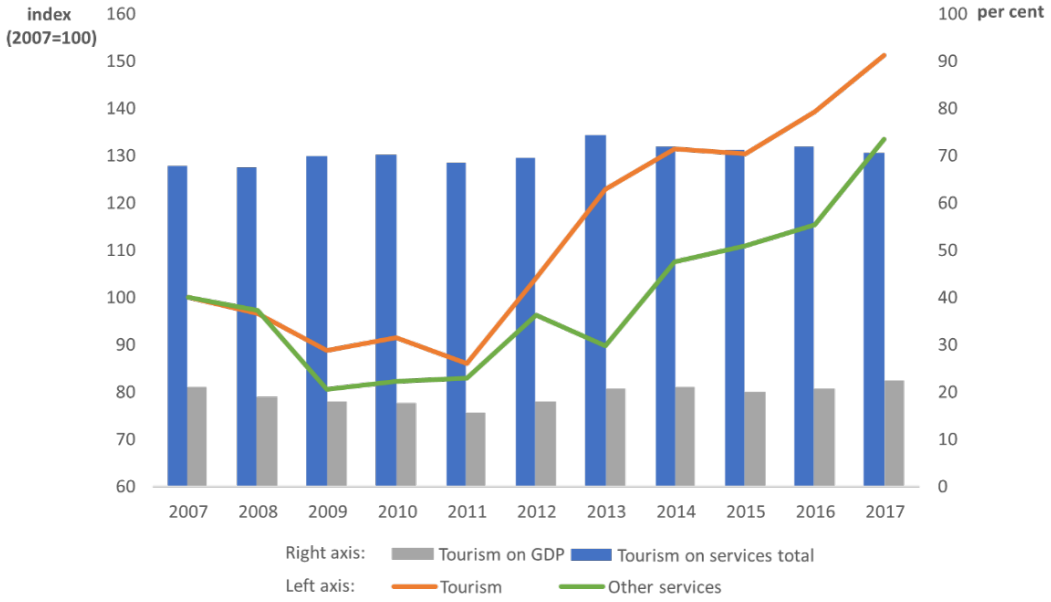
5.2 Sector overview

5.2.1 Contribution to GDP

Tourism is a fast-growing sector in Belize. In 2017, the value of exports of non-business travel services, other than health and education reached an all-time-high of $409 million, up by 50 per cent from 2007. In this period, the sale of tourism services to non-residents had grown at an annual average rate of four per cent outperforming other services exports (three per cent (Figure 33).

While the weight of tourism on services exports has only moderately grown in the last decade (from 68 per cent in 2007 to 70 per cent in 2017), its relative share of GDP recorded a u-shaped trend. It has been shrinking in connection with the global economic downturn, from 21 per cent in 2007 to 16 per cent in 2011, and has increased again thereof. In 2017, it accounted for 22 per cent of the country's GDP.[19]

Figure 35: Contribution of tourism services exports to GDP, 2007-2017



Source: UNCTAD analysis on data from UNCTADStat - Balance of Payments (BPM6) Statistics and World Bank National Accounts. Data downloaded and accessed in October 2018.
Note: BPM6 3-digit item SDB3, "Travel – Personal travel – Other Personal Travel" is used as proxy of tourism services. The corresponding nomenclature in UNCTAD/WTO BPM statistics is: "Travel, Personal, Other (Other than health and education)".

Due to the important linkages of tourism with the rest of the economy, the overall impact is believed to be much bigger. According to a recent study by the World Travel and Tourism Council (WTTC), the overall economic benefits of tourism in Belize are worth up to $700 billion, corresponding to roughly 40 per cent of its GDP. Most of them are linked to indirect and induced effects of tourism activities (WTTC, 2017).

Official statistics do not allow quantifying the incidence of marine and coastal tourism. Yet, survey statistics point to a strong concentration of tourism activities in few, perhaps popular seaside destinations. Of the 13,446 bed places available in the country in 2017, half were located in Belize's top three beach spots (Ambergris Caye, Caye Caulker and Placencia). These destinations were visited by 42 per cent, 35 per cent and 14 per cent of visitors respectively and are home to 35 per cent of Belize's tour operators.[20]

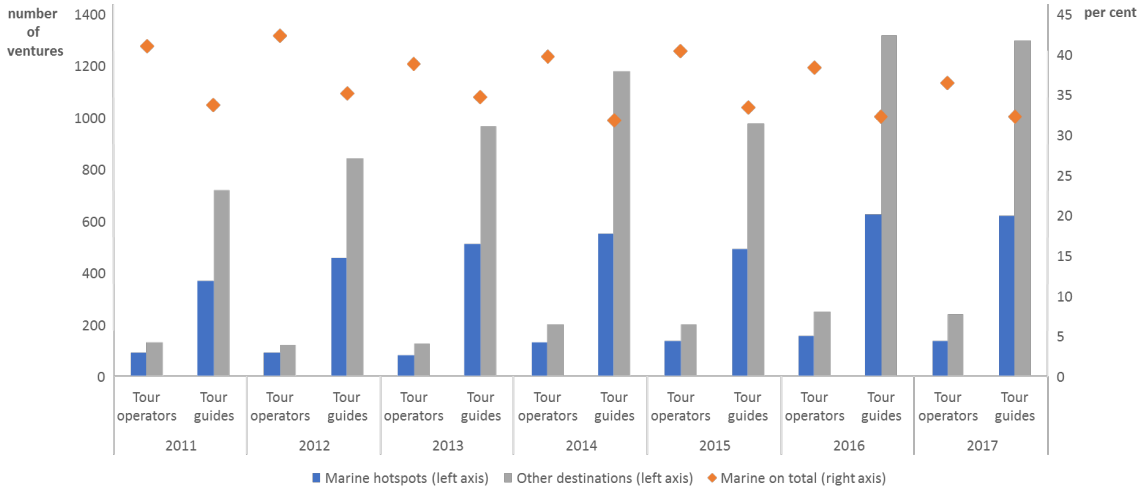
5.2.2 Enterprise

The recent growth of the tourism sector has translated into a growing number of ventures dealing with the provision of tourism services. One prominent type of business is tour operators. In 2017, Belize registered 381 active tour operators, almost twice as many as were in business in 2011 (n=224). Interestingly but not surprisingly, about 40 per cent of them are based in key maritime hotspots (Figure 34). Notwithstanding, the presence of operators in popular maritime hotspots has been diminishing (from 41 per cent in 2011 to 36 per cent in 2017), suggesting a shift of focus on the tourism offer towards new destinations, such as rainforest and cultural heritage sites, or both.

Tour guides have followed a similar trend, having grown at an annual average rate of ten per cent over the same period. Compared to operators, however, maritime guides have kept increasing similarly to non-maritime ones (Compound Annual Growth Rate, CAGR= nine

per cent and ten per cent respectively). In 2017, 32 per cent of guides operated in key marine hotspots.

Figure 34: Tour operators and guides: maritime hotspots vs. other destinations, 2011-2017



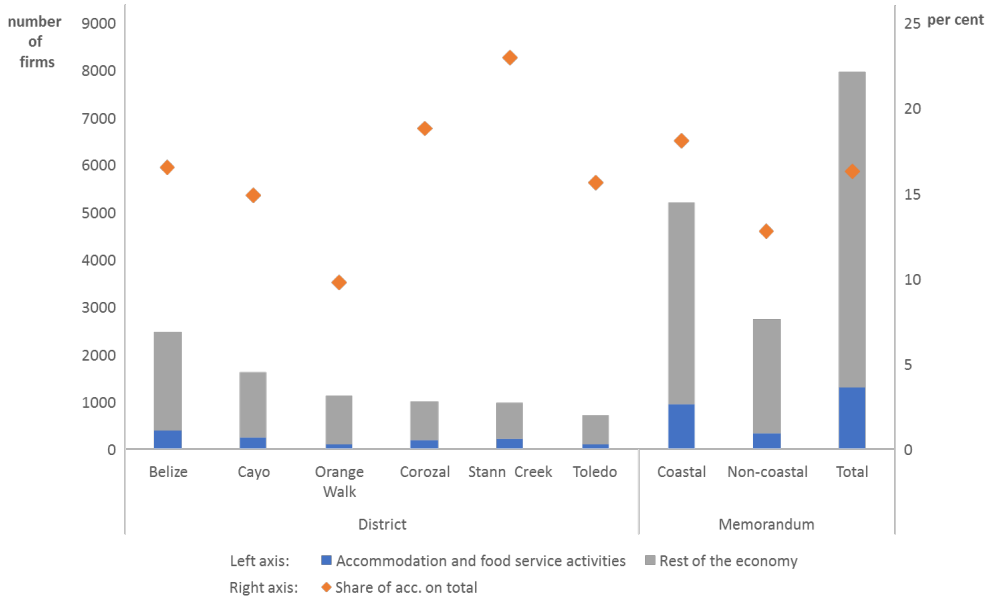
Source: UNCTAD analysis on data extracted from Travel and Tourism Statistics Digest, Belize Tourism Board (BTB), 2017. Data downloaded in October 2018.

Note: Marine hotspots are Ambergris Caye, Caye Caulker, Corozal and Placencia. Figures exclude some minor island locations.

One important sector in terms of buyer-supplier linkages with ocean industries (upstream) and tourism markets (downstream) is accommodation and food services. As of 2016, 16 per cent of Belizean firms belonged to the accommodation and food services sector. Of these, three quarters are located in coastal regions (Figure 35). Interestingly, 55 per cent of their sales originate from exports, almost twice the economy average (28 per cent). This suggests a pronounced exposure of these firms to foreign (tourist) demand and tastes.

The presence of the sector in the firm population varies widely across districts, ranging from 10 per cent in Orange Walk to 23 per cent in Stann Creek. On average, coastal districts have larger accommodation and food services sectors compared to continental (18 per cent vs. 13 per cent of firms). This may be partly explained by market linkages between maritime tourism and hospitality services, such as hotels and restaurants, which involves opportunities to link tourists' consumption with fish harvesting and seafood processing activities.[21]

Figure 35: Accommodation and food service vs. other establishments by district, 2016

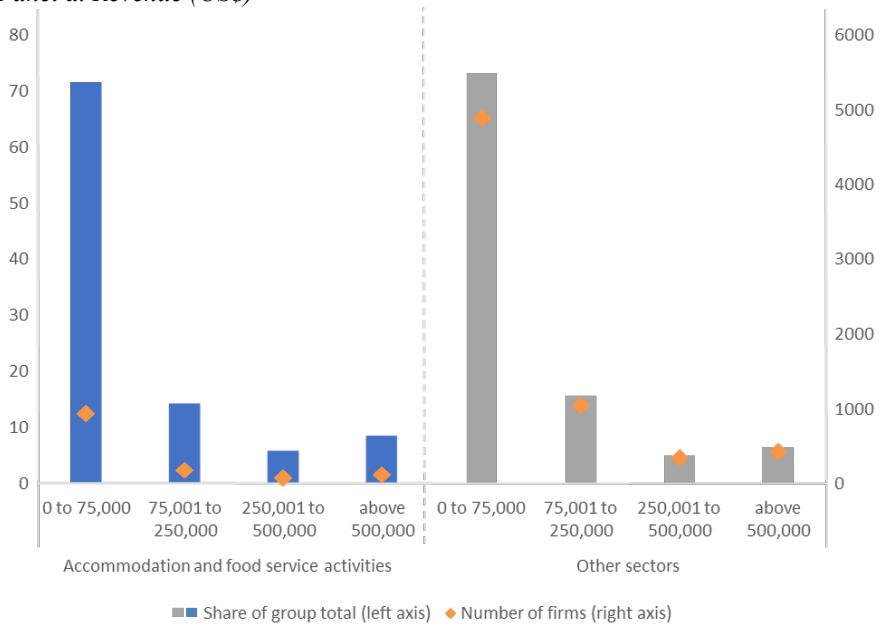


Source: UNCTAD analysis on data extracted from Statistical Institute of Belize (SIB) Business Establishment Survey, 2016. Data downloaded in October 2018.
Note: Coastal districts are Belize City, Corozal, Stann Creek and Toledo.

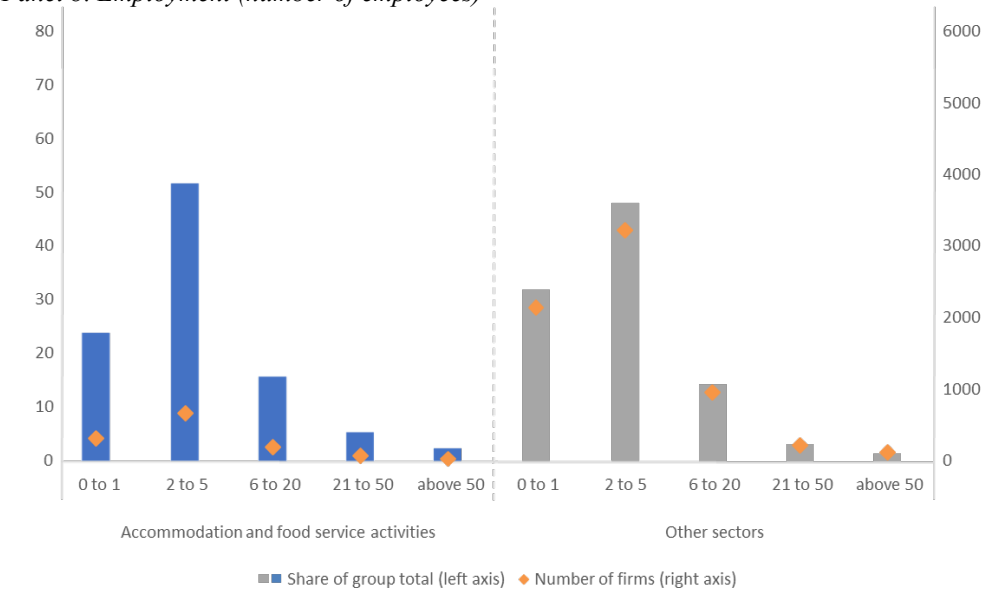
Accommodation and food service firms show average size and age. As per the rest of the economy, establishments are predominantly small-sized, the most having annual turnover below $75,000 (72 per cent) and employs between nil to five employees (76 per cent) (Figure 36). Only two per cent of surveyed firms have been established in the last year and over 40 per cent are more than ten years old. In the face of a booming tourism sector, this suggests that growth may be fuelled by incumbents readapting their business models to a larger variety of demands and tastes.

Figure 36: Size of establishments: accommodation and food service activities vs. other sectors, 2016

Panel a. Revenue (US$)



Panel b. Employment (number of employees)



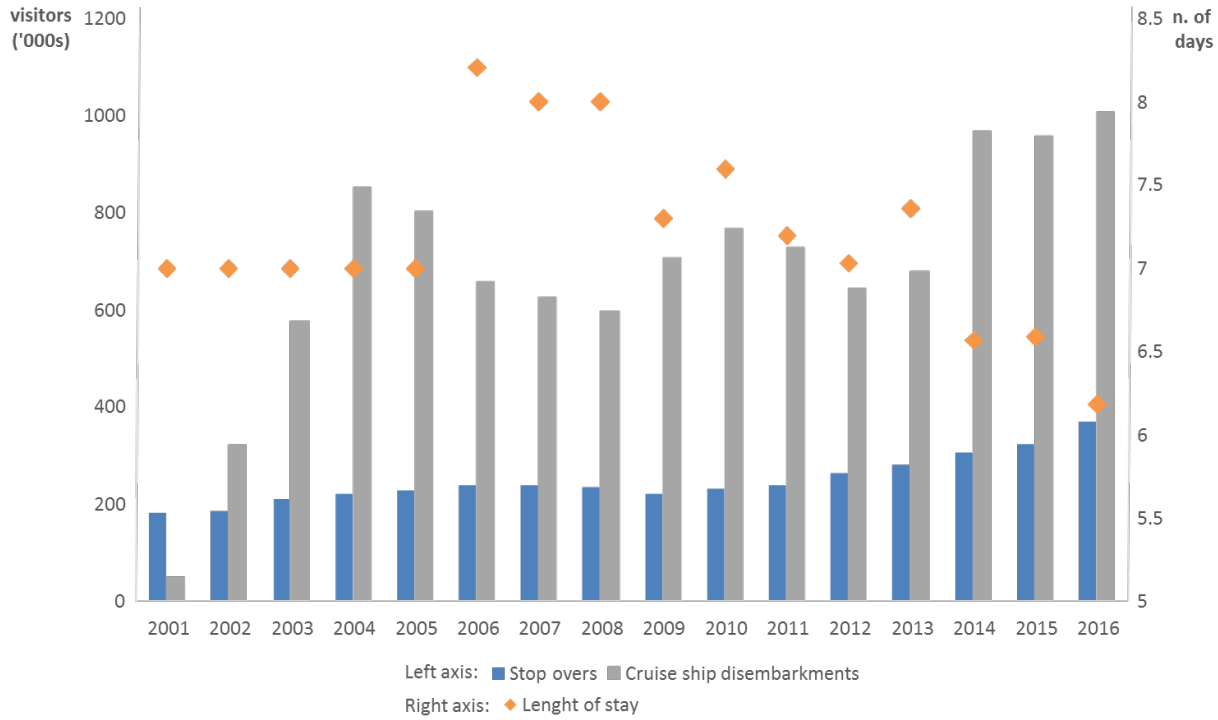
Source: UNCTAD analysis on data from Statistical Institute of Belize (SIB) Business Establishment Survey, 2016.

5.3 Markets

5.3.1 Tourist arrivals

Over the past 15 years Belize managed to attract an increasing number of international tourists. Between 2001 and 2016, cruise ship disembarkments have increased twenty-fold, while stopover arrivals have doubled (Figure 37). While arrivals – particularly stopovers - have recorded steep upward trends, the average length of stay has been declining. In 2016, tourists have spent on average 6.2 days in the country, roughly 25 per cent less than they did 2006. This calls for targeted policy actions that make it attractive for visitors to spend more time in the country and likely, with the desired effect of increasing visitor expenditure.

Figure 37: International tourist arrivals: Stopovers vs. via cruise ship, 2001-2016



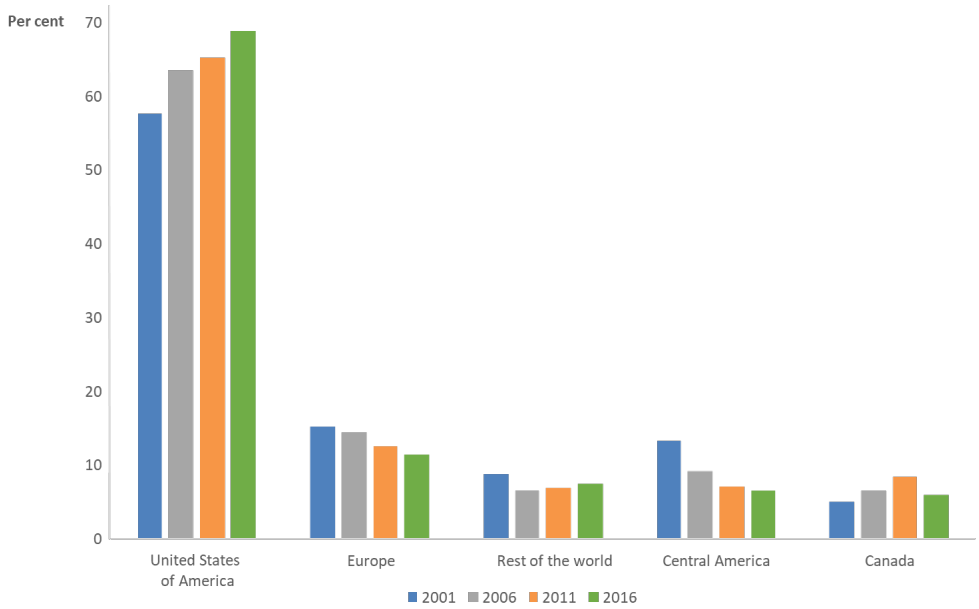
Source: UNCTAD analysis on data from Belize Tourism Board (BTB) as published by the Statistical Institute of Belize (SIB), 2018. Data downloaded in 2018.
Note: Figures include international tourism only and exclude Belizeans living abroad.

Tourism in Belize have been historically dependent on a few, perhaps large markets. In 2016, almost three quarters of tourists were American. The United States of America is the primary inbound market and accounted for 69 per cent of stopover arrivals in 2016, followed by Europe (12 per cent) and Central America (seven per cent) (Figure 38, panel a).

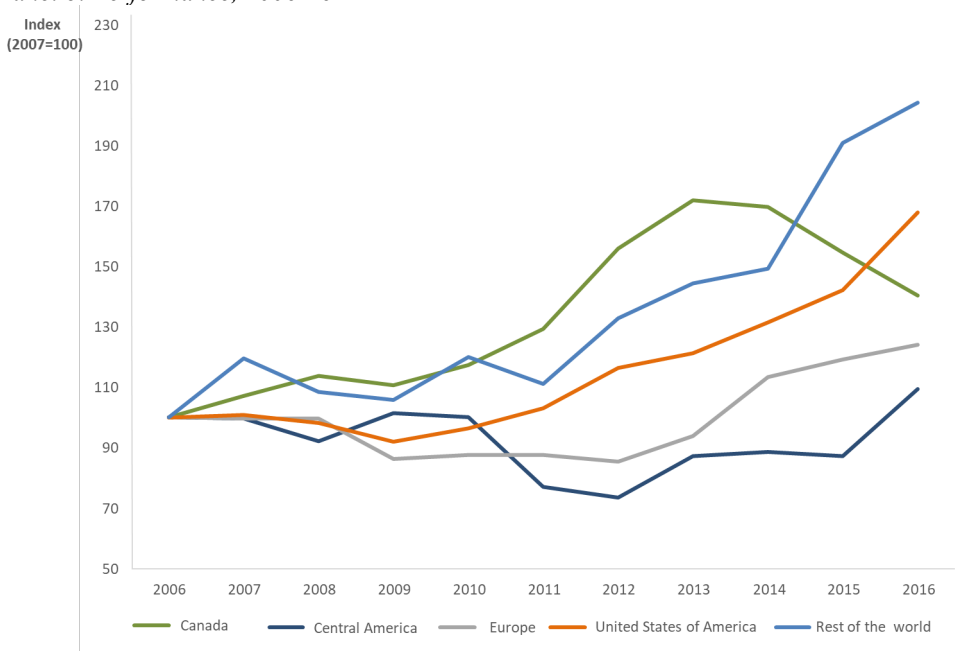
As opposed to supply, market demand shows a relatively high degree of dynamism (Figure 38, panel b). Between 2006 and 2016, arrivals from the United States of America have increased at an average rate of five per cent per year, over twice as fast as Europe (two per cent) and four times faster than Central America (one per cent). The fastest-growing markets belong to the rest of world, particularly the Middle East (19 per cent) and Oceania (11 per cent). Nevertheless, these markets account for only small shares of total arrivals (nil to two per cent).

Figure 38: Top five inbound tourism markets (by arrivals), 2001-2016

Panel a. Market share



Panel b. Performance, 2006-16



Source: UNCTAD analysis on data extracted from Belize Tourism Board (BTB) as published by the Statistical Institute of Belize (SIB), 2018. Data downloaded in 2018.
Note: Figures include international tourism only and exclude Belizeans living abroad. Countries accounting for five per cent or less of tourist arrivals have been grouped in the category "Rest of World".

Looking at demand also helps to shed light on the marine and coastal tourism sector, for which official statistics are not available. To this aim, survey data on activities and places visited by stopover tourists are particularly meaningful.[22]

In 2017, the top three most popular tourist attractions in Belize were maritime, specifically the Belize Barrier Reef, MPAs and offshore islands. They have been reportedly visited by 57 per cent, 46 per cent and 42 per cent of visitors respectively. Snorkelling was the most

popular activity, engaged in by 71 per cent of visitors, followed by caving (31 per cent) and jungle trekking (30 per cent). Other coastal activities, such as fishing (19 per cent), diving (19 per cent) and sailing (12 per cent) were also relatively popular (UNCTAD analysis based on data published in: Belize Tourism Board, 2017).

Still, some potential recreational activities remain possibly untapped. Sport fishing is an exceptional case in point. While one out five tourists report to having gone fishing, only one per cent of tourists have chosen a fishing lodge as accommodation. Business models that better integrate different subsectors of the blue economy, such as experiential fishery eco-tourism, can be further explored and developed. Better regulation may also be needed in terms of granting fishing licenses for tour operators engaged directly or indirectly in sport or incidental fishing activities.

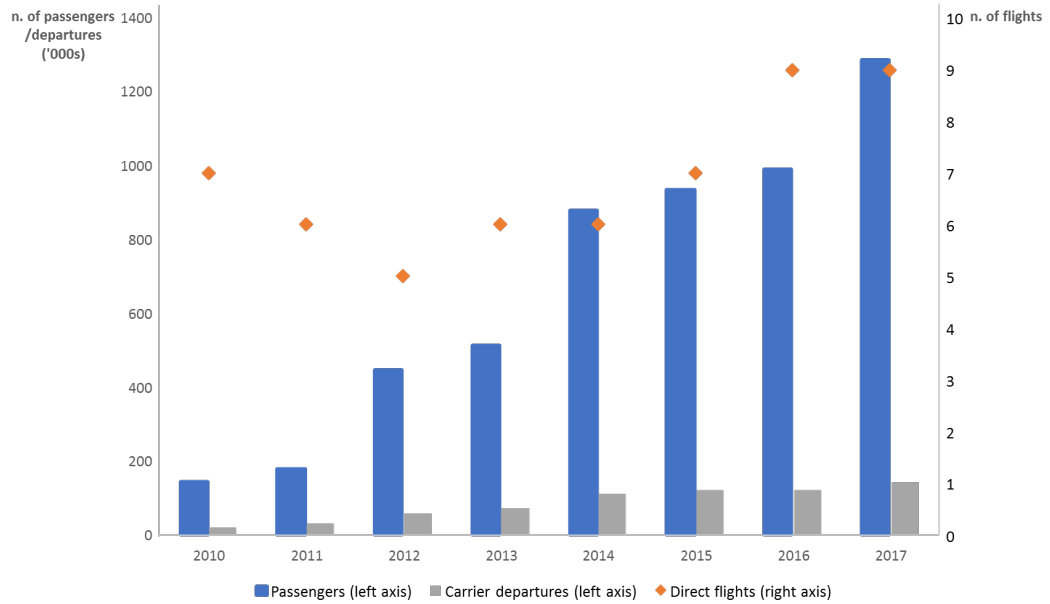
5.3.2 Connectivity

Following sustained growth in the tourism sector, Belize had to deal with providing connectivity services in line with regional and international standards. Given the diminishing importance of regional tourism and the increasing importance of the United States of America and Europe as inbound tourist markets, air connectivity tops the agenda. In 2016, 77 per cent of tourists reached the country by air, while only 22 per cent arrived via ground or sea.[23]

International flight statistics reveal that air passengers of carriers registered in the country has increased by 37 per cent annually between 2010 and 2017, reaching an all-time high of 1,385 million in 2017. This trend was mirrored by carrier departures (CAGR=32 per cent) (Figure 39). In line with passenger and departure trends, the number of destinations connected with Belize via direct flights has also doubled, from four in 2008 to nine in 2017.

Yet, six out of nine destinations are in the Americas, with only one direct flight to the United Kingdom, and no other service connecting it to continental Europe (Figure 40). In an effort to diversify the customer base - largely (and increasingly) focused on the United States – Belize will invest in opening new direct fight routes to Europe, enabling European passengers to reach the country in a seamless and time-efficient manner. If airport infrastructure allows, entering into open skies agreements (or specific agreements with low cost airlines) with Canada and key European destinations (e.g. France, Germany and Switzerland) may be an interesting option to explore.

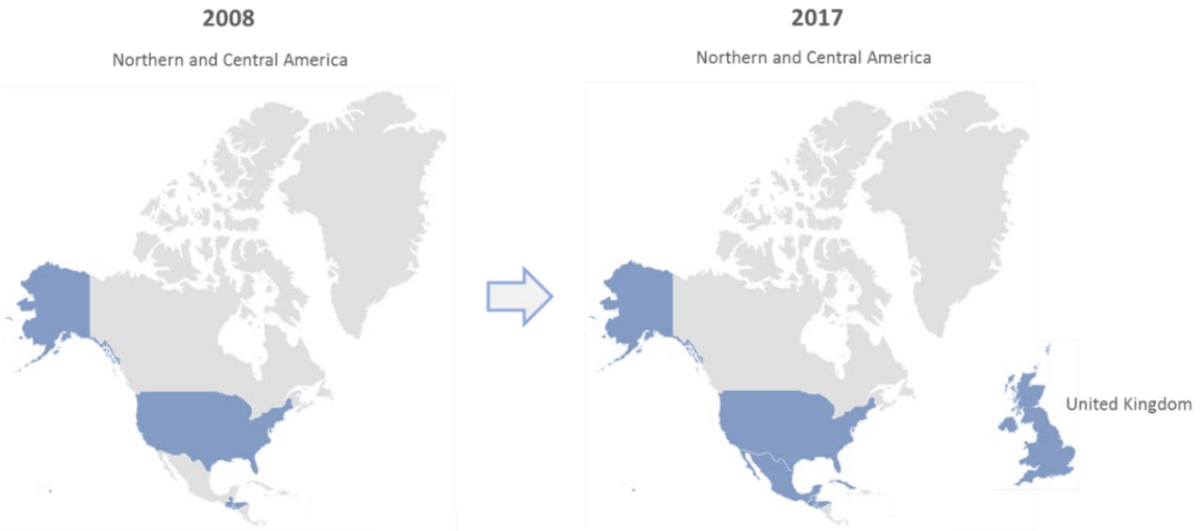
Figure 39: Air passengers, carrier departures and direct flight destinations, 2010-2017



Source: UNCTAD analysis on data extracted from International Air Transport Association (IATA) Air Transport Statistics and International Civil Aviation Organization (ICAO), Civil Aviation Statistics and staff estimates as published by the World Bank, World Development Indicators. Data downloaded in October 2018.

Note: "Passengers" are domestic and international aircraft passengers of air carriers registered in the country. Similarly, "carrier departures" are domestic takeoffs and takeoffs abroad of air carriers registered in the country. Missing data points for "direct flights" were compiled by UNCTAD via desk research.

Figure 40: Direct flight routes to and from Belize, 2008-2017



Source: UNCTAD analysis on data extracted from International Air Transport Association (IATA), Air Transport Statistics. Data downloaded in October 2018.

5.4 Trade

5.4.1 Overview

Table 18: Trade in tourism in a nutshell, 2002-2017

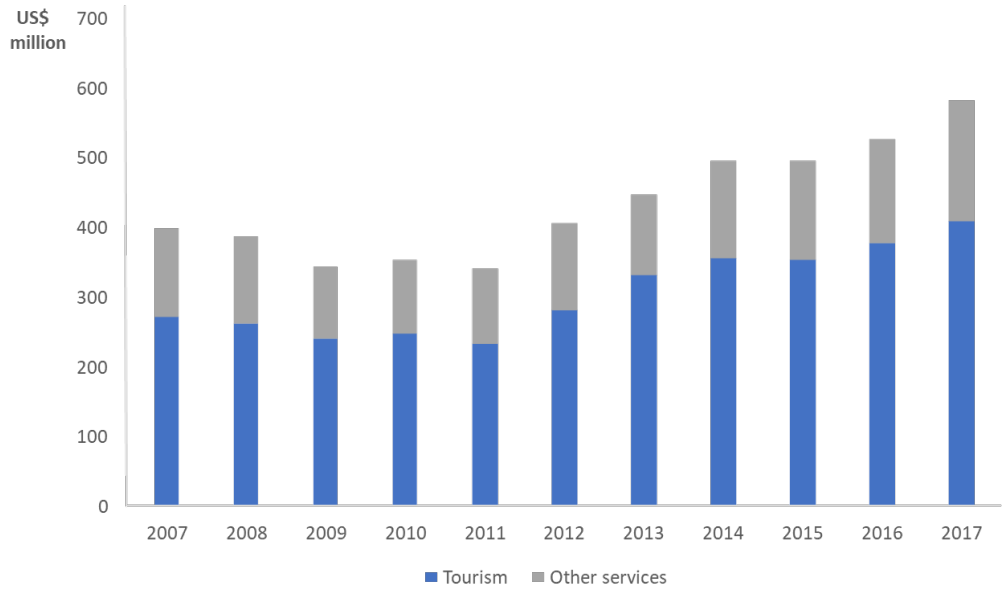
	2002	2007	2012	2017
Exports value ($ million)	-	270.8	282.2	409.2
Total services exports ($ million)	-	400	406.6	581.4
Share of services exports total (%)	-	68	69	70
Number of stopover tourist arrivals	199, 521	251,422	277,135	385,583*
HHI index (nationality of arrivals)	0.363	0.430	0.469	0.493*
No. of direct flight destinations	-	4	5	9

Source: UNCTAD analysis based on multiple sources.
*Data points of stopover arrivals and HHI for 2017 are from 2016 (most recent available year).

5.4.2 Trade trends

Despite a deteriorating trade performance in the years following the global financial crisis, Belize's exports of travel and tourism services have grown at an annual average rate of four per cent in the last decade between 2007 and 17 (Figure 41). If most recent years are considered (2011-17), annual average growth was as significant as ten per cent. Exports of travel and tourism services have reached an all-time high of $409 billion in 2017, as they account for 70 per cent of Belize's services export and over 20 per cent of the country's GDP.[24]

Figure 41: Exports of tourism and travel services, 2007-2017



Source: UNCTAD analysis on data extracted from UNCTADStat - Balance of Payments (BPM6) Statistics. Data downloaded in October 2018.

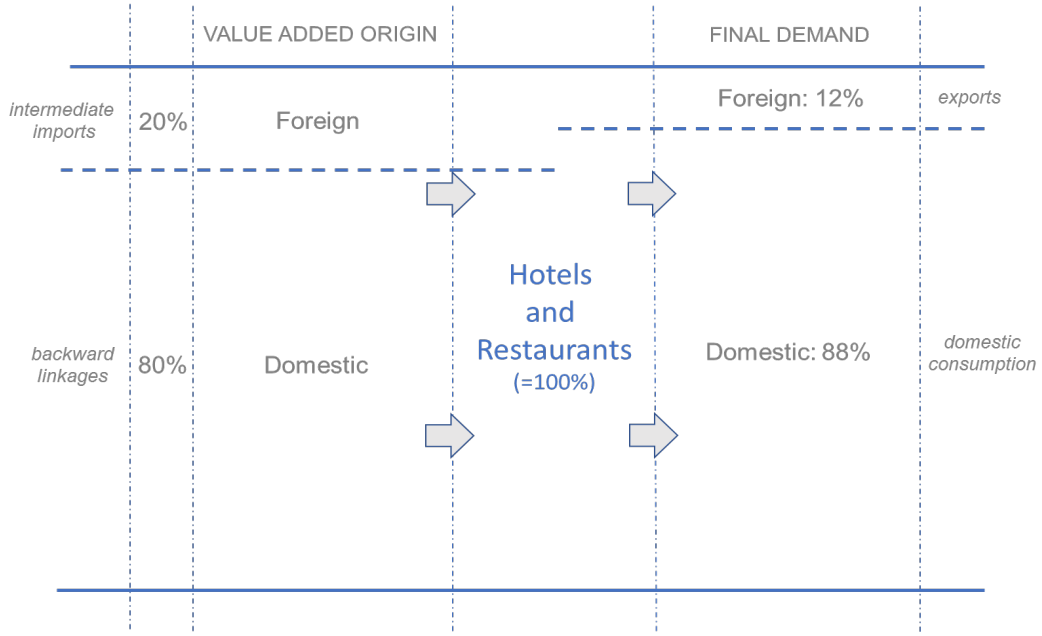
Note: BPM6 3-digit item SDB3, "Travel – Personal travel – Other Personal Travel" is used as proxy of tourism services. The corresponding nomenclature in UNCTAD/WTO BPM statistics is: "Travel, Personal, Other (Other than health and education)".

Additional insight on Belize's export structure can be gathered by looking at value added trade data, which slices up export value into foreign versus domestic origin and consumption.

The hospitality services sector, e.g. hotels and restaurants, is an exceptional case in point, as it presents a rather complex composition of value added.

Twenty per cent of hotels and restaurants' exports value has foreign origin, as embedded in imports of intermediate goods and services (Figure 42). This figure, against a sector's global average of 15 per cent, reveals a relatively high degree of backward integration into global value chains (GVCs). The remaining 80 per cent is contributed by domestic industries via backward linkages with suppliers. If properly enabled, the fisheries and aquaculture sector could play an important role in supplying fresh and healthy food options for tourists.[25]

Figure 42: Value added content of hotels and restaurants exports: foreign vs. domestic, 2015



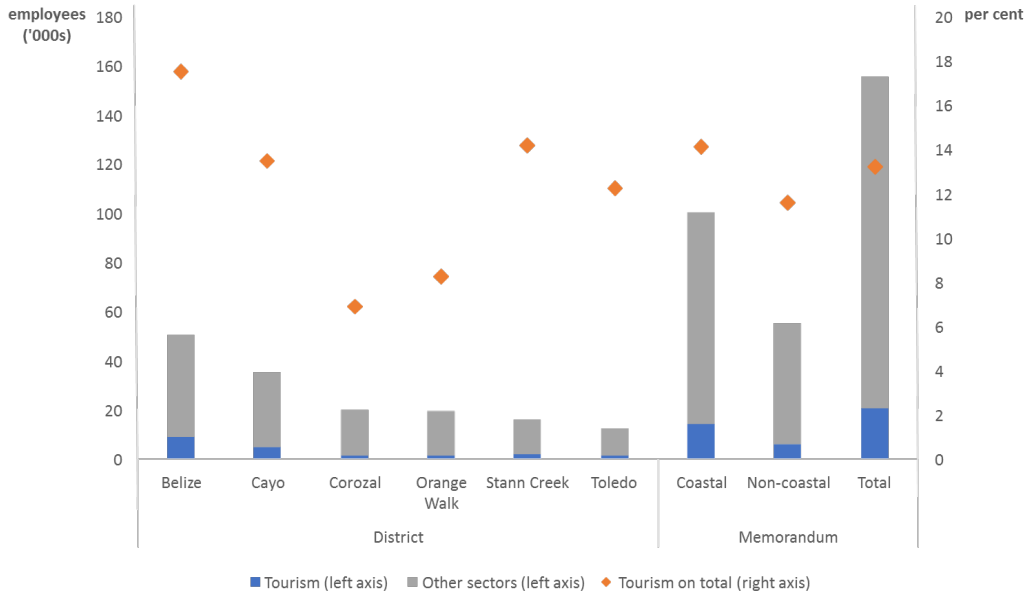
Source: UNCTAD analysis on data extracted from UNCTAD Eora-Global Value Chain (GVC) Database. Data downloaded in October 2018.

Downstream integration is more limited, as majority of the sector's output is consumed domestically (88 per cent). Clearly, despite sustained growth in tourism, foreign demand only absorbs a minor part of the sector's output (12 per cent).[26] This suggests the existence of well-developed forward linkages with (domestic) customers, or, most likely, of large private household consumption.[27]

5.5 Employment

As of April 2018, the tourism sector employs close to 21,000 Belizeans, corresponding to 13 per cent of national employment (Figure 43). The contribution of tourism to employment varies widely across districts, ranging from seven per cent in Corozal town to 18 per cent in Belize City. In general, tourism absorbs a larger share of the employed population in coastal (14 per cent) as opposed to continental (12 per cent) districts. This points to the potential and important role of maritime tourism activities as a source of local employment.[28]

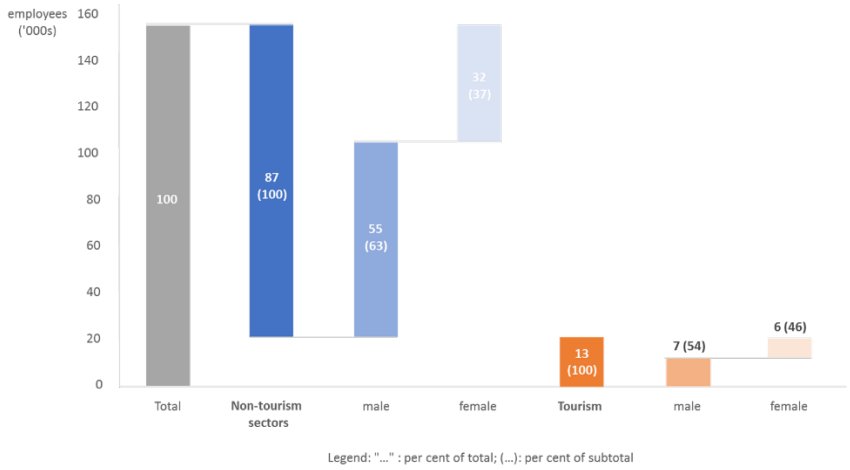
Figure 43: Tourism contribution to employment by district, 2018



Source: UNCTAD analysis on data extracted from Statistical Institute of Belize (SIB) Labour Force Survey, 2018b. Data downloaded in October 2018.
Note: Coastal districts are Belize, Corozal, Stann Creek and Toledo.

Tourism also creates a diverse range of indirect jobs in upstream and downstream industries. While it directly employs around 20,000 nationals (Figure 44), this figure grows four times more if indirect and induced employment effects were also considered. Overall, it is estimated that the sector generates over 90,000 jobs, equal to 45% of national employment (WTTC, 2017). Not only is tourism sector an important source of employment in Belize, but moreso, it supports female employment intensively. Indeed, it employs relatively more women than other sectors of the economy. In 2018, some 46 per cent of employees in the Belizean tourism sector was female, roughly ten per cent more compared to other sectors (37 per cent) (Figure 44). Beyond generating economic value, a booming tourism sector may also contribute to advancing a more inclusive and gender-equal society.

Figure 44: Tourism and non-tourism employment (by gender), 2018



Source: UNCTAD analysis on data extracted from Statistical Institute of Belize (SIB), Labour Force Survey, 2018. Data downloaded in October 2018.

5.6 Environment

The uniqueness of coastal and marine ecosystems in Belize is one of the most important attractions for overseas tourists. The Belize Barrier Reef Reserve System (BBRRS) has been inscribed as a UNESCO World Heritage Site since 1996. The country also has two wetland sites listed under the Ramsar Convention on Wetlands of International Importance. There are nine MPAs in the country that are directly managed or co-managed by Belize Fisheries Department (BFD). In addition, three marine national parks, two natural monuments, twelve fish spawning aggregations sites and two marine wildlife sanctuaries were also declared. All the above cover a surface of some 4,051 km² (or 21.6 per cent of Belize's territorial seas).

As mentioned, the sun, sea and cruise tourism combined with rainforest and cultural heritage represents the lion's share of Belize's touristic offer. Niche tourism activities such as marine sports, sports fishing and sea life watching excursions can represent additional opportunities for the country, provided that national regulations are properly enforced and further developed.[29]

In December 2019, the Government of Belize voted to implement an indefinite moratorium on all new oil exploration in its waters to safeguard the marine environment and further promote dive tourism. By doing so, it became one of the first developing countries to turn away from oil and seek to embrace environmentally-sustainable development pathways by protecting the ocean environment in line with Sustainable Development Goal 14.

Appendix 1: Product classification by sector (Harmonized System Nomenclature 2012 Edition)

I. Marine fisheries sector

Product	HS-6 Product code	Product description	
		Classification	Sub-classification
03.01 Live fish	0301.11	- Ornamental fish	-- Freshwater
	0301.19		-- Other
	0301.91	- Other live fish	-- Trout (*Salmo trutta, Oncorhynchus mykiss, Oncorhynchus clarki, Oncorhynchus aguabonita, Oncorhynchus gilae, Oncorhynchus apache* and *Oncorhynchus chrysogaster*)
	0301.92		-- Eels (*Anguilla spp.*)
	0301.93		-- Carp (*Cyprinus carpio*, *Carassius carassius*, *Ctenopharyngodon idellus*, *Hypophthalmichthys spp.*, *Cirrhinus spp.*, *Mylopharyngodon piceus*)
	0301.94		-- Atlantic and Pacific bluefin tunas (*Thunnus thynnus*, *Thunnus orientalis*)
	0301.95		-- Southern bluefin tunas (*Thunnus maccoyii*)
	0301.99		-- Other
03.02 Fish, fresh or chilled, excluding fish fillets and other fish meat of heading **03.04**	0302.11	- Salmonidae, excluding livers and roes	-- Trout (*Salmo trutta, Oncorhynchus mykiss, Oncorhynchus clarki, Oncorhynchus aguabonita, Oncorhynchus gilae, Oncorhynchus apache* and *Oncorhynchus chrysogaster*)
	0302.13		-- Pacific salmon (*Oncorhynchus nerka*, *Oncorhynchus gorbuscha*, *Oncorhynchus keta*, *Oncorhynchus tschawytscha*, *Oncorhynchus kisutch*, *Oncorhynchus masou* and *Oncorhynchus rhodurus*)

	0302.14		-- Atlantic salmon (*Salmo salar*) and Danube salmon (*Hucho hucho*)
	0302.19		-- Other
	0302.21	- Flat fish (*Pleuronectidae, Bothidae, Cynoglossidae, Soleidae, Scophthalmidae* and *Citharidae*), excluding livers and roes	-- Halibut (*Reinhardtius hippoglossoides, Hippoglossus hippoglossus, Hippoglossus stenolepis*)
	0302.22		-- Plaice (*Pleuronectes platessa*)
	0302.23		-- Sole (*Solea spp.*)
	0302.24		-- Turbots (*Psetta maxima*)
	0302.29		-- Other
	0302.31	-Tunas (of the genus *Thunnus*), skipjack or stripe-bellied bonito (*Euthynnus (Katsuwonus) pelamis*), excluding livers and roes	-- Albacore or longfinned tunas (*Thunnus alalunga*)
	0302.32		-- Yellowfin tunas (*Thunnus albacares*)
	0302.33		-- Skipjack or stripe-bellied bonito
	0302.34		-- Bigeye tunas (*Thunnus obesus*)
	0302.35		-- Atlantic and Pacific bluefin tunas (*Thunnus thynnus*, *Thunnus orientalis*)
	0302.36		-- Southern bluefin tunas (*Thunnus maccoyii*)
	0302.39		-- Other
	0302.41	- Herrings (*Clupea harengus*, *Clupea pallasii*), anchovies (*Engraulis spp.*), sardines (*Sardina pilchardus*, *Sardinops spp.*), sardinella (*Sardinella spp.*), brisling or sprats (*Sprattus sprattus*), mackerel (*Scomber scombrus*, *Scomber australasicus*, *Scomber japonicus*),	-- Herrings (*Clupea harengus*, *Clupea pallasii*)
	0302.42		-- Anchovies (*Engraulis spp.*)
	0302.43		-- Sardines (*Sardina pilchardus*, *Sardinops spp.*), sardinella (*Sardinella spp.*), brisling or sprats (*Sprattus sprattus*)
	0302.44		-- Mackerel (*Scomber scombrus*, *Scomber australasicus*, *Scomber*

		jack and horse mackerel (*Trachurus spp.*), cobia (*Rachycentron canadum*) and swordfish (*Xiphias gladius*), excluding livers and roes	*japonicus*)
	0302.45		-- Jack and horse mackerel (*Trachurus spp*.)
	0302.46		-- Cobia (*Rachycentron canadum*)
	0302.47		-- Swordfish (*Xiphias gladius*)
	0302.51	- Fish of the families *Bregmacerotidae*, *Euclichthyidae*, *Gadidae*, *Macrouridae*, *Melanonidae*, *Merlucciidae*, *Moridae* and *Muraenolepididae*, excluding livers and roes	-- Cod (*Gadus morhua*, *Gadus ogac*, *Gadus macrocephalus*)
	0302.52		-- Haddock (*Melanogrammus aeglefinus*)
	0302.53		-- Coalfish (*Pollachius virens*)
	0302.54		-- Hake (*Merluccius spp., Urophycis spp.*)
	0302.55		-- Alaska Pollack (*Theragra chalcogramma*)
	0302.56		-- Blue whitings (*Micromesistius poutassou*, *Micromesistius australis*)
	0302.59		-- Other
	0302.72	- Tilapias (*Oreochromis spp.*), catfish (*Pangasius spp*., *Silurus spp*., *Clarias spp*., *Ictalurus spp*.), carp (*Cyprinus carpio*, *Carassius carassius*, *Ctenopharyngodon idellus*, *Hypophthalmichthys spp*., *Cirrhinus spp*., *Mylopharyngodon piceus*), eels (*Anguilla spp*.), Nile perch (*Lates niloticus*) and snakeheads (*Channa spp.*), excluding livers and roes	-- Catfish (*Pangasius spp*., *Silurus spp*., *Clarias spp*., *Ictalurus spp*.)
	0302.73		-- Carp (*Cyprinus carpio*, *Carassius carassius*, *Ctenopharyngodon idellus*, *Hypophthalmichthys spp*., *Cirrhinus Mylopharyngodon piceus*)
	0302.74		-- Eels (*Anguilla spp*.)
	0302.79		-- Other
	0302.81	- Other fish, excluding livers and roes	-- Dogfish and other sharks
	0302.82		-- Rays and skates (*Rajidae*)
	0302.83		-- Toothfish (*Dissostichus spp*.)

	0302.84		-- Seabass (*Dicentrarchus spp.*)
	0302.85		-- Seabream (*Sparidae*)
	0302.89		-- Other
	0302.90	- Livers and roes	
03.03 Fish, frozen, excluding fish fillets and other fish meat of heading **03.04**.	0303.11	- Salmonidae, excluding livers and roes	-- Sockeye salmon (red salmon) (*Oncorhynchus nerka*)
	0303.12		-- Other Pacific salmon (*Oncorhynchus gorbuscha*, *Oncorhynchus keta*, *Oncorhynchus tschawytscha*, *Oncorhynchus kisutch*, *Oncorhynchus masou* and *Oncorhynchus rhodurus*)
	0303.13		-- Atlantic salmon (*Salmo salar*) and Danube salmon (*Hucho hucho*)
	0303.14		-- Trout (*Salmo trutta*, *Oncorhynchus mykiss*, *Oncorhynchus clarki*, *Oncorhynchus aguabonita*, *Oncorhynchus gilae*, *Oncorhynchus apache* and *Oncorhynchus chrysogaster*)
	0303.19		-- Other
	0303.24		-- Catfish (*Pangasius spp.*, *Silurus spp.*, *Clarias spp.*, *Ictalurus spp.*)
	0303.25		-- Carp (*Cyprinus carpio*, *Carassius carassius*, *Ctenopharyngodon idellus*, *Hypophthalmichthys spp.*, *Cirrhinus spp.*, *Mylopharyngodon piceus*)
	0303.26		-- Eels (*Anguilla spp.*)
	0303.29		-- Other
	0303.31	- Flat fish (*Pleuronectidae, Bothidae, Cynoglossidae, Soleidae, Scophthalmidae* and *Citharidae*), excluding livers and roes	-- Halibut (*Reinhardtius hippoglossoides, Hippoglossus hippoglossus, Hippoglossus stenolepis*)
	0303.32		-- Plaice (*Pleuronectes platessa*)
	0303.33		-- Sole (*Solea spp.*)
	0303.34		-- Turbots (*Psetta maxima*)
	0303.39		-- Other

	0303.41	-Tunas (of the genus *Thunnus*), skipjack or stripe-bellied bonito (*Euthynnus (Katsuwonus) pelamis*), excluding livers and roes	-- Albacore or longfinned tunas (*Thunnus alalunga*)
	0303.42		-- Yellowfin tunas (*Thunnus albacares*)
	0303.43		-- Skipjack or strip-bellied bonito
	0303.44		-- Bigeye tunas (*Thunnus obesus*)
	0303.45		-- Atlantic and Pacific bluefin tunas (*Thunnus thynnus*, *Thunnus orientalis*)
	0303.46		-- Southern bluefin tunas (*Thunnus maccoyii*)
	0303.49		-- Other
	0303.51	- Herrings (*Clupea harengus*, *Clupea pallasii*), sardines (*Sardina pilchardus*, *Sardinops spp.*), sardinella (*Sardinella spp.*), brisling or sprats (*Sprattus sprattus*), mackerel (*Scomber scombrus*, *Scomber australasicus*, *Scomber japonicus*), jack and horse mackerel (*Trachurus spp.*), cobia (*Rachycentron canadum*) and swordfish (*Xiphias gladius*), excluding livers and roes	-- Herrings (*Clupea harengus*, *Clupea pallasii*)
	0303.53		-- Sardines (*Sardina pilchardus*, *Sardinops spp.*), sardinella (*Sardinella spp.*), brisling or sprats (*Sprattus sprattus*)
	0303.54		-- Mackerel (*Scomber scombrus*, *Scomber australasicus*, *Scomber japonicus*)
	0303.55		-- Jack and horse mackerel (*Trachurus spp.*)
	0303.56		-- Cobia (*Rachycentron canadum*)
	0303.57		-- Swordfish (*Xiphias gladius*)
	0303.63	- Fish of the families *Bregmacerotidae*, *Euclichthyidae*, *Gadidae*, *Macrouridae*, *Melanonidae*, *Merlucciidae*, *Moridae* and *Muraenolepididae*,	-- Cod (*Gadus morhua*, *Gadus ogac*, *Gadus macrocephalus*)
	0303.64		-- Haddock (*Melanogrammus aeglefinus*)
	0303.65		-- Coalfish (*Pollachius virens*)
	0303.66		-- Hake (*Merluccius spp.*,

		excluding livers and roes	*Urophycis spp.*)
	0303.67		-- Alaska Pollack (*Theragra chalcogramma*)
	0303.68		-- Blue whitings (*Micromesistius poutassou*, *Micromesistius australis*)
	0303.69		-- Other
	0303.81	- Other fish, excluding livers and roes	-- Dogfish and other sharks
	0303.82		-- Rays and skates (*Rajidae*)
	0303.83		-- Toothfish (*Dissostichus spp.*)
	0303.84		-- Seabass (*Dicentrarchus spp.*)
	0303.89		-- Other
	0303.90	- Livers and roes	
03.04 Fish fillets and other fish meat (whether or not minced), fresh, chilled or frozen	0304.32	- Fresh or chilled fillets of tilapias (*Oreochromis spp.*), catfish (*Pangasius spp.*, *Silurus spp.*, *Clarias spp.*, *Ictalurus spp.*), carp (*Cyprinus carpio*, *Carassius carassius*, *Ctenopharyngodon idellus*, *Hypophthalmichthys spp.*, *Cirrhinus spp.*, *Mylopharyngodon piceus*), eels (*Anguilla spp.*), Nile perch (*Lates niloticus*) and snakeheads (*Channa spp.*)	-- Catfish (*Pangasius spp.*, *Silurus spp.*, *Clarias spp.*, *Ictalurus spp.*)
	0304.33		-- Nile Perch (*Lates niloticus*)
	0304.39		-- Other
	0304.41 0304.42	- Fresh or chilled fillets of other fish	-- Pacific salmon (*Oncorhynchus nerka*, *Oncorhynchus gorbuscha*, *Oncorhynchus keta*, *Oncorhynchus tschawytscha*, *Oncorhynchus kisutch*, *Oncorhynchus masou* and *Oncorhynchus rhodurus*), Atlantic salmon (*Salmo salar*) and Danube salmon (*Huchohucho*)
			-- Trout (*Salmo trutta*, *Oncorhynchus mykiss*,

			Oncorhynchus clarki, *Oncorhynchus aguabonita*, *Oncorhynchus gilae*, *Oncorhynchus apache* and *Oncorhynchus chrysogaster*)
	0304.43		-- Flat fish (*Pleuronectidae*, *Bothidae*, *Cynoglossidae*, *Soleidae*, *Scophthalmidae* and *Citharidae*)
	0304.44		-- Fish of the families *Bregmacerotidae*, *Euclichthyidae*, *Gadidae*, *Macrouridae*, *Melanonidae*, *Merlucciidae*, *Moridae* and *Muraenolepididae*
	0304.45		-- Swordfish (*Xiphias gladius*)
	0304.46		-- Toothfish (*Dissostichus spp.*)
	0304.49		-- Other
	0304.51	- Other, fresh or chilled	-- Tilapias (*Oreochromis spp.*), catfish (*Pangasius spp.*, *Silurus spp.*, *Clarias spp.*, *Ictalurus spp.*), carp (*Cyprinus carpio*, *Carassius carassius*, *Ctenopharyngodon idellus*, *Hypophthalmichthys spp.*, *Cirrhinus spp.*, *Mylopharyngodon piceus*), eels (*Anguilla spp.*), Nile perch (*Lates niloticus*) and snakeheads (*Channa spp.*)
	0304.52		-- Salmonidae
	0304.53		-- Fish of the families *Bregmacerotidae*, *Euclichthyidae*, *Gadidae*, *Macrouridae*, *Melanonidae*, *Merlucciidae*, *Moridae* and *Muraenolepididae*
	0304.54		-- Swordfish (*Xiphias gladius*)
	0304.55		-- Toothfish (*Dissostichus spp.*)
	0304.59		-- Other
	0304.61	- Frozen fillets of	-- Tilapias (*Oreochromis*

		tilapias (*Oreochromis spp.*), catfish (*Pangasius spp.*, *Silurus spp.*, *Clarias spp.*, *Ictalurus spp.*), carp (*Cyprinus carpio*, *Carassius carassius*, *Ctenopharyngodon idellus*, *Hypophthalmichthys spp.*, *Cirrhinus spp.*, *Mylopharyngodon piceus*), eels (*Anguilla spp.*), Nile perch (*Lates niloticus*) and snakeheads (*Channa spp.*)	*spp.*)
	0304.62		-- Catfish (*Pangasius spp.*, *Silurus spp.*, *Clarias spp.*, *Ictalurus spp.*)
	0304.63		-- Nile Perch (*Lates niloticus*)
	0304.69		-- Other
	0304.71	-Frozen fillets of fish of the families *Bregmacerotidae*, *Euclichthyidae*, *Gadidae*, *Macrouridae*, *Melanonidae*, *Merlucciidae*, *Moridae* and *Muraenolepididae*	-- Cod (*Gadus morhua*, *Gadus ogac*, *Gadus macrocephalus*)
	0304.72		-- Haddock (*Melanogrammus aeglefinus*)
	0304.73		-- Coalfish (*Pollachius virens*)
	0304.74		-- Hake (*Merluccius spp.*, *Urophycis spp.*)
	0304.75		-- Alaska Pollack (*Theragra chalcogramma*)
	0304.79		-- Other
	0304.81	- Frozen fillets of other fish	-- Pacific salmon (*Oncorhynchus nerka*, *Oncorhynchus gorbuscha*, *Oncorhynchus keta*, *Oncorhynchus tschawytscha*, *Oncorhynchus kisutch*, *Oncorhynchus masou* and *Oncorhynchus rhodurus*), Atlantic salmon (*Salmo salar*) and Danube salmon (*Huchohucho*)
	0304.82		-- Trout (*Salmo trutta*, *Oncorhynchus mykiss*, *Oncorhynchus clarki*, *Oncorhynchus aguabonita*, *Oncorhynchus gilae*,

			Oncorhynchus apache and *Oncorhynchus chrysogaster*)
	0304.83		-- Flat fish (*Pleuronectidae*, *Bothidae*, *Cynoglossidae*, *Soleidae*, *Scophthalmidae* and *Citharidae*)
	0304.84		-- Swordfish (*Xiphias gladius*)
	0304.85		-- Toothfish (*Dissostichus spp.*)
	0304.86		-- Herrings (*Clupea harengus*, *Clupea pallasii*)
	0304.87		-- Tunas (of the genus *Thunnus*), skipjack or stripe-bellied bonito (*Euthynnus* (*Katsuwonus*) *pelamis*)
	0304.89		-- Other
	0304.91	- Other, frozen	-- Swordfish (*Xiphias gladius*)
	0304.92		-- Toothfish (*Dissostichus spp.*)
	0304.94		-- Alaska Pollack (*Theragra chalcogramma*)
	0304.95		-- Fish of the families *Bregmacerotidae*, *Euclichthyidae*, *Gadidae*, *Macrouridae*, *Melanonidae*, *Merlucciidae*, *Moridae* and *Muraenolepididae,* other than Alaska Pollack (*Theragra chalcogramma*)
	0304.99		-- Other
03.05 Fish, dried, salted or in brine; smoked fish, whether or not cooked before or during the smoking process; flours, meals and pellets of fish, fit for human consumption	0305.10	- Flours, meals and pellets of fish, fit for human consumption	
	0305.20	- Livers and roes of fish, dried, smoked, salted or in brine	
	0305.31	- Fish fillets, dried, salted or in brine, but not smoked	-- Tilapias (*Oreochromis spp.*), catfish (*Pangasius spp.*, *Silurus spp.*, *Clarias spp.*, *Ictalurus spp.*), carp (*Cyprinus carpio*, *Carassius carassius*, *Ctenopharyngodon idellus*,

			Hypophthalmichthys spp., *Cirrhinus spp*., *Mylopharyngodon piceus*), eels (*Anguilla spp*.), Nile perch (*Lates niloticus*) and snakeheads (*Channa spp.*)
	0305.32		-- Fish of the families *Bregmacerotidae*, *Euclichthyidae*, *Gadidae*, *Macrouridae*, *Melanonidae*, *Merlucciidae*, *Moridae* and *Muraenolepididae*
	0305.39		-- Other
	0305.41	- Smoked fish, including fillets, other than edible fish offal	-- Pacific salmon (*Oncorhynchus nerka, Oncorhynchus gorbuscha, Oncorhynchus keta, Oncorhynchus tschawytscha, Oncorhynchus kisutch, Oncorhynchus masou* and *Oncorhynchus rhodurus*), Atlantic salmon (*Salmo salar*) and Danube salmon (*Hucho hucho*)
	0305.42		-- Herrings (*Clupea harengus, Clupea pallasii*)
	0305.43		-- Trout (*Salmo trutta*, *Oncorhynchus mykiss*, *Oncorhynchus clarki*, *Oncorhynchus aguabonita*, *Oncorhynchus gilae*, *Oncorhynchus apache* and *Oncorhynchus chrysogaster*)
	0305.49		-- Other
	0305.51	- Dried fish, other than edible fish offal, whether or not salted but not smoked	-- Cod (*Gadus morhua, Gadus ogac, Gadus macrocephalus*)
	0305.59		-- Other
	0305.61	- Fish, salted but not dried or smoked and fish in brine, other than edible fish offal	-- Fish, salted but not dried or smoked and fish in brine, other than edible fish offal
	0305.62		-- Herrings (*Clupea harengus, Clupea pallasii*)
	0305.63		-- Anchovies (*Engraulis*

			spp.)
	0305.64		-- Tilapias (*Oreochromis spp.*), catfish (*Pangasius spp.*, *Silurus spp.*, *Clarias spp.*, *Ictalurus spp.*), carp (*Cyprinus carpio*, *Carassius carassius*, *Ctenopharyngodon idellus*, *Hypophthalmichthys spp.*, *Cirrhinus spp.*, *Mylopharyngodon piceus*), eels (*Anguilla spp.*), Nile perch (*Lates niloticus*) and snakeheads (*Channa spp.*)
	0305.69		-- Other
	0305.71	- Fish fins, heads, tails, maws and other edible fish offal	-- Shark fins
	0305.72		-- Fish heads, tails and maws
	0305.79		-- Other
03.06 Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; smoked crustaceans, whether in shell or not, whether or not cooked before or during the smoking process; crustaceans, in shell, cooked by steaming or by boiling in water, whether or not chilled, frozen, dried, salted or in brine; flours, meals and pellets of crustaceans, fit for human consumption	0306.11	- Frozen	-- Rock lobster and other sea crawfish (*Palinurus spp., Panulirus spp., Jasus spp.*)
	0306.12		-- Lobsters (*Homarus spp.*)
	0306.14		-- Crabs
	0306.15		-- Norway lobsters (*Nephrops norvegicus*)
	0306.19		-- Cold-water shrimps and prawns (*Pandalus spp.*, *Crangon crangon*)
	0306.21	- Not frozen	-- Rock lobster and other sea crawfish (*Palinurus spp., Panulirus spp., Jasus spp.*)
	0306.22		-- Lobsters (*Homarus spp.*)
	0306.24		-- Crabs
	0306.25		-- Norway lobsters (*Nephrops norvegicus*)
	0306.29		-- Other, including flours, meals and pellets of crustaceans, fit for human consumption
03.07 Molluscs, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; smoked	0307.11	- Oysters	-- Live, fresh or chilled
	0307.19		-- Other
	0307.21	- Scallops, including queen scallops, of the genera *Pecten, Chlamys* or	-- Live, fresh or chilled
	0307.29		-- Other

molluscs, whether in shell or not, whether or not cooked before or during the smoking process; flours, meals and pellets of molluscs, fit for human consumption		*Placopecten*	
	0307.31	- Mussels (*Mytilus spp., Perna spp.*)	-- Live, fresh or chilled
	0307.39		-- Other
	0307.41	- Cuttle fish (*Sepia officinalis, Rossia macrosoma, Sepiola spp.*) and squid (*Ommastrephes spp., Loligo spp., Nototodarus spp., Sepioteuthis spp.*)	-- Live, fresh or chilled
	0307.49		-- Other
	0307.51	- Octopus (*Octopus spp.*)	-- Live, fresh or chilled
	0307.59		-- Other
	0307.60	- Snails, other than sea snails	
	0307.71	- Clams, cockles and ark shells (families *Arcidae*, *Arcticidae*, *Cardiidae*, *Donacidae*, *Hiatellidae*, *Mactridae*, *Mesodesmatidae*, *Myidae, Semelidae*, *Solecurtidae*, *Solenidae*, *Tridacnidae* and *Veneridae*)	-- Live, fresh or chilled
	0307.79		-- Other
	0307.81	Abalone (*Haliotis spp.*)	-- Live, fresh or chilled
	0307.89		-- Other
	0307.91	- Other, including flours, meals and pellets, fit for human consumption	-- Live, fresh or chilled
	0307.99		-- Other
03.08 Aquatic invertebrates other than crustaceans and molluscs, live, fresh, chilled, frozen, dried, salted or in brine; smoked aquatic invertebrates other than crustaceans and	0308.11	- Sea cucumbers (*Stichopus japonicus*, *Holothurioidea*)	-- Live, fresh or chilled
	0308.19		-- Other
	0308.21	- Sea urchins (*Strongylocentrotus spp.*, *Paracentrotus Loxechinus albus*, *Echichinus esculentus*)	-- Live, fresh or chilled
	0308.29		-- Other
	0308.30	- Jellyfish	

molluscs, whether or not cooked before or during the smoking process; flours, meals and pellets of aquatic invertebrates other than crustaceans and molluscs, fit for human consumption		(*Rhopilema spp.*)	
	0308.90	- Other	

II. Seafood manufacturing sector

Product	HS-6 Product code	Product description	
		Classification	Sub-classification
15.04 Fats and oils and their fractions, of fish or marine mammals, whether or not refined, but not chemically modified	1504.10	- Fish-liver oils and their fractions	
	1504.20	- Fats and oils and their fractions, of fish, other than liver oils	
	1504.30	- Fats and oils and their fractions, of marine mammals	
16.04 Prepared or preserved fish; caviar and caviar substitutes prepared from fish eggs	1604.11	- Fish, whole or in pieces, but not minced	-- Salmon
	1604.12		-- Herrings
	1604.13		-- Sardines, sardinella and brisling or sprats
	1604.14		-- Tunas, skipjack and bonito (*Sarda spp.*)
	1604.15		-- Mackerel
	1604.16		-- Anchovies
	1604.17		-- Eels
	1604.19		-- Other
	1604.20	- Other prepared or preserved fish	
16.05 Crustaceans, molluscs and other aquatic invertebrates, prepared or preserved	1605.10	- Crab	
	1605.21	- Shrimps and prawns	-- Not in airtight container
	1605.29		-- Other
	1605.30	- Lobster	
	1605.40	- Other crustaceans	
	1605.51	- Molluscs	-- Oysters
	1605.52		-- Scallops, including queen scallops

	1605.53		-- Mussels
	1605.54		-- Cuttle fish and squid
	1605.55		-- Octopus
	1605.56		-- Clams, cockles and arkshells
	1605.57		-- Abalone
	1605.58		-- Snails, other than sea snails
	1605.59		-- Other
	1605.61	- Other aquatic invertebrates	-- Sea cucumbers
	1605.62		-- Sea urchins
	1605.63		-- Jellyfish
	1605.69		-- Other
23.01 Flours, meals and pellets, of meat or meat offal, of fish or of crustaceans, molluscs or other aquatic invertebrates, unfit for human consumption; greaves	2301.20	- Flours, meals and pellets, of fish or of crustaceans, molluscs or other aquatic invertebrates	
25.01 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	2501.00		

III. Aquaculture sector

Product	HS-6 Product code	Product description	
		Classification	Sub-classification
03.02 Fish, fresh or chilled, excluding fish fillets and other fish meat of heading 03.04	0302.71	- Tilapias (*Oreochromis spp.*), catfish (*Pangasius spp.*, *Silurus spp.*, *Clarias spp.*, *Ictalurus spp.*), carp (*Cyprinus carpio*, *Carassius carassius*, *Ctenopharyngodon idellus*, *Hypophthalmichthys spp.*, *Cirrhinus spp.*, *Mylopharyngodon piceus*), eels (*Anguilla spp.*), Nile perch (*Lates niloticus*) and snakeheads (*Channa spp.*), excluding livers and roes	-- Tilapias (*Oreochromis spp.*)
03.03 Fish, frozen, excluding fish fillets and other fish meat of heading 03.04	0303.23	Tilapias (*Oreochromis spp.*), catfish (*Pangasius spp.*, *Silurus spp.*, *Clarias spp.*, *Ictalurus spp.*), carp (*Cyprinus carpio*, *Carassius carassius*, *Ctenopharyngodon idellus*, *Hypophthalmichthys spp.*, *Cirrhinus spp.*, *Mylopharyngodon piceus*), eels (*Anguilla spp.*), Nile perch (*Lates niloticus*) and snakeheads (*Channa spp.*), excluding livers and roes	-- Tilapias (*Oreochromis spp.*)
03.04 Fish fillets and other fish meat (whether or not minced), fresh, chilled or	0304.31	- Fresh or chilled fillets of tilapias (*Oreochromis spp.*), catfish (*Pangasius spp.*, *Silurus spp.*,	-- Tilapias (*Oreochromis spp.*)

frozen		*Clarias spp*., *Ictalurus spp*.), carp (*Cyprinus carpio*, *Carassius carassius*, *Ctenopharyngodon idellus*, *Hypophthalmichthys spp*., *Cirrhinus spp*., *Mylopharyngodon piceus*), eels (*Anguilla spp*.), Nile perch (*Lates niloticus*) and snakeheads (*Channa spp.*)	
	0304.93	- Other, frozen	-- Tilapias (*Oreochromis spp*.), catfish (*Pangasius spp*., *Silurus spp*., *Clarias spp*., *Ictalurus spp*.), carp (*Cyprinus carpio*, *Carassius carassius*, *Ctenopharyngodon idellus*, *Hypophthalmichthys spp*., *Cirrhinus spp*., *Mylopharyngodon piceus*), eels (*Anguilla spp*.), Nile perch (*Lates niloticus*) and snakeheads (*Channa spp.*)
03.05 Fish, dried, salted or in brine; smoked fish, whether or not cooked before or during the smoking process; flours, meals and pellets of fish, fit for human consumption	0305.44	- Smoked fish, including fillets, other than edible fish offal	-- Tilapias (*Oreochromis spp*.), catfish (*Pangasius spp*., *Silurus spp*., *Clarias spp*., *Ictalurus spp*.), carp (*Cyprinus carpio*, *Carassius carassius*, *Ctenopharyngodon idellus*, *Hypophthalmichthys spp*., *Cirrhinus spp*., *Mylopharyngodon piceus*), eels (*Anguilla spp*.), Nile perch (*Lates niloticus*) and snakeheads (*Channa spp.*)
03.06 Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; smoked crustaceans, whether in shell or not,	0306.16	- Frozen	-- Cold-water shrimps and prawns (*Pandalus spp.*, *Crangon crangon*)
	0306.17		-- Other shrimps and prawns
	0306.26	- Not frozen	-- Cold-water shrimps and prawns (*Pandalus spp.*, *Crangon crangon*)
	0306.27		-- Other shrimps and

whether or not cooked before or during the smoking process; crustaceans, in shell, cooked by steaming or by boiling in water, whether or not chilled, frozen, dried, salted or in brine; flours, meals and pellets of crustaceans, fit for human consumption			prawns

Appendix 2: Relevant international regulatory frameworks

Surprisingly, Belize is neither a Member nor an Observer of the United Nations World Tourism Organisation (UNWTO). In addition, and although there is no specific governing legislation for each sector presented in this document, all are generally and in practice, governed by default through or on voluntary or membership basis of various regional and international organizations, laws and regulations namely:

1. International trade treaties:
    a. World Trade Organization (WTO) and trade in goods and services related Uruguay Round Agreements (1994)
    b. The CARIFORUM-EU Economic Partnership Agreement (EPA) (2008)
    c. Founding Member of CARICOM and the Member of the Central American Integration System (SICA)
    d. Various free trade agreements (FTAs) 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 *The United Nations Convention on the Law of the Sea and Belize's Legal and Institutional Frameworks for Ocean Affairs* by UNCTAD-UNDOALOS (forthcoming 2019).
    a. Convention on the Law of the Sea (1982)
    b. The United Nations Fish Stocks Agreement (1995)
3. Fisheries agreements and regional bodies:
    a. Inter-American Tropical Tuna Commission (IATTC)
    b. Western Central Atlantic Fishery Commission (WECAFC)
    c. Indian Ocean Tuna Commission (IOTC)
    d. Latin American Organization for Fisheries Development (OLDEPESCA)
    e. Central American Fisheries and Aquaculture Organization (OSPESCA)
    f. Caribbean Regional Fisheries Mechanism (CRFM)
4. Environment:
    a. The Convention on Biological Diversity (CBD) (1992)
    b. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (1975)
    c. The Inter-American Convention for the Protection and Conservation of Sea Turtles (2001)
    d. The Ramsar Convention on Wetlands of International Importance (1971)
5. Instruments and soft law applicable to post harvesting and trade (Seafood Manufacturing sector):
    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)
6. Cultural heritage:
    a. The Convention concerning the Protection of the World Cultural and Natural Heritage (1972)

Appendix 3: Maritime and coastal tourism sector statistics: a wish-list

Access to the following statistics, ideally time series, will allow further refinement of the analysis presented in this document and fill remaining knowledge gaps on the maritime and coastal tourism segment:

- BFD: Earnings from licensing fees of sport fishing/other maritime-licensed activities
- BTB: Raw survey data underlying analysis published in BTB (2017)
- SIB: Granular employment statistics from Labour Force Survey (April 2018) (further disaggregation of item "Tourism" and geographical units)
- SIB: Granular enterprise statistics from Business Establishment Survey (2016) (further disaggregation of geographical units)
- SIB: National input-output/supply-use tables
- SIB/CBB: Granular balance of payments (BoP) statistics

Appendix 4: Country ISO alph-3 codes and corresponding UN official country names

ISO-alpha3 code	Official country Name
AUS	Australia
BEL	Belgium
BRA	Brazil
BRB	Barbados
CAN	Canada
DEU	Germany
ESP	Spain
GBR	United Kingdom
GTM	Guatemala
HKG	Hong Kong, Province of China
JAM	Jamaica
JPN	Japan
MEX	Mexico
SGP	Singapore
THA	Thailand
TTO	Trinidad and Tobago
USA	United States of America
VTN	Viet Nam

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Notes

[1] Scientific evidence i.e. "…as qualified by relevant environmental and economic factors, including the economic needs of coastal fishing communities and the special requirements of developing States, and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards, whether subregional, regional or global" (Article 61 (3) of UNCLOS, 1982).
[2] An exhaustive list of the products included in the analysis thereafter is provided in the Appendix 1. Product definitions are based on the 2012 version of the Harmonized system classification.
[3] See UNCTAD (2016). UNCTAD (2016). *Sustainable Fisheries: International Trade, Trade Policy and Regulatory Issues*.
[4] See Belize Fisheries Department (2017). Sea cucumber fishing season notice. Available at http://fisheries.gov.bz/wp-content/uploads/2017/03/Closure-Sea-Cucumber-Fishery-Press-Release-2017-1.pdf.
[5] See http://extwprlegs1.fao.org/docs/pdf/blz167539.pdf .
[6] Source: Belize's Trade policy review. WT/TPR/S/238 and WT/TPR/S/353.
[7] Source: Belize Fisheries Department (2018).
[8] See https://www.bhsfu.gov.bz/wp-content/uploads/2014/10/List-of-Active-Fishing-Vessels.pdf.
[9] See http://www.fisheries.gov.bz/2111-2/.
[10] See http://www.uberibz.org/single-post/2017/01/27/Sea-Cucumber-Mariculture-Grow-out.
[11] See https://belize.oceana.org/blog/petroleum-operations-maritime-zone-moratorium-act-2017.
[12] See https://caricom.org/media-center/communications/press-releases/statement-delivered-by-belize-minister-of-agriculture-fisheries-forestry-the-environment-sustainable-development-climate-change-dr.-omar-figueroa-to-the-united-nations-ocean-conference-6-june-2017-new-york.
[13] 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 Appendix 1. 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.
[14] See https://unctad.org/en/Pages/DITC/Trade-Analysis/Non-Tariff-Measures/NTMs-trains.aspx.
[15] See http://www.fao.org/jamaica-bahamas-and-belize/fao-in-jamaica-bahamas-and-belize/en/ for a full description of the project in progress.
[16] See http://www.wwfca.org/en/belize_aquaculture.cfm for a full report.
[17] See for a more detailed discussion "Sea cucumber aquaculture: Hatchery production, juvenile growth and industry challenges," available at

https://www.researchgate.net/publication/268746754_Sea_cucumber_aquaculture_Hatchery_production_juvenile_growth_and_industry_challenges.

[18] On March 23, 2018, Belize Aquaculture Limited (BAL), one of the largest shrimp farms in Belize, laid-off approximately 100 employees. downsizing has been justified by "a costly disease epidemic that is affecting the entire shrimp farming industry in Belize."

[19] Quantifying the importance of marine and coastal tourism in the national economy requires more granular data, not included in standard reporting frameworks.

[20] UNCTAD analysis on data Belize Tourism Board (BTB) available in: "Travel and Tourism Statistics Digest 2017". Note that these estimates are conservative, as they only include top 3 marine tourism spots.

[21] These conjectures can be verified by conducting input-output analysis on national supply-use tables.

[22] The following figures were calculated by UNCTAD using data from the Belize Tourism Board (BTB), as published in their annual report 2017. For more information, please see: BTB (2017).

[23] UNCTAD analysis on data Statistical Institute of Belize and Belize Tourism Board (BTB). Figures exclude cruise ships arrivals.

[24] For full analysis, please see section 5.2.1 "Contribution to GDP".

[25] Access to national input-output or supply-use tables will enable us to answer this type of questions.

[26] This figure differs from results of the last Business Establishment Survey conducted by the Statistical Insitute of Belize in 2016, according to which 55 per cent of sales of "Accomodation and Food Service" activities originate from exports. This may be due to the different sector perimeter used.

[27] See Note 17 above.

[28] This conjecture may be object of further assessment and be verified accessing more granular data.

[29] For further analysis of the national regulatory framework on tourism, see UNCLOS and Belize's legal and institutional framework for ocean affairs: Including Legal and Institutional Requirements for Sustainable Marine Fisheries, Sustainable Marine Aquaculture, Seafood Processing and Marine and Coastal Tourism (2018). Available at https://unctad.org/en/pages/MeetingDetails.aspx?meetingid=1949.