

# CRFM STATISTICS AND INFORMATION REPORT FOR 2016



# CRFM Statistics and Information Report –2016

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CRFM Secretariat  
Belize and St. Vincent and the Grenadines

# CRFM STATISTICS AND INFORMATION REPORT – 2016

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

<b>AC</b>	Aquaculture
<b>ACP</b>	African, Caribbean and Pacific states
<b>BOT</b>	British Overseas Territories
<b>CARICOM</b>	Caribbean Community
<b>CIA</b>	Central Intelligence Agency
<b>CRFM</b>	Caribbean Regional Fisheries Mechanism
<b>CWP</b>	Coordinating Working Party on Atlantic Fishery Statistics
<b>ECCB</b>	East Caribbean Central Bank
<b>EEZ</b>	Exclusive Economic Zone
<b>FAD</b>	Fish Aggregating Device
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FRP</b>	Fibreglass Reinforced Plastic
<b>GDP</b>	Gross Domestic Product
<b>GRFP</b>	Glass-fibre Reinforced Plastic
<b>GRP</b>	Glass Reinforced Plastic
<b>JICA</b>	Japan International Cooperation Agency
<b>LOA</b>	Length Overall
<b>MCF</b>	Marine Capture Fisheries
<b>OECS</b>	Organization of Eastern Caribbean States
<b>SIDS</b>	Small Islands Development States
<b>TCI</b>	Turks and Caicos Islands
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>US</b>	United States
<b>WECAFC</b>	Western Central Atlantic Fishery Commission
<b>WWAP</b>	World Water Assessment Programme



## INTRODUCTION

The mission of the CRFM is “to promote and facilitate the responsible utilization of the region's fisheries and other aquatic resources for the economic and social benefits of the current and future population of the region” (CARICOM Fisheries Unit, 2002). The members of the CRFM are: Anguilla, Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago and the Turks and Caicos Islands.

The fisheries of Member States are important foreign exchange earners and a primary contributor to income, employment, food security and social and economic stability, especially in coastal communities.

CRFM Member States are required to collect, manage and appropriately use scientific data and information to inform the fisheries management planning and decision-making process, and fulfil international reporting requirements. Thus, one of the main activities of the CRFM focuses on the enhancement of fisheries data collection systems in the participating Member States. Activities that have been undertaken to improve data collection systems and capabilities of Member States include: training, provision of computers, development of a fisheries database and technical support.

Although data collection systems have improved over the years, Member States still struggle with data collection issues mainly due to the challenge of limited human and financial resources available for data collection and management activities at the national levels. Notwithstanding the above-mentioned constraint, Member States continue to collect and compile the best available data and information for planning and decision-making. It is in this context that the CRFM Statistics and Information Report has been compiled with the aim of providing, at the regional level, an information source for its Member States and other stakeholders to access the most up to date fisheries statistical information that are available from the CRFM Member States. It is hoped that the publication will provide Member States and stakeholders with a regional picture of the fishing fleet, fish production, number of fishers and employment in the sector and the economic importance of the fishery sector of the CRFM region.

This publication is primarily an update of the *CRFM Statistics and Information Report –2014* (Masters, 2013) with data for 2015 to 2016. In cases where data for 2015 and 2016 were not available at the time of publication, these data will be updated in subsequent publications.

## METHODOLOGY

Data were collected from the Fisheries Divisions / Departments, the Statistical Departments and other relevant authorities in the CRFM Member States as well as the national reports of the Member States submitted to the CRFM Secretariat. Where it was not possible to collect data from the primary sources, or where data gaps existed, literature searches were conducted and data and information obtained from sources, such as publications by the FAO, project documents, industry magazines, or statistical publications.

## CHAPTER 1: THE FISHERIES RESOURCES OF THE CRFM REGION

### 1.1 Land area, coastline, continental shelf area and EEZ of CRFM Member States

The Member States of the CRFM are 14 sovereign Small Island Developing States (SIDS) and three British Overseas Territories (BOT) (Table 1). Most Member States have exclusive economic zones (EEZs) many times the land area (Table 2). The combined land area of CRFM Member States is 433,549 km<sup>2</sup> whereas the area of the combined EEZ is 2,046,948 km<sup>2</sup>. Some Member States are still negotiating delimitation issues with neighbouring States.

*Table 1: CRFM Member States and their affiliations*

INDEPENDENT COUNTRIES	OVERSEAS TERRITORIES
1. Antigua and Barbuda (SIDS, CARICOM, OECS)	Anguilla (OECS Associate Member, CARICOM Associate Member)
2. Bahamas (The) (SIDS, CARICOM)	Montserrat (CARICOM, OECS)
3. Barbados (SIDS, CARICOM)	Turks and Caicos Islands (CARICOM Associate Member)
4. Belize (SIDS, CARICOM)	
5. Dominica (SIDS, CARICOM, OECS)	
6. Grenada (SIDS, CARICOM, OECS)	
7. Guyana (SIDS, CARICOM)	
8. Haiti (SIDS, CARICOM)	
9. Jamaica (SIDS, CARICOM)	
10. St. Kitts and Nevis (SIDS, CARICOM, OECS)	
11. St. Lucia (SIDS, CARICOM, OECS)	
12. St. Vincent and the Grenadines (SIDS, CARICOM, OECS)	
13. Suriname (SIDS, CARICOM)	
14. Trinidad and Tobago (SIDS, CARICOM)	

**Table 2: Land area, coast line, continental shelf area and EEZ of CRFM Member States**

Member State	Land area (km <sup>2</sup> )*	Coastline (km)*	Continental shelf area (km <sup>2</sup> )**	EEZ (km <sup>2</sup> )**
Anguilla	91	61	2 109	92 178
Antigua and Barbuda	443	153	3 710	107 914
Bahamas	10 010	3 542	108 265	629 293
Barbados	430	97	407	186 107
Belize	22 806	386	9 431	35 995
Dominica	751	148	286	28 626
Grenada	344	121	2 292	26 158
Guyana	196 849	459	51 978	135 900
Haiti	27 560	1 771	5 082	112 025
Jamaica	10 831	1 022	13 401	263 283
Montserrat	102	40	145	7 582
St. Kitts and Nevis	261	135	788	10 201
St. Lucia	606	158	811	15 484
St. Vincent and the Grenadines	389	84	2 082	36 314
Suriname	156 000	386	55 700	128 318
Trinidad and Tobago	5 128	362	21 136	77 502
Turks and Caicos Island	948	389	7 395	154 068
<b>Totals</b>	<b>433 549</b>	<b>9 314</b>	<b>285 018</b>	<b>2 046 948</b>

Source: (\*) Central Intelligence Agency; accessed 7 March 2012.

(\*\*) Sea Around Us. (2009).

## 1.2 Categories of fishery resources of the CRFM Member States

The fisheries resources of the CRFM Member States can be found in:

- Inland waters<sup>1</sup> and /or freshwater systems<sup>2</sup> (rivers, ponds, lakes, etc.)
- Aquaculture<sup>3</sup> systems (systems used for farming aquatic animals)
- Marine waters<sup>4</sup> (including the territorial sea, EEZ and high seas)

<sup>1</sup> Inland waters; may be used to refer to lakes, rivers, brooks, streams, ponds, inland canals, dams, and other land-locked (usually freshwater) waters (FAO, 2002-2013).

<sup>2</sup> Freshwater ecosystems include lakes, rivers, ponds, streams, groundwater, springs, cave waters, floodplains, as well as bogs, marshes and swamps, which are traditionally grouped as inland wetlands (UNESCO, 1995 – 2012).

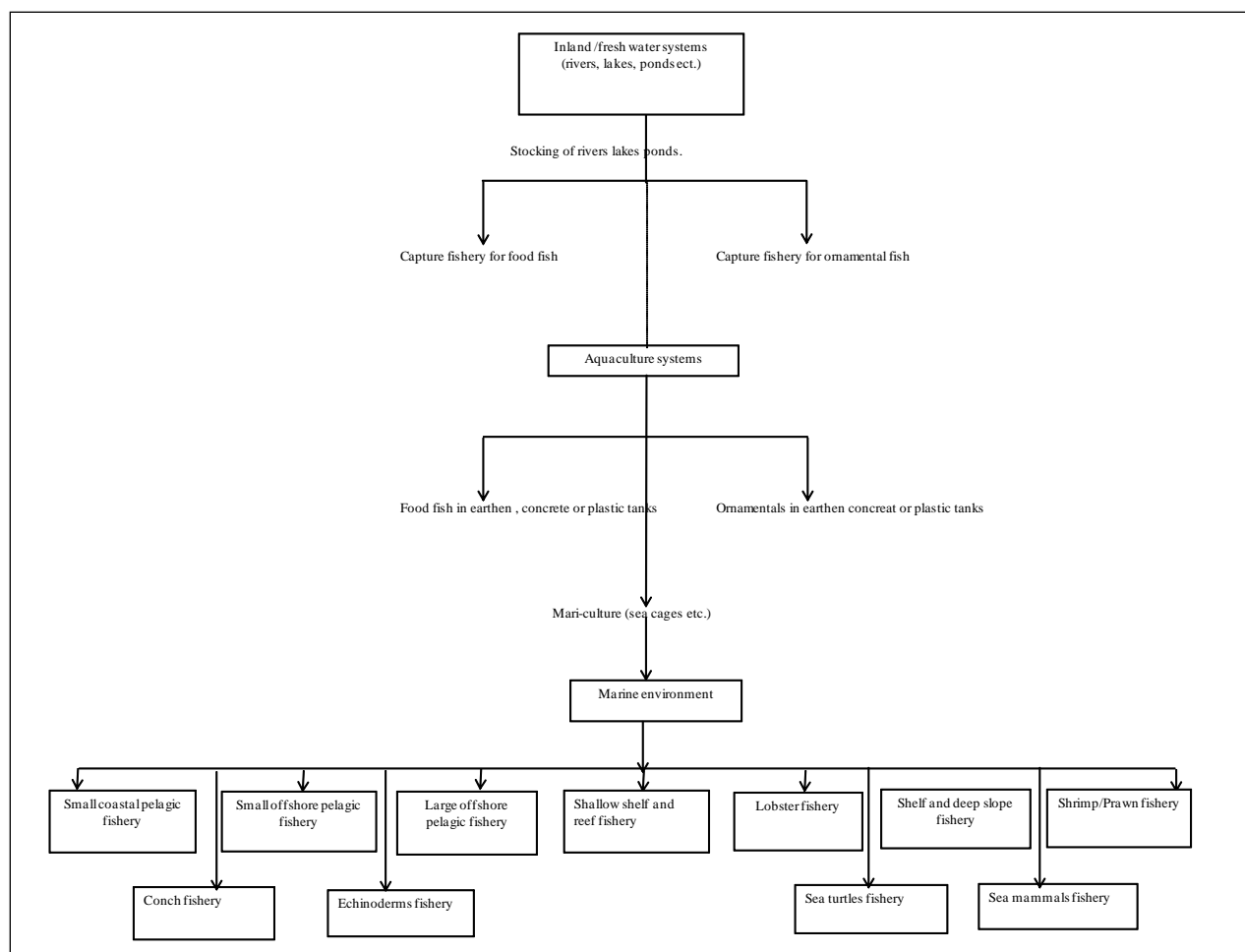
<sup>3</sup> The definition used for aquaculture in this paper is after FAO (2012b) and is understood to mean the farming of aquatic organisms including fish, molluscs, crustaceans and aquatic plants. Farming implies some form of intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predators, etc. Farming also implies individual or corporate ownership of the stock being cultivated. For statistical purposes, aquatic organisms which are harvested by an individual or corporate body which has owned them throughout their rearing period contribute to aquaculture while aquatic organisms which are exploitable by the public as a common property resource, with or without appropriate licences, are the harvest of fisheries.

<sup>4</sup> Marine waters; refers to oceans and seas including adjacent saltwater areas (FAO, 2002-2013).

All the independent CRFM Member States are SIDS and are characterised by highly integrated ecosystems and sub-ecosystems linked to the marine environment. So too are the overseas territories which are not recognized as SIDS, but share many common features of SIDS. The aquaculture systems depend on the inland and freshwater systems and the marine environment for water supply, and in turn the marine environment is susceptible to changes and activities in the aquaculture, inland and freshwater systems. Figure 1 provides a schematic representation of the linkages and sub-sectors of the fisheries sector of the CRFM Member States.

#### 1.2.1 Fisheries of the inland waters and or freshwater systems of CRFM Member States

Information and data on the fisheries resources of the inland and freshwater systems of the region were limited, as most Member States do not collect data from this sub-sector. There is also a great need for research in this sub-sector. However, the information that was available indicated that the exploitation of the fisheries resources of inland waters or freshwater systems of most of the CRFM Member States was important at the subsistence and/or cultural level. Eleven Member States indicated that the fisheries of the inland waters and fresh water systems (even in cases where the fishery did not produce large economic gains) were of importance to the cultural life of the country and / or played an important role at the subsistence level by providing protein to the local population (Table 3). With regards to economic gain from the fishery, eight Member States: Belize, Dominica, Guyana, Haiti, Jamaica, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago, had important economic activities and earnings from this sub-sector. Haiti and Suriname were the only Member States with an estimate of the amount of fish produced from inland waters and freshwater systems, which stood at approximately 600 mt for Haiti (2009 estimate) and 650 mt for Suriname (2014 estimate).



**Figure 1: Linkages between and sub-sectors of the inland/fresh water systems, aquaculture systems and marine waters of CRFM Member States**

**Table 3: Status, cultural and or subsistence importance, economic importance and latest estimate of catch of the fisheries of inland waters /freshwater systems of CREFM Member States**

Member State	Status of the fisheries of inland waters / freshwater systems	Fisheries of inland waters / freshwater systems are of cultural and / or subsistence importance	Fisheries of inland waters / freshwater systems are of economic importance	Estimate of catch from inland waters / freshwater systems
<b>Anguilla</b>	There are no rivers in Anguilla, and a significant portion of the naturally occurring fresh water is tapped through well systems. Fishing is not occurring in the inland waters / freshwater systems of Anguilla.	No	No	0
<b>Antigua and Barbuda</b>	Traditional harvest of some freshwater and estuarine species at the subsistence level or for recreational purposes occurs in Antigua and Barbuda. The resources harvested include mullets, tarpons and tilapia (FAO, 2007b).	Yes	No	NA
<b>Bahamas</b>	There are no true rivers or streams on the Islands of The Bahamas. Inland water bodies are, in most instances, places where the water table is at or near the same level as the land surface (US Army Corps of Engineers, 2004). Fishing is not occurring in the inland waters / freshwater systems of The Bahamas.	No	No	0
<b>Barbados</b>	The permanent and temporary freshwater catchments of Barbados serve as habitat for species of freshwater shrimps (Simmons & Associates, Inc. 2000), however no known commercial fishing activities occur in these freshwater catchment areas (Fisheries Division Barbados, 2014).	No	No	0
<b>Belize</b>	The inland freshwater fisheries activities are primarily subsistence in nature. The species targeted include: the Baysnook ( <i>Petenia splendida</i> ), the Mayan cichlid locally called crana ( <i>Cichlosomas urophthalmus</i> ) and the tilapia ( <i>Oreochromis niloticus</i> ). The tarpon ( <i>Megalops atlanticus</i> ), two species of catfish ( <i>Ictalurus furcatus</i> and <i>Ictalurus</i> spp.) and the freshwater turtle or hicatee ( <i>Dermatemys mawii</i> ) are also important species in the fishery (Gillett and Myvette, 2008).	Yes	Yes	NA
<b>Dominica</b>	The traditional catching of goby fry (locally called <i>tetiri</i> ) caught at river estuaries, is of some economic importance to some villages in Dominica (particularly the western village of Layou) (FAO, 2004 - 2013a).	Yes	Yes	NA
<b>Grenada</b>	Inland fishery is restricted to harvesting of freshwater crawfish and a half dozen species of finfish within small streams, carried out solely on a subsistence basis. Though contribution from this activity is very minuscule when compared to marine fishery, several rural families depend on this resource for the supply of valuable protein (FAO, 2007a).	Yes	No	NA

Member State	Status of the fisheries of inland waters / freshwater systems	Fisheries of inland waters / freshwater systems are of cultural and / or subsistence importance	Fisheries of inland waters / freshwater systems are of economic importance	Estimate of catch from inland waters / freshwater systems
<b>Guyana</b>	Freshwater fishing is conducted in rivers, creeks, lakes, reservoirs, canals, and in savannah areas. The data available indicate that most inland fishing is carried out by Amerindians. At present, the effort is largely directed at subsistence fishing, although a few fishermen participate in small-scale commercial fisheries (FAO, 2005b).	Yes	Yes	NA
<b>Haiti</b>	Lakes in Haiti are fished extensively. For example, the Lake Azuei, also known as Etang Saumatre, (which is the largest lake in Haiti; 22,000 acres), has ~ 3000 people living around the lake. For about 60% of this population, the sole source of income is fishing (Hargreaves, 2011).	Yes	Yes	600 mt (2009 est.)
<b>Jamaica</b>	Most of the main rivers of Jamaica (there are about 22 main rivers) are fished by the local population. Community watershed ponds and rivers were stocked with <i>Tilapia mossambica</i> (FAO, 2005 - 2014) and a riverine fishery for the species now exists in Jamaica. Fresh water crayfish and shrimp and mullets are also harvested.	Yes	Yes	NA
<b>Montserrat</b>	There is a traditional fishery in the rivers for crayfish and small lobsters. Tilapia are also fished from freshwater ponds (Department of Fisheries Montserrat, 2012*).	Yes	No	NA
<b>St. Kitts and Nevis</b>	Recently in Nevis the ponds and lagoons have become a source for fishing, targeting tilapia and mullets. (Department of Marine Resources, St. Kitts and Nevis, 2012*).	No	No	NA
<b>St. Lucia</b>	There is little information about the freshwater fish species of St. Lucia and therefore research in this regard is needed. Thirteen species of freshwater shrimp have been recorded for St. Lucia and there existed a freshwater shrimp fishery up to 1994 when a moratorium was implemented (Department of Fisheries, St. Lucia, 2012*).	No	No	0
<b>St. Vincent and the Grenadines</b>	The traditional catching of Goby fry (locally called Tri-tri) caught at river mouths and estuaries, is of economic importance to St. Vincent and the Grenadines. (Fisheries Division St. Vincent and the Grenadines, 2012*).	Yes	Yes	NA
<b>Suriname</b>	The inland waters of rivers, estuaries and swamps support a substantial inland waters fishery. The main gears used are driftnets, Chinese seines, seines (locally called river seine) and gillnets (locally called lagoon gillnet) (JICA & IC Net, 2012). In 2014; 650	Yes	Yes	650 mt (2014)

Member State	Status of the fisheries of inland waters / freshwater systems	Fisheries of inland waters / freshwater systems are of cultural and / or subsistence importance	Fisheries of inland waters / freshwater systems are of economic importance	Estimate of catch from inland waters / freshwater systems
	mt of fish were captured from the freshwater systems of Suriname (Department of Fisheries Suriname, 2016*).			
<b>Trinidad and Tobago</b>	Exploitation of fish and decapods occurs in the rivers and streams of Trinidad and Tobago but largely on a subsistence level, except for the tetra fish <i>Hypostomus robinii</i> . The amount taken is not quantified by regulatory agencies. Tetra fishing is for the aquarium trade (Alkins-Koo <i>et al.</i> 2003).	Yes	Yes	NA
<b>Turks and Caicos Islands</b>	No known systematic commercial fishing activity is occurring in the inland/freshwater systems of the Turks and Caicos Islands	No	No	0

NA = Not Available

\* Information obtained directly from the Fisheries Authority of the Member State.

### 1.2.2 Fisheries of the aquaculture systems of CRFM Member States

During 2015 and 2016 most of the CRFM Member States (as was the case in 2013 and 2014), did not produce fish via aquaculture activities. Belize and Jamaica have been the top CRFM producers for a number of years, producing an average 6,662 mt and 767 mt respectively for the period 2013 to 2014. However, in 2015, Haiti produced 2,600 mt of fish from aquaculture which was the second highest production, and in 2016 Haiti's production was 6,400 mt, which was the highest production for that year. Belize produced an estimated 4,753 mt in 2015 but production fell to 1,109 mt in 2016. Aquaculture production in Belize decreased due to an outbreak of Early Mortality Syndrome (EMS) - which is caused by a strain of bacteria called *Vibrio Parahaemolyticus*, that had caused substantial losses in cultured shrimps the previous year (Gov. of Belize, 2017). Guyana, St. Lucia and Trinidad and Tobago continue to make strides towards increased production.

Table 4 and Table 5 provide overviews of the status of aquaculture in CRFM Member States as at 2015 / 2016.



**Table 4: Status of aquaculture in CRFM Member States as at 2015 / 2016**

Member States	Status of aquaculture as at 2015 - 2016	References / Sources
<b>Anguilla</b>	One small aquaponics farm was established during the period (a small freshwater tilapia pool, with 250 fish). The operation is being run on a trial basis. There was no sale from the plants or fish.	Personal communication Gumbs / Masters, 2015
<b>Antigua and Barbuda</b>	During the period the seamoss ( <i>Eucheuma</i> and <i>Gracilaria</i> spp.) and tilapia were cultured in small quantities (mostly in aquaponics - backyard operations of tilapia and vegetables). However, there was one aquaponics establishment (tilapia with lettuce) that was in operating on a relatively larger scale.	Personal communication Simon / Masters, 2015
<b>The Bahamas</b>	Aquaculture fish production was negligible as most of the facilities were still in the start-up phase. As of 2015, there were seven permitted aquaculture establishments and 22 species permitted for aquaculture in The Bahamas. However, production is insignificant with most of the limited aquaculture production at present coming from aquaponics farms, which generate more income from the vegetable production activities than from fish culture.	FAO, 2016
<b>Barbados</b>	Persons have expressed interest in aquaculture and some persons have set up backyard ponds for the culturing of tilapia. However, aquaculture activities are still in the planning stages.	Personal communication Willoughby / Masters, 2014
<b>Belize</b>	Shrimp production figures indicate a substantial drop in white shrimp production in the year 2015 and 2016. This was as a result of the occurrence of a shrimp disease (Early Mortality Syndrome - EMS) which caused production losses.	Sosa, 2017
<b>Dominica</b>	Aquaculture infrastructure was damaged as a result of heavy rainfall and flooding over the period 2011 - 2014. The industry has not yet recovered and aquaculture production during the period 2015 - 2016 was insignificant.	Personal communication Guiste / Masters, 2012 & Norris / Masters, 2015
<b>Grenada</b>	During the period 2015-2016 Grenada continued to focus on increasing the number of seamoss ( <i>Eucheuma isiforme</i> and <i>E. cottonii</i> ) aquaculturalists. The seed stock of <i>Eucheuma isiforme</i> and <i>E. cottonii</i> were sourced in Venezuela. The backyard ornamental / tilapia facilities have folded, in favour of aquaponics.	Personal communication Isaac / Masters, 2018
<b>Guyana</b>	The 2015 - 2016 aquaculture production of Guyana showed an increase over the 2014 - 2015 production. Tambaqui ( <i>Colossoma macropomun</i> ) had the highest production.	See Table 5
<b>Haiti</b>	Aquaculture production increases from 560 mt in 2013/2014 to 6,400 mt in 2016.	Fisheries Department Haiti, 2017
<b>Jamaica</b>	Aquaculture production in Jamaica continues to be under 1000 mt. Overall aquaculture production stood at 927.4 mt in 2016. In 2010 production stood at 3900 mt. The downturn in production can be attributed to high cost of production and competition from cheaper imported fish, which were exacerbated by the global financial crisis of 2007-2008, as well as change in production practices with several of the large farms changing from intensive culture systems, in which aerators were used, to predominantly semi-intensive and extensive culture systems. This change in production practices is a direct consequence of the high energy cost, the absence of suitable, low-cost feed inputs, poor quality brood stocks, and the inability of the local producers to compete with cheap imported substitutes in both local and export markets. In addition, rather than producing two crops per year, some farmers have resorted to producing a single crop per year based on market demand.	Government of Jamaica, Ministry Paper 50 / 2014.

<b>Member States</b>	<b>Status of aquaculture as at 2015 - 2016</b>	<b>References / Sources</b>
<b>Montserrat</b>	No aquaculture activity took place in Montserrat during the period.	Personal communication Ponteen / Masters, 2016
<b>St. Kitts and Nevis</b>	Two aquaculture projects were in operation; one in St. Kitts and one in Nevis. The projects are operating at the subsistence level, producing tilapia in ponds using seawater.	Personal communication Browne / Masters, 2018
<b>St. Lucia</b>	In 2016 there were 88 fish ponds (32 in 2014) and 55 shrimp ponds (27 in 2014) under production throughout the island, with ponds covering a total of 17.96 hectares of land. In 2016, 84,000 fish fingerling and 980,000 post larval shrimps were produced and the total annual production for aquaculture fish and shrimp in 2016 was 27.2 metric tons. Sea moss ( <i>Gracilaria</i> spp.) production also occurs in the country. In 2015 61 persons were involved in sea-moss production.	Fisheries Division, 2016
<b>St. Vincent and the Grenadines</b>	No aquaculture activity took place in St. Vincent and the Grenadines during the period.	Fisheries Division St. Vincent and the Grenadines, 2017
<b>Suriname</b>	In 2015 there were 82.9 hectares of fish ponds/tanks and 28.8 hectares of shrimp ponds/tanks in Suriname. Production increased from about 80 mt in 2013/2014 to 122.17 mt in 2015.	Fisheries Division Suriname, 2016
<b>Trinidad and Tobago</b>	There were 31 registered producers of food fish plus five hatchery operators in Trinidad and Tobago in 2016. There are also approximately 80 persons, who are not yet at the commercial level and can be regarded as subsistence level producers, were involved in aquaculture. Overall most of the operations can still be regarded as small scale and approximately 200 persons were directly employed in the sector in 2016.	Fisheries Division Trinidad and Tobago 2017
<b>Turks and Caicos Islands</b>	Aquaculture activities ceased with the closure of the Turks and Caicos Islands conch farm, in August 2012.	Personal communication Clerveaux / Masters, 2014

**Table 5: Overview of species produced, total annual aquaculture production (meat weight in mt) and value (US\$) of aquaculture in CRFM Member States for the period 2015 - 2016**

Member States	Species cultivated 2015 - 2016	Production (mt) 2015	Value of aquaculture product 2015 (US\$)	Production (mt) 2016P	Value of aquaculture product 2016(US\$) P	Reference /Source
Anguilla	Tilapia (in aquaponics)	NA	NA	NA	NA	
Antigua and Barbuda	Sea moss ( <i>Eucheuma</i> spp. and <i>Gracilaria</i> spp.) tilapia and shrimp	NA	NA	NA	NA	
Bahamas	None	--	--	--	--	
Barbados	None	--	--	--	--	
Belize	Whiteleg shrimp ( <i>Litopenaeus vannamei</i> )	4 211.0	29 836 100.7	662.6	6 341 311.2	Fisheries Department Belize, 2015
	Tilapia hybrids ( <i>Oreochromis niloticus</i> )	500.0	460 856.0	400.0	312 026.3	
	Cobia ( <i>Rachycentron canadum</i> )	0	0	0	0	The Statistical Institute of Belize 2016
	Tilapia (small-scale aquaculture /backyard farms)	40.9	37 661.2	46.2	36 054.6	
<b>BELIZE TOTAL</b>		<b>4 751.9</b>	<b>30 334 617.9</b>	<b>1 108.8</b>	<b>6 689 392.1</b>	
Dominica	Asian freshwater prawn ( <i>Macrobrachium rosenbergii</i> )	NA	NA	NA	NA	
	Nile tilapia ( <i>Oreochromis niloticus</i> )	NA	NA	NA	NA	
	Sea moss known as GT ( <i>Gracilaria</i> spp.)	NA	NA	NA	NA	
<b>DOMINICA TOTAL</b>		NA	NA	NA	NA	
Grenada	Sea moss <i>Eucheama isiforme</i> and <i>E. cottonii</i> and tilapia (in very small quantities)	NA	NA	NA	NA	
Guyana	Red tilapia ( <i>Oreochromis</i> spp.),	88.0	225 892.2	69.0	135 125.1	Fisheries Division Guyana, 2017
	Black shrimp ( <i>Penaeus</i> spp.),	69.4	281 185.6	69.1	212 904.3	
	Tambaqui ( <i>Colossoma macropomun</i> ),	196.0	754 561.5	301.8	817 959.3	
	Brown hoplo locally called hassar ( <i>Hoplosternum littorale</i> ),	14.1	70 400.0	12.4	71 415.0	
	Mullet ( <i>Mugil cephalus</i> ),	26.5	32 441.6	8.1	4 239.0	
	Queriman ( <i>Mugil liza</i> ),	19.9	24 291.4	7.5	3 914.5	
	Flathead catfish locally called bashaw ( <i>Pylodictis olivaris</i> )	3.8	1 413.1	2.2	466.2	
<b>GUYANA TOTAL</b>		<b>417.6</b>	<b>1 390 185.4</b>	<b>470.1</b>	<b>1 246 023.5</b>	
Haiti <sup>5</sup>	Pangasius Tilapia	2 600	13 756 856.4	6 400	33 863 031.1	Fisheries Department Haiti 2017 (production)

<sup>5</sup> Productions by species were not available. Value was calculated using the price of tilapia US\$2.40 (Webster, D. 2012).

Member States	Species cultivated 2015 - 2016	Production (mt) 2015	Value of aquaculture product 2015 (US\$)	Production (mt) 2016P	Value of aquaculture product 2016(US\$) P	Reference /Source
	Claria Carp					
<b>HAITI TOTAL</b>		<b>2 600</b>	<b>13 756 856.4</b>	<b>6 400</b>	<b>33 863 031.1</b>	
<b>Jamaica</b>	Tilapia hybrids ( <i>O. niloticus</i> )	645.8	2 846 718.0	922.4	3 800 901.9	Aquaculture Branch Fisheries Division Jamaica, 2017
	White leg shrimp ( <i>Penaeus vannamei</i> ) and Carps ( <i>Cyprinus carpio</i> )	0	0	0	0	
	Basa ( <i>Pangasius hypophthalmus</i> )	0	0	5	8 568.5	
<b>JAMAICA TOTAL</b>		<b>645.8</b>	<b>2 846 718.0</b>	<b>927.4</b>	<b>3 809 470.4</b>	
<b>Montserrat</b>	None	--	--	--	--	
<b>St. Kitts and Nevis</b>	None	--	--	--	--	
<b>St. Lucia</b>	Tilapia, ( <i>O. mossambicus</i> , <i>O. niloticus</i> / <i>Tilapia nilotica</i> )	13.3	86 696.3	15.3	99 427	Data unit of the Department of Fisheries St. Lucia, 2017
	Shrimp ( <i>Macrobrachium rosenbergii</i> )	10.5	192 500	11.879	197 904	
	Sea moss ( <i>Gracilaria</i> spp.) <sup>6</sup>	2.2	26 388.9	0	0	
<b>ST. LUCIA TOTAL</b>		<b>23.8</b>	<b>279 196.3</b>	<b>27.2</b>	<b>297 331</b>	
<b>St. Vincent and the Grenadines</b>	None	--	--	--	--	
<b>Suriname</b>	Tilapia ( <i>O. mossambicus</i> , <i>O. aureus</i> )	1.7	8 432			Department of Fisheries Suriname, 2017
	Brown hoplo locally called kwi-kwi ( <i>Hoplosternum littorale</i> )					
	Tambaqui ( <i>Colossoma macropomum</i> )	51.47	250 144.2			
	Whiteleg shrimp ( <i>Litopenaeus vannamei</i> )	69	618 240			
<b>SURINAME TOTAL</b>		<b>122.17</b>	<b>876 816.2</b>	<b>122.17*</b>	<b>876 816.2*</b>	
<b>Trinidad and Tobago</b>	Tilapia (red hybrid tilapia)	21.8	51 012	9	21 060	Fisheries Division Trinidad and Tobago, 2017
	Brown hoplo locally called cascadu (ra) ( <i>Hoplosternum littorale</i> )	2	6 000	2	16 000	
	Giant river prawn ( <i>Macrobrachium rosenbergii</i> )	0.25	875	0	0	
<b>TRINIDAD AND TOBAGO TOTAL</b>		<b>24.05</b>	<b>57 887</b>	<b>11</b>	<b>37 060</b>	

<sup>6</sup> Sea moss not included in totals

Member States	Species cultivated 2015 - 2016	Production (mt) 2015	Value of aquaculture product 2015 (US\$)	Production (mt) 2016P	Value of aquaculture product 2016(US\$) P	Reference /Source
Turks and Caicos Islands	Queen conch ( <i>Strombus gigas</i> )	0	0	0	0	
<b>FISH TOTALS ALL MEMBER STATES</b>		<b>8 585.3</b>	<b>49 542 277.2</b>	<b>9 066.6</b>	<b>46 819 124.2</b>	

*P = Provisional*

*NA=Not Available*

*1kg= 2.20462 lbs*

*\*2015 estimates as the 2016 estimates were not available.*

### 1.2.3 Fisheries of the marine waters of CRFM Member States

All CRFM Member States exploit the fisheries resources found in the territorial sea and in the archipelagic waters (of an archipelagic State), as well as parts of the sea that are included in the exclusive economic zone of that State. Belize, St. Kitts and Nevis and St. Vincent and the Grenadines also exploit the high seas via the operation of open registries.

The fishing fleets and fishing gears used to exploit the marine fisheries are mostly artisanal in nature.

The fleet consists of:

1. Traditional fishing vessels: such as canoes - made using the traditional method of *digging out* the trunk of a tree, or planked canoes - which are usually small un-decked boats less than 6 m in length, usually powered by oars and/or sails, however small outboard engines could be used as well.
2. Larger canoes or pirogue type vessels: usually made with glass reinforced plastic (GRP - fibreglass). These could be decked or un-decked and are usually between 6 m to 12 m in length. These vessels are usually powered by outboard engines. However, oars and sails are used as well.
3. Longliners or trawlers; usually greater than 12 m in length, some with steel hulls. Generally they are large covered vessels.

The gears utilized include the Antillean “Z” or “S” traps (commonly called fish pots or fish traps), hand and trolling lines, cast nets, gill nets, hoop nets, spears, spear guns, lobster hook, lobster traps, pelagic longline gear, Chinese seines, and beach seines. Casitas and fish aggregating devices (FADs) are also used in the region. Diving gears (including compressors and SCUBA tanks) are also used in the capture of fish.

The region’s marine fisheries have been grouped according to habitat and the following categories of fisheries have traditionally been acknowledged by the CRFM region: small coastal pelagic fishery, small offshore pelagic fishery, large offshore pelagic fishery, shallow shelf and reef finfish fishery, shallow shelf and reef lobster fishery, shelf and deep slope fishery, shrimp fishery, conch fishery, echinoderms fishery (locally called the sea urchin or sea cucumber fishery), sea turtle fishery and fishery for sea mammals. A brief description of the fisheries categories and the main families or species of interest in the region can be found in Table 6. The number of Member States exploiting each fishery can be seen in Table 7.

The fisheries are exploited by various sectors of the society, and these include the following:

1. Citizens or authorized persons who exploit the fisheries as their primary source of income - commercial exploitation or commercial capture fisheries.
2. Citizens or authorized persons who exploit the fisheries as a recreational activity - recreational exploitation or recreational fisheries.
3. Citizens or authorized persons who exploit the fisheries under sporting activities - sports fisheries.
4. Citizens or authorized persons who exploit the fisheries as a primary source of protein for dependents - subsistence fisheries.

**Table 6: Fishery category and the habitat to which the category is linked, description of the category and some of the main families or species of interest in the CRFM region**

Habitat	Fishery category	Description	Some of the main families or species of interest in the CRFM region
Pelagic waters	Small coastal pelagic fishery	Small fish (generally silvery in appearance) living in the water column directly above continental shelves near the shoreline (coastal waters)	Jacks (Carangidae) Herring (Clupeidae) Silverside (Atherinidae) Anchovy (Engraulidae) Ballyhoo ( <i>Hemiramphus</i> spp.) Scads ( <i>Decapterus</i> spp.) Four winged flyingfish ( <i>Hirundichthys affinis</i> )
	Small offshore pelagic	Medium sized fish (generally tuna and tuna like species) living in the open waters of the oceans (moving between coastal and oceanic waters)	Blackfin tuna ( <i>Thunnus atlanticus</i> ) Cero mackerel ( <i>Scomberomorus regalis</i> ) Dolphinfish ( <i>Coryphaena hippurus</i> ) Wahoo ( <i>Acanthocybium solandri</i> ) Frigate tuna ( <i>Auxis thazard thazard</i> ) Bullet tunas ( <i>Auxis rochei</i> ) King mackerel ( <i>Scomberomorus cavalla</i> ) Little tunny ( <i>Euthynnus alletteratus</i> ) Serra Spanish mackerel ( <i>Scomberomorus brasiliensis</i> )
	Large offshore pelagic	Large, fast-swimming, highly migratory fish species living in the deep open waters of the oceans (oceanic waters)	Albacore ( <i>Thunnus alalunga</i> ) Blue marlin ( <i>Makaira nigricans</i> ) Atlantic bonito ( <i>Sarda sarda</i> ) Atlantic sailfish ( <i>Istiophorus albicans</i> ) White marlin ( <i>Tetrapturus albidus</i> ) Bigeye tuna ( <i>Thunnus obesus</i> ) Black marlin ( <i>Makaira indica</i> ) Longbill spearfish ( <i>Tetrapturus pfluegeri</i> ) Northern bluefin tuna ( <i>Thunnus thynnus thynnus</i> ) Skipjack tuna ( <i>Katsuwonus pelamis</i> ) Swordfish ( <i>Xiphias gladius</i> ) Yellowfin tuna ( <i>Thunnus albacares</i> )
Coral reefs	Shallow shelf and reef finfish fishery	Species living on or over coral reefs or associated with coral reefs	Parrotfishes (Scaridae) Squirrelfishes (Holocentridae) Grunts (Pamadosyidae), Surgeonfishes (Acanthuridae), Triggerfish (Balistidae) The Serranidae family (particularly hinds, sea-basses, and small groupers), Snappers (Lutjanidae)
	Shallow shelf and reef lobster fishery	Lobsters are large marine crustaceans with hard exoskeletons. The species targeted in the region generally live in crevices on coral reefs and are specifically targeted or captured as a part of the reef fisheries	Caribbean spiny lobster ( <i>Panulirus argus</i> ) Spotted spiny lobster ( <i>Panulirus guttatus</i> ) Sculptured slipper lobster ( <i>Parribacus antarcticus</i> ) Spanish slipper lobster ( <i>Scyllarides aequinoctialis</i> )
Continental slope (The outer reaches of the continental shelf)	Shelf and deep slope fishery	The main targets of this fishery are deep water snappers and groupers	Silk snapper ( <i>Lutjanus vivanus</i> ) Queen snapper ( <i>Etelis oculatus</i> ) Jewfish ( <i>Epinephelus itajara</i> ) Red hinds ( <i>Epinephelus guttatus</i> )

Habitat	Fishery category	Description	Some of the main families or species of interest in the CRFM region
to the continental drop-off point			Nassau grouper ( <i>Epinephelus striatus</i> )
Seafloor habitat – soft substrate demersal	Shrimp fishery	Shrimp are stalk-eyed swimming crustaceans with long narrow muscular abdomens (called tails). Most of the commercially valuable shrimps in the region are from the family Penaeidae	Atlantic seabob ( <i>Xiphopenaeus kroyeri</i> ) Southern white shrimp ( <i>Litopenaeus schmitti</i> ) Southern brown shrimp ( <i>Farfantepenaeus subtilis</i> ) Southern pink shrimp ( <i>Farfantepenaeus notialis</i> ) Redspotted shrimp ( <i>Farfantepenaeus brasiliensis</i> )
Seafloor habitat – soft substrate demersal (sand or mud near seagrass beds)	Conch fishery	Fishery specifically for the gastropods from the family Strombidae	Queen conch ( <i>Strombus gigas</i> )
Seafloor habitat – soft substrate demersal. Beds of seagrass ( <i>Thalassia</i> spp.), sand or mangroves, but could also be in the cervices of reefs.	Echinoderms fishery (locally called sea urchin or sea cucumber fishery)	The white sea urchin and the sea cucumber are harvested usually for the export market	White sea urchin ( <i>Tripneustes ventricosus</i> ) Donkey dung sea cucumber ( <i>Holothuria mexicana</i> )
Shallow waters along coast and around islands	Sea turtles	Sea turtles are marine reptiles targeted by net or harpoon	The green turtle ( <i>Chelonia mydas</i> ) The hawksbill turtle ( <i>Eretmochelys imbricata</i> ) The leatherback ( <i>Dennochelys coriacea</i> ) The loggerhead turtle ( <i>Caretta caretta</i> )
Deep oceanic waters	Mammals	Mainly small cetaceans (porpoises, dolphins and pilot whales) There is also aboriginal/traditional capture of humpback whales	Short-finned Pilot Whale ( <i>Globicephala macrorhynchus</i> ) Humpback whale ( <i>Megaptera novaeangliae</i> )



**Table 7: The number of fishery categories exploited by each Member State of the CRFM**

Member States	Small coastal pelagic fishery e.g. jacks, scads, herrings, balao, flyingfish.	Small offshore pelagic fishery e.g. black-fin tuna dolphin-fish, wahoo	Large offshore pelagic fishery – e.g. yellowfin tunas, billfishes	Shallow shelf and reef finfish fishery e.g. grunts, snappers, doctorfish	Shallow shelf and reef lobster fishery	Shelf and deep slope fishery- deep water snappers, groupers, etc.	Shrimp/ prawn fishery	Conch fishery - queen conch	Echinoderms fishery – white sea urchin, sea cucumber	Sea turtles fishery	Mammals - pilot whales, dolphins, porpoises
Anguilla	1	1		1	1	1		1		Moratorium	
Antigua and Barbuda	1	1	1	1 <sup>7</sup>	1 <sup>8</sup>	1 <sup>9</sup>		1 <sup>10</sup>	1 <sup>11</sup>	1 <sup>12</sup>	
Bahamas	1	1	1 <sup>13</sup>	1 <sup>14</sup>	1 <sup>15</sup>	1 <sup>16</sup>		1		Fishery closed <sup>17</sup>	Fishery banned <sup>18</sup>
Barbados	1	1	1	1	1	1		1 <sup>19</sup>	1 <sup>20</sup>	Capture prohibited <sup>21</sup>	

<sup>7</sup> Closed season for parrotfish (*Scaridae*), all species; May 1<sup>st</sup> - July 31<sup>st</sup> annually (Government of Antigua and Barbuda, 2013).

<sup>8</sup> Closed season for spiny lobster (*Panulirus argus*); May 1<sup>st</sup> - June 30<sup>th</sup> annually (Government of Antigua and Barbuda, 2013).

<sup>9</sup> Closed season for Nassau grouper (*Epinephelus striatus*), red hind (*Epinephelus guttatus*) and coney (*Cephalopholis fulvus*); January 1<sup>st</sup> - March 31<sup>st</sup> annually (Government of Antigua and Barbuda, 2013).

<sup>10</sup> Closed season for queen conch (*Strombus gigas*); July 1<sup>st</sup> - August 31<sup>st</sup> annually (Government of Antigua and Barbuda, 2013).

<sup>11</sup> Sea urchin and sea cucumber fisheries are currently subsistent fisheries (Horsford, 2014; I. Horsford (personal communication , 11 August 2017))

<sup>12</sup> The Minister may by notice in the Gazette declare an open season for turtle. However no open season was declared (Government of Antigua and Barbuda, 2013; Fisheries Division Antigua and Barbuda, 2015).

<sup>13</sup> Prohibition on possessing, fishing for or landing shark or shark parts; on the sale of shark, shark parts or shark products. (Government of the Bahamas, 2011).

<sup>14</sup> Closed season for stone crab; 1<sup>st</sup> June - 15<sup>th</sup> October (inclusive) annually. Minimum harvestable claw is 4". Harvesting of females is prohibited (Government 2009).

<sup>15</sup> Closed season for crawfish; annual closed season for crawfish extending from 1<sup>st</sup> April - 31<sup>st</sup> July (inclusive). (Government of the Bahamas, 2009).

<sup>16</sup> Closed season [discretionary closure] for the Nassau grouper; December 1<sup>st</sup> - February 28<sup>th</sup> of the following year (Government of the Bahamas, 2009).

<sup>17</sup> Prohibition on taking, possessing, buying or selling of marine turtles, marine turtle parts or marine turtle eggs. (Government of the Bahamas, 2009).

<sup>18</sup> No person shall, within the exclusive fishery zone, fish for, molest or otherwise interfere with any marine mammal (does not apply to a person who has the prior written permission of the Minister to capture marine mammals for scientific, educational or exhibition purposes (Government of the Bahamas, 2009).

<sup>19</sup> A small fishery (Government of Barbados, 2012).

<sup>20</sup> Fishery closed in year 2014. In 2014 stock size would not have been large enough to support opening of the fishery for a reasonable length of time (Government of Barbados, 2015).

<sup>21</sup> Regulation prohibits the capture, possession or sale of marine turtles, turtle eggs and turtle parts (Ministry of Agriculture Barbados, 2012).

Member States	Small coastal pelagic fishery e.g. jacks, scads, herrings, balao, flyingfish.	Small offshore pelagic fishery e.g. black-fin tuna dolphin-fish, wahoo	Large offshore pelagic fishery – e.g. yellowfin tunas, billfishes	Shallow shelf and reef finfish fishery e.g. grunts, snappers, doctorfish	Shallow shelf and reef lobster fishery	Shelf and deep slope fishery-deep water snappers, groupers, etc.	Shrimp/prawn fishery	Conch fishery - queen conch	Echinoderms fishery – white sea urchin, sea cucumber	Sea turtles fishery	Mammals - pilot whales, dolphins, porpoises
Belize	1	1	1	1 <sup>22</sup>	1 <sup>23</sup>	1 <sup>24</sup>	1 <sup>25</sup>	1 <sup>26</sup>	1	All protected since 2002 <sup>27</sup>	Protection for marine mammals <sup>28</sup>
Dominica	1	1	1	1		1				1 <sup>29</sup>	
Grenada	1	1	1	1	1 <sup>30</sup>	1		1	1 <sup>31</sup>	1 <sup>32</sup>	
Guyana			1			1	1 <sup>33</sup>				
Haiti	1	1	1	1	1	1	1	1	1	NA <sup>34</sup>	NA

<sup>22</sup> Complete ban on all parrotfish, blue tang, surgeon fish; No person shall take in the waters of Belize, or buy, sell or have in possession any grazers, 'grazers' means any fish of the Scaridae family, including the genus *Scarus* and *Sparisoma*, any fish of the Acanthuridae family (Government of Belize, 2009a). Tarpon (*Megalops atlanticus*), permit (*Trachinotus falcatus*) and bonefish (*Albula vulpes*) are intended for 'catch and release' fishing only (Government of Belize, 2009b).

<sup>23</sup> No person shall take in the waters of Belize or buy, sell or have in his possession crawfish (genus *Panulirus*) - between the 15<sup>th</sup> February and the 14<sup>th</sup> June, inclusive, in any year; (Government of Belize, 2003).

<sup>24</sup> Closed season for Nassau grouper (*Epinephelus striatus*); 1<sup>st</sup> December - 31<sup>st</sup> March inclusive in any year (Government of Belize, 2009a). No whale shark, shall be caught or killed in the waters of Belize (Government of Belize, 2003).

<sup>25</sup> Regulations of 2011 ended the shrimp trawl fishery in Belize; No person shall engage in any form of trawling in the internal waters, territorial sea, exclusive economic zone (Government of Belize, 2011). The shrimp capture fishery is now small scale artisanal. Shrimp season (for wild shrimp) will officially open on July 15<sup>th</sup> of any year inclusive, for a period not exceeding eight months in any one year, but which period may be less than eight months provided that one month's notice is given in advance (Government of Belize, 2003).

<sup>26</sup> Closed season for conch; 1<sup>st</sup> July - 30<sup>th</sup> September, inclusive, in any year (Government of Belize, 2003).

<sup>27</sup> No person shall fish for in the waters of Belize or buy, sell or have in his possession any hawksbill, loggerhead, leatherback, Kemp's ridley, olive ridley or green turtle (Government of Belize, 2003).

<sup>28</sup> Hunting of whales (all species), dolphins (all species) and manatee prohibited (Government of Belize, 2000).

<sup>29</sup> Sea turtle closed season; 1<sup>st</sup> June - 30<sup>th</sup> September both dates inclusive (Government of Dominica, 1976).

<sup>30</sup> Lobster closed season; 1<sup>st</sup> May - 31<sup>st</sup> August (ACP Fish II, 2012b).

<sup>31</sup> Grenada sea urchins (sea eggs) fishery is closed - total ban (ACP Fish II, 2012b).

<sup>32</sup> Closed season for turtles; 1<sup>st</sup> May - 31<sup>st</sup> August (ACP Fish II, 2012b).

<sup>33</sup> A closed season was implemented in 2014 for the seabob (shrimp) fishery and the prawn fishery. Closure was 8<sup>th</sup> September - 26<sup>th</sup> October 2014 (6 weeks), both dates inclusive (CRFM website, 2014).

<sup>34</sup> NA=Not Available

Member States	Small coastal pelagic fishery e.g. jacks, scads, herrings, balao, flyingfish.	Small offshore pelagic fishery e.g. black-fin tuna dolphin-fish, wahoo	Large offshore pelagic fishery – e.g. yellowfin tunas, billfishes	Shallow shelf and reef finfish fishery e.g. grunts, snappers, doctorfish	Shallow shelf and reef lobster fishery	Shelf and deep slope fishery-deep water snappers, groupers, etc.	Shrimp/prawn fishery	Conch fishery - queen conch	Echinoderms fishery – white sea urchin, sea cucumber	Sea turtles fishery	Mammals - pilot whales, dolphins, porpoises
Jamaica	1	1	1 <sup>35</sup>	1	1 <sup>36</sup>	1	1	1 <sup>37</sup>	1 <sup>38</sup>	Moratorium since 1982 <sup>39</sup>	Protection for some marine mammals <sup>40</sup>
Montserrat	1	1	1	1		1					
St. Kitts and Nevis	1	1	1	1	1 <sup>41</sup>	1		1		1 <sup>42</sup>	
St. Lucia	1	1	1	1	1 <sup>43</sup>	1		1	1	1 <sup>44</sup>	
St. Vincent and the Grenadines	1	1	1	1	1 <sup>45</sup>	1		1		1 <sup>46</sup>	1 <sup>47</sup>
Suriname		1	1	1		1	1				
Trinidad and Tobago	1	1	1	1	1	1	1	1		Prohibition on killing of any turtle <sup>48</sup>	

<sup>35</sup> There was a closed season for sharks in 2013; 18<sup>th</sup> July - 31<sup>st</sup> December 2013 (JIS, 2013; I. Jones (personal communication, 7 September 2016)).

<sup>36</sup> Lobster closed season; 1<sup>st</sup> April - 30<sup>th</sup> June each year (Government of Jamaica, 1987).

<sup>37</sup> Conch closed season 2013/2014 (declared); 1<sup>st</sup> September 2013 - 28<sup>th</sup> February 2014, (Jamaica Information Service (JIS), 2013).

<sup>38</sup> In 2013 there was a closed season for sea cucumbers; 18<sup>th</sup> July - 30<sup>th</sup> September 2013, as a precautionary measure until a structured management regime could be developed (Kong, 2015; Government of Jamaica, 2015).

<sup>39</sup> Green turtle, hawksbill turtle, loggerhead turtle, Atlantic ridley, Atlantic leatherback all protected (Government of Jamaica, 1945).

<sup>40</sup> Manatee, Pedro seal, bottlenose dolphin, sperm whale, spotted dolphin, Baird's beaked whale, short-finned pilot whale, humpback whale protected (Government of Jamaica, 1945).

<sup>41</sup> The Minister may by notice published in the Gazette declare the period 1<sup>st</sup> May to 31<sup>st</sup> August in any year as a closed season (Government of St. Kitts and Nevis, 1995).

<sup>42</sup> Closed season for sea turtles; 28<sup>th</sup> February - 1<sup>st</sup> October annually (Government of St. Kitts and Nevis, 1995).

<sup>43</sup> Lobster closed season 30<sup>th</sup> April - 1<sup>st</sup> September in each year (Government of St. Lucia, 1985).

<sup>44</sup> Marine turtles closed season; 28<sup>th</sup> February - 1<sup>st</sup> October in each year. Only hawksbill turtles weighing 60lbs or more; green or loggerhead turtle weighing 75lbs or more are permitted to be fished during the open season (Government of St. Lucia, 1985).

<sup>45</sup> Close season for lobster; 1<sup>st</sup> May - 31<sup>st</sup> August annually (Government of St. Vincent and the Grenadines, 1989).

<sup>46</sup> Closed season for turtle; 1<sup>st</sup> March to 31<sup>st</sup> July (Government of St. Vincent and the Grenadines, 1987).

<sup>47</sup> The fishery captures pilot whales and humpback whales. For the seasons 2013 - 2018 the number of humpback whales to be taken shall not exceed 24 (International Whaling Commission, 2016).

<sup>48</sup> Prohibition on killing, harpooning or selling of any turtle (Government of the Republic of Trinidad and Tobago, 2011).

Member States	Small coastal pelagic fishery e.g- jacks, scads, herrings, balao, flyingfish.	Small offshore pelagic fishery e.g. black-fin tuna dolphin-fish, wahoo	Large offshore pelagic fishery – e.g. yellowfin tunas, billfishes	Shallow shelf and reef finfish fishery e.g. grunts, snappers, doctorfish	Shallow shelf and reef lobster fishery	Shelf and deep slope fishery- deep water snappers, groupers, etc.	Shrimp/ prawn fishery	Conch fishery - queen conch	Echinoderms fishery – white sea urchin, sea cucumber	Sea turtles fishery	Mammals - pilot whales, dolphins, porpoises
Turks and Caicos Islands	1	1	1	<sup>149</sup>	<sup>150</sup>	1		<sup>151</sup>		<sup>152</sup>	Restrictions relating to marine mammals <sup>53</sup>
<b>Totals</b>	<b>15</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>13</b>	<b>17</b>	<b>6</b>	<b>13</b>	<b>7</b>	<b>7</b>	<b>1</b>

<sup>49</sup> Restriction relating to parrot fish; No person shall take, have in his possession buy or sell any parrot fish (Government of Turks and Caicos, 2014a)

<sup>50</sup> Closed season in relation to crawfish shall be the period from the first day of April to the thirty-first day of July (inclusive) in each year or such other dates as may, from time to time, be appointed by the Governor in the Gazette (Government of Turks and Caicos Islands, 2014a).

<sup>51</sup> Closed season (on exports) for queen conch; No person shall export queen conch during the period 15<sup>th</sup> July - 15<sup>th</sup> October each year (Government of the Turks and Caicos Islands, 2014a).

<sup>52</sup> Closed season for hawksbill turtles 1<sup>st</sup> August - 31<sup>st</sup> March inclusive each year (Government of the Turks and Caicos Islands, 2014b). No person shall take any turtle on any beach or at any place above low water mark; take any turtle of the species Kemp's ridley turtle or leatherback turtle or olive ridley turtle (Government of the Turks and Caicos Islands, 2014a).

<sup>53</sup> No person shall engage in fishing for, molest or otherwise interfere with any marine mammal (Government of the Turks and Caicos Island, 2014a).

## **CHAPTER 2: THE FISHING FLEET OF THE CRFM REGION**

### **2.1 Fishing vessels operating in CRFM Member States**

Most fishery exploitation activities in the region employ the use of vessels (vessels used in aquaculture facilities were not included as a part of the fishing fleet of the region).

Vessels are used in almost all categories of fish exploitation, including:

- (i) Recreational exploitation - recreational fisheries
- (ii) Sporting exploitation - sports fisheries
- (iii) Subsistence exploitation - subsistence fisheries
- (iv) Commercial exploitation - commercial capture fisheries

Data and information on vessels used exclusively for recreational fishing, sports fishing and subsistence fishing (where these vessels were not registered by the fisheries authority of Member States) were not included in this report at this time<sup>54</sup>. In some cases vessels are used interchangeable between fishery types and categories. The Fisheries Authorities of Member States had available, records of the vessels used in commercial capture fisheries.

### **2.2 Quantity of vessels operating in the commercial capture fisheries of the CRFM region**

Very few Member States conduct annual fishing vessel censuses. Where timely vessel censuses are not carried out, information on destroyed or inactive vessels are usually not available and thus vessels that no longer exist or are no longer operating are often not removed from the vessel registries of the Fisheries Divisions / Departments. The number of registered vessels therefore may not in all cases reflect the exact number of vessels operating in the fishing industry of the Member States. It does serve however as an indicator of the possible number of vessels in operation.

The total number of fishing vessels operating in the commercial capture fisheries of CRFM Member States was estimated at 27,252 in 2014; 32,817 in 2015 and 32,836 in 2016 (average 32,817 per year 2015/2016). The increase of 5565 vessels observed between 2014 and 2015 was mostly as a result of new information reported by Haiti. Prior to 2015 the last available estimate from Haiti was 5,630 vessels in 2008. Updated information received from Haiti, indicated that there were 11,600 in the 2015/2016 period (Table 8). The figures for 2015 and 2016 were similar as in most cases 2015 estimates were used for 2016, as 2016 data were not available.

The number of vessels fishing on the high seas and registered in Member States of the CRFM during 2015 and 2016 was estimated at 105 in 2015 and 98 in 2016 (Table 9). The three Member States with fishing vessels registered on open registers in 2015/2016 were; Belize (31 in 2015) St. Kitts and Nevis (40 in 2015 and 35 in 2016 ) and St. Vincent and the Grenadines (34 in 2015 and 32 in 2015). The region therefore had a total of 105 fishing vessels registered under open registries in 2015, a decrease of 66% from the 2012 estimate of 168.

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<sup>54</sup> Subsequence volumes of this publication will seek to provide this data

Table 8: Number of fishing vessels operating in the commercial capture fishery of CRFM Member States for period 2013 – 2016

	2013 P	2014 P	2015	2016	Sources 2015 and 2016 data
Anguilla	105	136 <sup>55</sup>	65	122	Department of Fisheries and Marine Resources Anguilla, 2016
Antigua and Barbuda	337	338	338	338*	Fisheries Division Antigua and Barbuda, 2015
Bahamas	4 000	4 000	4 000	4 000*	Department of Marine Resources Bahamas <sup>56</sup>
Barbados	1 090	1 034	1 059	1 146	Government of Barbados, 2017
Belize	560	560 <sup>57</sup>	510	510*	CRFM, 2015
Dominica <sup>58</sup>	434	434	434	434*	Fisheries Division Dominica, 2013 and CRFM, 2012a
Grenada	1812	1812 <sup>59</sup>	1 933	2 028	Fisheries Division Grenada, 2017
Guyana	1 450	1 450 <sup>60</sup>	827	778	CRFM, 2014
Haiti <sup>61</sup>	5 630	5 630	11 600	11 600*	Fisheries Department Haiti, 2017
Jamaica	6 481	6 955	7 353	7 143	Fisheries Division Jamaica, 2016 & 2018
Montserrat	32	37	31	21	Department of Fisheries Montserrat, 2018
St. Kitts and Nevis	375	375	385	408	Department of Marine Resources St. Kits and Nevis, 2017
St. Lucia	719	760	796	822	Department of Fisheries St. Lucia, 2018
St. Vincent and the Grenadines	790	790	882	882*	Fisheries Division St. Vincent and the Grenadines, 2017
Suriname	1 146	1 273	936	936*	Department of Fisheries Suriname, 2017
Trinidad and Tobago	1 611	1 611 <sup>62</sup>	1 611	1 611*	Fisheries Division Trinidad and Tobago, 2015
Turks and Caicos Islands	57	57 <sup>63</sup>	57	57*	Department of Environment and Coastal Resources Turks and Caicos Island, 2012
Totals	26 629	27 252	32 817	32 836	
Average total for period 2013 – 2014					

P =Provisional; subject to change.  
\*2015 estimate as 2016 data were not available.

<sup>55</sup> Data represents all active fishing vessels as of 2<sup>nd</sup> June 2015  
<sup>56</sup> Data from the last Bahamas fisheries census conducted in 1995(Deleveaux and Higgs, 1995). Preliminary results of the 1995 Fisheries Census showed that there were 4,050 Bahamian vessels active in the commercial fishery - figure was rounder off to 4000 by the Department of Marine Resources Bahamas.  
<sup>57</sup> Data for 2013 carried forward as 2014 data were not yet available  
<sup>58</sup> Data available were reported during the 2011 Dominica Fisheries Industry Census (CRFM, 2012a)  
<sup>59</sup> Data for 2013 carried forward as 2014 data were not yet available  
<sup>60</sup> Data for 2013 carried forward as 2014 data were not yet available  
<sup>61</sup> 2008 last available estimate  
<sup>62</sup> Data for 2013 carried forward as 2014 data were not yet available  
<sup>63</sup> Last available estimate was for 2011

Table 9: Number of fishing vessels operating under open registries of CRFM Member States 2015 and 2016

Member States from the CRFM region.	Number of fishing vessels operating under open registries (2015)	Number of fishing vessels operating under open registries (2016)	References / Source
Belize	31	31 <sup>64</sup>	Fisheries Department, Belize, 2016
St. Kitts and Nevis	40	35	Department of Maritime Affairs St. Kitts and Nevis, 2018
St. Vincent and the Grenadines	34	32	Fisheries Division St. Vincent and the Grenadine, 2017
Total	105	98	

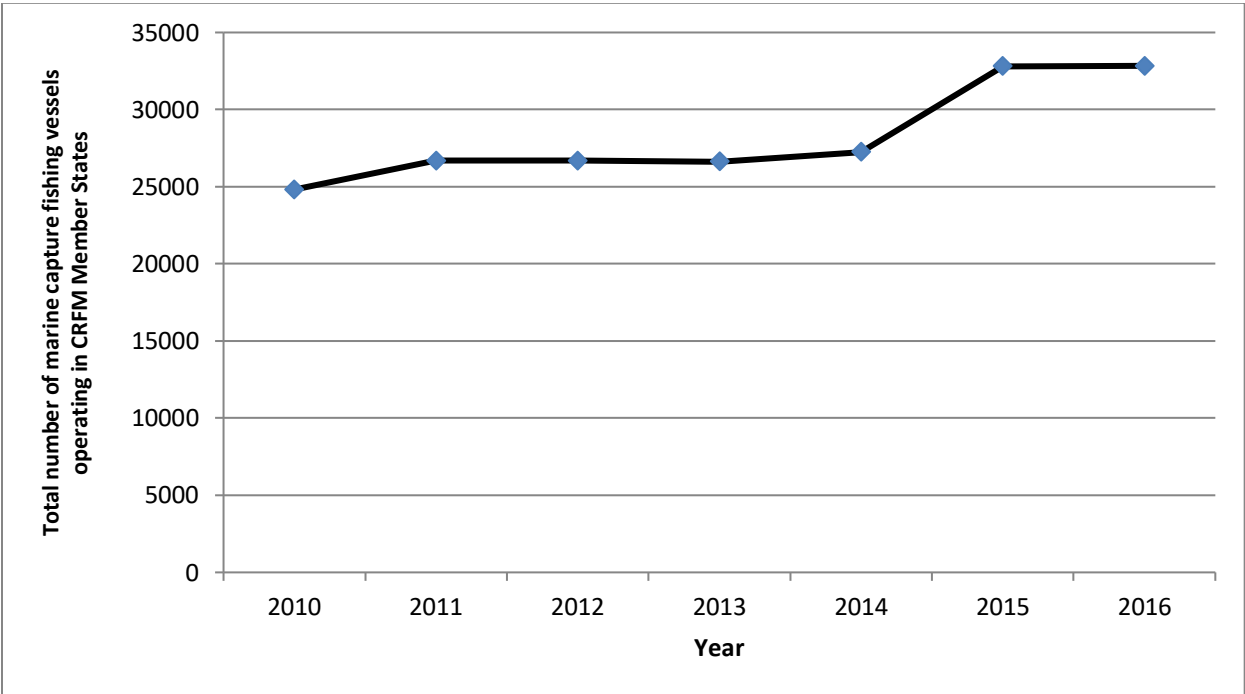


Figure 2: Total number of commercial capture fishing vessels operating in CRFM Member States 2010 -2016.

<sup>64</sup> 2015 estimate as 2016 data were not available

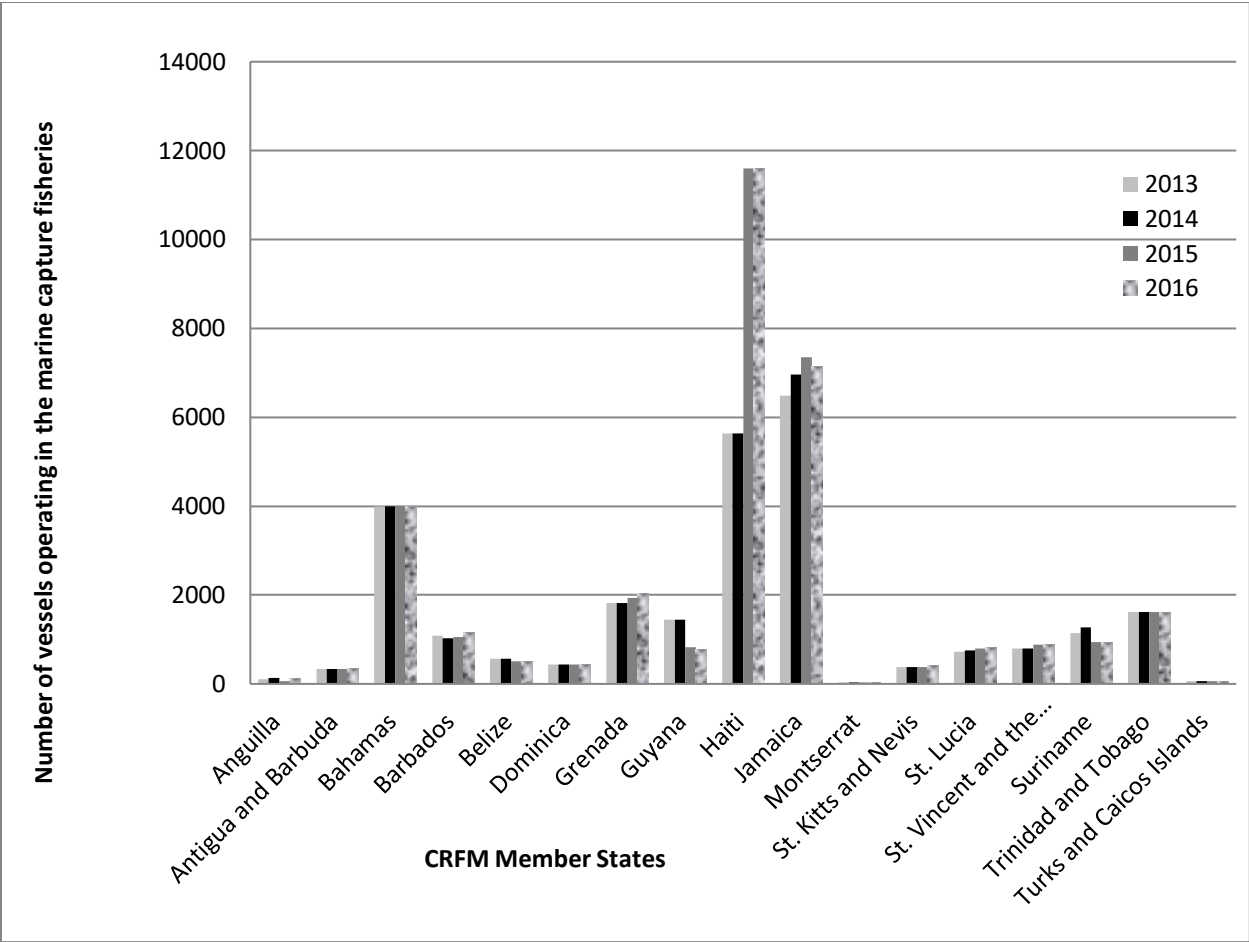


Figure 3: Number of vessels operating in the commercial capture fisheries of CRFM Member States for period 2013 – 2016.

### 2.3 Types and categories of fishing vessels operating in the commercial capture fisheries of CRFM Member States

Most of the CRFM Member States described their commercial capture fishery fishing fleets as artisanal fleets. Table 10 provides a summary of the types and categories of fishing vessels used in the commercial capture fishery of CRFM Member States, and it indicates that many traditional fishing vessels such as canoes (small dugout and planked canoes) dories and pirogues are still in use in the CRFM region. Table 11 shows that in 2013 / 2014 of 11,709 vessel from the commercial capture fishery fishing fleet examined approximately 61% attained a length of up to 5.9 metres length overall and approximately 26% were between 6 – 11.9 metres length overall. Approximately 14% of the fleet was above 12 metres length overall. Large industrial vessels were seldom in the fleet with only 4% of the fleet between 30 - 35.9 metres length overall.

Table 10: Summary description of the commercial capture fishery fishing fleets of CRFM Member States

CRFM Member States	Summary description of the fishing fleet (length of vessels is length overall - LOA)	Source / Reference
Anguilla	There are four, ~14m trawlers on the island. Besides those, the majority of the boats are primarily wood and fibreglass, open hull vessels, powered by outboard engines, with the exception of the four trawlers which are powered by inboard engines. Their sizes range from 5 – 15m.	CRFM, 2014
Antigua and Barbuda	The fleet has transitioned from wooden sloops and dories, which dominated the fleet in the 1970's, to fibreglass launches and pirogues. Categories of vessels include: 1. Sloops and dories; small wooden boats up to 5.9 metres 2. Launches and pirogues; usually made from fibreglass, length 6.72 metres	Horsford, 2004
Bahamas	Commercial fishing vessels range in size from 3.35 metres to 30.5 metres. In many instances <i>dinghy</i> (small vessels < 6 metres long) work in conjunction with a larger motorized <i>mothership</i> that acts as a base for operations (primarily in the lobster and conch fishery). Categories of vessels include: 1. The <i>dinghy</i> (small vessels < 6 m in length) which forms the majority of the fleet. 2. Small scale fishing vessels 6 – 16 metres in length	CRFM, 2006 CRFM, 2008



CRFM Member States	Summary description of the fishing fleet (length of vessels is length overall - LOA)	Source / Reference
	3. Large motorized vessels “mothership” (up to 30.5 m in length) that acts as a base for operations	
<b>Barbados</b>	The fleet range from small open rowboats (less than 6 metres) to inboard-engine powered longliners (over 22 metres). Categories of vessels include: 1. <i>Moses</i> ; open boats 3 - 6 metres 2. <i>Dayboats/Launches</i> : mostly wooden vessels 6 - 12 metres, fitted with a cabin 3. <i>Iceboats and Longliners</i> : characterized by a fitted insulated ice hold; carry a cabin; usually greater than 12 metres	Government of Barbados, 2004
<b>Belize</b>	Most fishing vessels range between 3.6 metres to 9.14 metres in length and are wooden or fibreglass fishing vessels fitted with outboard engines (15-75 hp) or sail. Vessels are used to exploit both freshwater systems and the marine environment. Categories of vessels include: 1. Outboard powered skiffs and canoes. 2. Round bilged sailing boats	Villanueva, 2009
<b>Dominica</b>	Keel-type vessels account for approximately half of the fishing fleet. Categories of vessels include: 1. Canoes 2. keel-type boats and pirogues	Theophille, 2012
<b>Grenada</b>	Pirogues and small open vessels are the main types of vessels used. The range in boat sizes have increased from 4.9 - 9.1 metres to 4.9 - 16.8 metres in recent years. Categories of vessels include: 1. Small open boats; canoes and small pirogues 2. Open and decked pirogues 3. Longliners	FAO, 2007a; CRFM, 2011b
<b>Guyana</b>	The marine capture fisheries are exploited by: 1. Shrimp trawlers; 21 metres in length. (Gulf of Mexico standard steel-hulled vessels with twin otter trawl nets). 2. Finfish trawlers (these are usually smaller than the shrimp trawlers). 3. The artisanal fishing fleet which consist of wooden flat-bottomed dory type vessels ranging in size from 6 to 18 metres. The inland freshwater fisheries are exploited using small, flat-bottomed, dory type vessels	CRFM, 2008; JICA and IC Net Limited, 2012
<b>Haiti</b>	Vessels are artisanal vessels ranging from 3 - 6 metres Categories of vessels include: 1. Rowboats ( <i>canots à quille</i> ); length 3.3 to 6 metres 2. Flat-bottomed boats ( <i>corallins</i> ); length 3.3 – 5 metres 3. Dugout wooden boats ( <i>pirogues monoxyles</i> ); length 3.3 – 4 metres	JICA and IC Net Limited, 2012
<b>Jamaica</b>	The fishing fleet consist principally of open glass-fibre reinforced plastic, (GFRP) canoes. Categories of vessels include: 1. Dugout wood canoes and other small open canoes 2. Open reinforced fibreglass plastic (FRP) canoes most of which are 8.5 metres, large size wooden boats locally called <i>big head</i> 3. Fish trading vessels locally called <i>packer boats</i> 4. Steel or aluminium hull vessels operating as “mothership” on offshore banks	FAO, 2004-2013b; Kong, 2003
<b>Montserrat</b>	The length of vessels in the fleet range from 3.7 - 9.1 metres The fleet consist of: 1. Traditional wooden boats. 2. Open fibreglass reinforced pirogues (largest category)	CRFM, 2011b
<b>St. Kitts and Nevis</b>	Approximately 80% of the fleet are open pirogues between 5 to 12 metres in length	CRFM, 2006
<b>St. Lucia</b>	Fishing vessels engaged in the fishery in Saint Lucia range between 5 - 9 meters and are propelled mainly by outboard engines. Categories of vessels include: 1. Small wooden canoes and pirogues 2. Open and decked pirogues, transom, and shaloop 3. Longliners and whalers	CRFM, 2009

<b>CRFM Member States</b>	<b>Summary description of the fishing fleet (length of vessels is length overall - LOA)</b>	<b>Source / Reference</b>
<b>St. Vincent and the Grenadines</b>	<p>Most fishing vessels are open and powered by outboard engines. Categories of vessels include:</p> <ol style="list-style-type: none"> <li>1. Flat Transoms locally called <i>bow stern</i> or <i>dories</i> (open boats of 3 - 6 metres in length) and other small canoes and rowboats</li> <li>2. Fibreglas pirogues , ranging from 7 - 10 metres in length</li> <li>3. Double enders or “<i>two bows</i>” ; open wooden boats ranging from 3 - 9 metres in length</li> <li>4. Longliner type multipurpose boats ranging in length from 10.6 - 14.8 metres</li> </ol>	CRFM, 2012b
<b>Suriname</b>	<p>Fishing vessels operate in Suriname’s marine, brackish and inland waters.</p> <p>The marine resources are exploited by:</p> <ol style="list-style-type: none"> <li>1. Shrimp trawling vessels.</li> <li>2. Finfish trawling vessels.</li> <li>3. Longliners.</li> <li>4. Large canoe type vessels with inboard engines</li> </ol> <p>The fish resources of inland waters are exploited by canoe type vessels</p>	FAO, 2008; CRFM, 2008
<b>Trinidad and Tobago</b>	<p>The 2003 fishing vessel census for Trinidad found that about 96% of the vessels were artisanal (including trawlers) about 2% were semi-industrial multi-gear vessels and 1% were semi - industrial longliners.</p> <p>Categories of vessels include:</p> <ol style="list-style-type: none"> <li>1. Pirogues usually 7 - 12 metres in length including artisanal trawlers (though pirogues could be as small as 4 metres)</li> <li>2. Semi industrial longliners, semi-industrial fishpot/line vessels, semi-industrial and industrial trawlers 10 - 24 metres in length</li> </ol>	CRFM, 2008; Fisheries Division Trinidad and Tobago, 2011
<b>Turks and Caicos Islands</b>	<p>The vessels used are artisanal vessels between 5 - 6 metres in length.</p> <p>Categories of vessels include:</p> <ol style="list-style-type: none"> <li>1. small open boats with a 'V' shaped hulls</li> </ol>	CRFM, 2008

Table 11: Categorization of vessel operating in the commercial capture fisheries by vessel length overall (L.o.A) classes (meters) as at 2015/2016 or the latest estimates available for CRFM Member States

CRFM Member States	Vessel size by length overall (L.o.A) classes <sup>65</sup> (meters)							Totals	Year of estimate	Source
	Up to 5.9	6 - 11.9	12 - 17.9	18 - 23.9	24-29.9	30 - 35.9	Unknown			
Anguilla	34	98	4	0	0	0		136	2014/2015 <sup>66</sup>	Fisheries Division, 2015
Antigua and Barbuda	69	233	36					338	2014	Fisheries Division Antigua and Barbuda, 2015
Bahamas	NA	NA	NA	NA	NA	NA	NA			
Barbados	588	230	216					1034	2014	Government of Barbados, 2015
Belize	NA	NA	NA	NA	NA	NA	NA			
Dominica	249	185						434	2013/2014	Fisheries Division Dominica, 2013
Grenada	NA	NA	NA	NA	NA	NA	NA			
Guyana		722	64	118		448	98	1450	2013	CRFM, 2014
Haiti	5630							5630	2008	JICA and IC Net Limited, 2012
Jamaica	NA	NA	NA	NA	NA	NA	NA		2014	CRFM, 2014
Montserrat	10	22						32	2013	CRFM, 2014
St. Kitts and Nevis	NA	NA	NA	NA	NA	NA	NA		NA	
St. Lucia	94	619	6					719	2013	Department of Fisheries St. Lucia, 2015
St. Vincent and the Grenadines	471	307	11	1				790	2013	CRFM, 2015
Suriname		627	451	68				1146	2013	Department of Fisheries Suriname, 2013
Trinidad and Tobago	NA	NA	NA	NA	NA	NA	NA			
Turks and Caicos Islands	NA	NA	NA	NA	NA	NA	NA			
Totals	7145	3043	788	187	0	448	98	11709		
Percentage (%)	61	26	7	2	0	4	1			

NA=Not available.

<sup>65</sup> International Standard Statistical Classification of Vessels by Length Classes, approved at the eleventh session of the CWP (Coordinating Working Party on Atlantic Fishery Statistics) in 1982.

<sup>66</sup> Data represents all active fishing vessels as of 2<sup>nd</sup> June 2015

## CHAPTER 3: FISH PRODUCTION OF THE CRFM MEMBER STATES

Fish harvesting activities occur in the recreational fisheries, sports fisheries, subsistence fisheries, commercial capture fisheries (including the bait fishery) and aquaculture.

Data and information on fish production exclusively from recreational fishing, sports fishing and subsistence fishing in the region were limited, as in most cases data were not collected from these sub-sectors. Fish production statistics from these sub-sectors were not included in this report at this time. During the period the fisheries authorities of the CRFM Member States consistently collected data from the commercial capture fisheries and aquaculture facilities. However, the region's data collection systems tended to be more geared towards the collection of data from marine commercial capture fisheries, and in most cases data and statistics on commercial capture of fish from inland fresh water systems were also limited (see section 1.2.1).

### 3.1 Production of the marine capture fisheries of CRFM Member States

The overall trend in total marine fish production of the CRFM Member States 2005 to 2016 is one of increasing production. Annual average production for the period 2005 to 2016 was 159,257 mt live weight / 141,742 mt meat weight. Peak production was between the years 2010 to 2013 attaining the highest production of 174,665 mt live weight / 154,309 mt meat weight in 2012. Total production fell in 2014 due to fall in production experienced by Guyana, Suriname, Trinidad and Tobago and Jamaica (four of the highest producing Member States). In 2014 Guyana experienced a 25.48% decrease in production and Jamaica a 21% decrease. Though the production from marine capture fisheries from Guyana also fell in 2015 the overall total production for the region recovered with increased production from Suriname and Jamaica. In 2016 Guyana's production also recovered and so the overall total production for the region has improved over the 2015 to 2016 (Figure 4, Table 12, Table 13).

The drop in Guyana's production (the highest producing Member State in 2013) between 2013 and 2014 was 12,630 mt and between 2013 and 2015 it was 13,741 mt. Guyana suggested the following possible reasons for the decline: (i) the effects of Sargassum seaweed in Guyana's waters; (ii) the weather conditions in the ocean were not favourable with some strong winds and the fishermen complained about a phenomenon they referred to as "slime" in the waters which usually occur during periods of low rainfall; (iii) the high cost of inputs such as fuel caused some fisherfolk to reduce their effort; and (iv) in Berbice the fisherfolk complained that the dredging of the Berbice River mouth caused silting of the fishing grounds and therefore a reduction in catch.

Since 2014 Suriname has been the top producer of marine capture fisheries of the region, producing an average of 41,273 mt of fish annually. However over the longer time period of 2005 – 2016 Guyana's annual production of 43,892 mt live/meat weight annually is higher than that of Suriname (33,778 mt live/meat weight annually) Table 15 and Figure 5.

The production of the high seas fleets of Belize, St. Kitts and Nevis and St. Vincent and the Grenadines produced 123,588 mt of fish in 2015 and 84,216 mt in 2016 (Table 14).

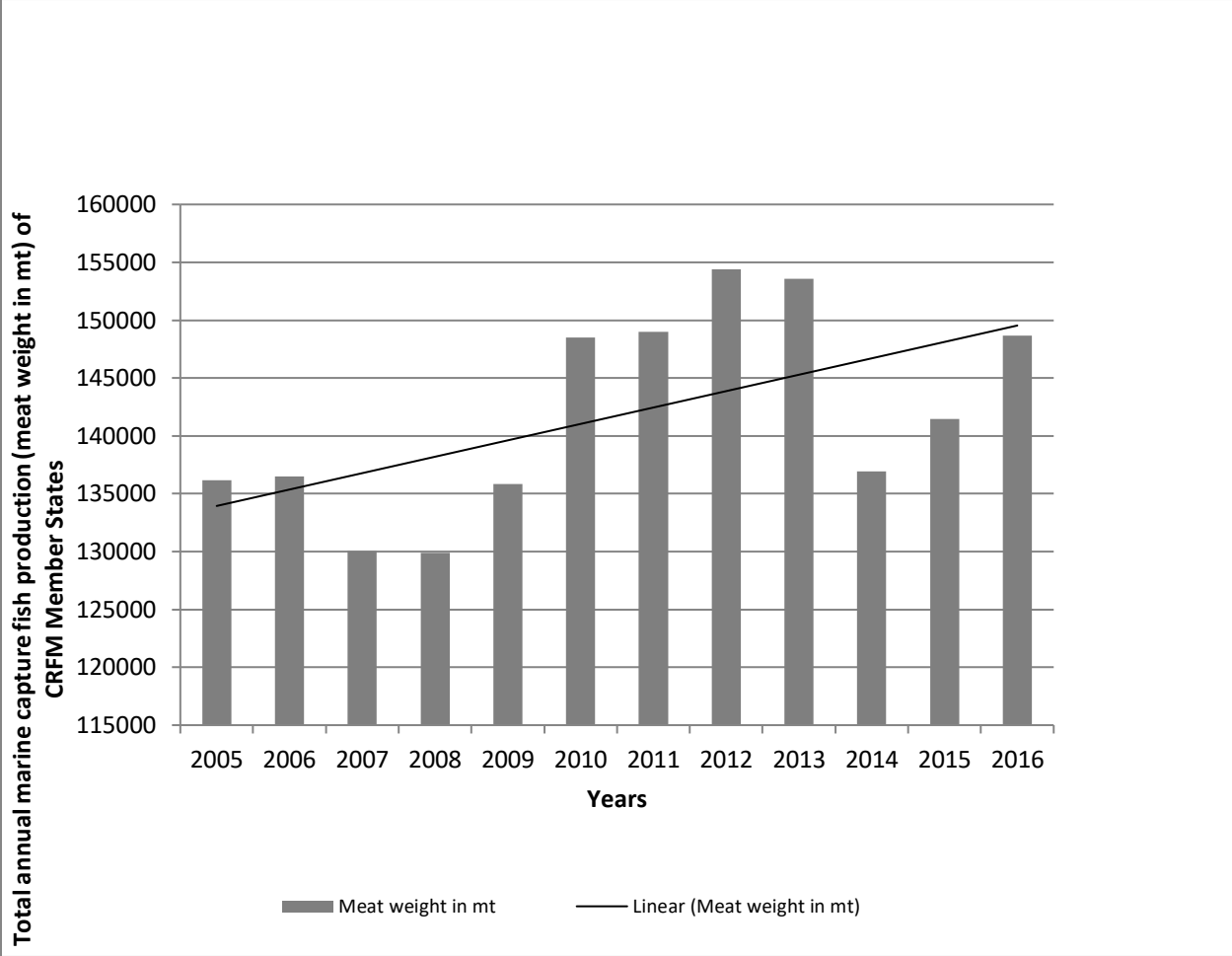


Figure 4. Annual total capture fish production (meat weight in mt) of CRFM States for period 2005 – 2016.

**Table 12: Annual marine capture fish production (live weight <sup>67</sup>in metric tonnes) and period average of CRFM Member States for the period 2005– 2016**

Member States	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016P	Average 2005-2016
<b>Anguilla</b>	250	250	250	760	681	701	1 007	1 118	858	940	574	1 013	700
<b>Antigua and Barbuda</b>	2 999	3 092	3 092	3 521	2 490	2 293	3 192	5 696	4 606	3 114	3 291	3 291	3 390
<b>Bahamas</b>	15 532	16 184	10 809	14 704	13 731	16 190	15 164	16 557	12 734	11 795	11 297	11 620	13 860
<b>Barbados</b>	2 182	1 974	2 391	3 220	3 467	3 229	1 773	1 300	2 735	2 153	1 246	1 436	2 259
<b>Belize</b>	4 574	4 817	4 195	4 205	4 922	4 529	4 930	5 835	4 720	3 887	3 764	4 053	4 536
<b>Dominica</b>	524	762	824	732	686	560	665	561	479	479**	479**	479**	603
<b>Grenada</b>	2 151	2 178	2 393	2 407	2 387	2 458	2 451	2 445	2 952	3 028	2 904	2 982	2 561
<b>Guyana</b>	48 450	44 559	42 615	41 366	42 056	46 040	44 364	53 093	49 576	36 946	35 835	41 808	43 892
<b>Haiti</b>	10 950	11 950	11 950	17 950	17 950	17 950	17 800	17 800*	17 800*	17 800*	17 300	18 500	16 308
<b>Jamaica</b>	12 697	17 293	15 998	12 625	15 805	15 174	17 507	14 518	17 513	14 506	16 327	16 240	15 517
<b>Montserrat</b>	41	37	22	31	37	24	33	37	40	37	37	37	34
<b>St. Kitts and Nevis</b>	1 355	1 222	1 154	1 171	1 213	1 093	1 155	1 155*	383	423	896	945	1 014
<b>St. Lucia</b>	1 659	1 668	1 776	2 069	2 078	1 983	1 946	2 116	1 895	2 162	2 245	2 299	1 991
<b>St. Vincent and the Grenadines</b>	778	770	982	636	971	819	848	746	1 021	1 075	1 029	892	881
<b>Suriname</b>	27 657	30 384	29 013	23 449	25 575	33 842	36 225	36 650	38 719	37 708	43 915	42 197	33 778
<b>Trinidad and Tobago (R)<sup>68</sup></b>	17 123	13 249	13 204	13 834	13 854	13 930	13107	12 062	13 138	13 201	13 271	13 045	13 585

<sup>67</sup> Conversion factor for meat weight/dirty conch to live weight is x 7.5 (FAO, 2012b quoted by Ulman et al, 2016) except for Antigua and Barbuda conversion factor 6.77 (Horsford et al, 2011.)

<sup>68</sup> Notes for Trinidad and Tobago

1. Landings data are collected from the Trinidad Artisanal Fleets, Semi-industrial/Industrial Trawl & Longline Fleets, and Game Fishing Tournaments in Trinidad & Tobago.
2. In the absence of a data collection system for the Trinidad Semi-Industrial Fishpot & Line fleet, an estimate of 970 t for 1997 is used.
3. In the absence of total landings for the Tobago commercial fishery, an estimate of 2,479 t for 1991 (Mohammed 1994) is used. In 1991 there were a total of 275 registered fishing vessels, all of which were artisanal, compared with a 2006 estimate of 306 vessels of which about nine (9) were semi-industrial and the remainder artisanal (based on personal communication with staff of the Department of Marine Resources and Fisheries of the Tobago House of Assembly (THA)).
4. In the absence of a data collection system for the Recreational fleet, a 1993 annual estimate of 1,231 t for the recreational fishery in the Northwest peninsula of Trinidad (Mike, 1993) is used.
5. Recorded landings for the Tobago Artisanal & Semi-industrial Fleets for tuna-like species only (sample data only) for 2005 are included.
6. Landings from foreign fleets that may have operated in Trinidad and Tobago waters are not included.

<b>Turks and Caicos Islands</b>	5 528	5 971	5 006	6 044	6 558	5 262	2 998	2 978	2 978*	2 978**	2 796	3 093	4 349
<b>Totals</b>	<b>154 450</b>	<b>156 358</b>	<b>145 674</b>	<b>148 723</b>	<b>154 461</b>	<b>166 077</b>	<b>165 164</b>	<b>174 665</b>	<b>172 147</b>	<b>152 232</b>	<b>157 206</b>	<b>163 928</b>	<b>159 257</b>

*P = Provisional data;*

*R = Revised*

*Dominica 479\*\*- 2013 estimates as other estimates were not available.*

*Haiti 17,800\*- 2011 estimate; St .Kitts and Nevis 1,155\* - 2011 estimate.*

*Turks and Caicos Islands 2,978\* - 2012 estimate*

*Source: Obtained directly from the Fisheries Authority in the respective Member States, National Reports presented at the Annual CRFM Scientific Meetings, and literature searches*

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7. Note that estimates for 2013 to 2016 are considered preliminary due to (apart from the numbered notes above) the fact that the estimated landings of the Trinidad artisanal multi-gear fleets including trawl, as well as the non-artisanal trawl fleets are not yet available (and hence the 2013 preliminary figures for these fleets have been used for all these years). Note however that for all these years the landings estimated for the pelagics from the Trinidad and Tobago non-artisanal longline fleet and game fishing tournaments have been estimated and submitted to ICCAT and have been incorporated in the table.

**Table 13: Annual marine capture fish production (meat weight in metric tonnes) of CRFM Member States for the period 2005 – 2016**

Member States	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 P	Average 2005-2016
<b>Anguilla</b>	250	250	250	702	493	461	643	706	655	752	396	733	524
<b>Antigua and Barbuda</b>	2 541	2 664	2644	2 345	1 833	1 631	1 975	2 596	1 752	1 709	1 709	1 709	2 092
<b>Bahamas</b>	11 099	10 652	8345	9 127	9 025	11 621	10 289	11 451	7 845	8 176	7 783	9 286	9 558
<b>Barbados</b>	2 182	1 974	2391	3 220	3 467	3 229	1 773	1 300	2 735	2 153	1 246	1 436	2 259
<b>Belize</b>	2 723	2 792	2489	2 592	2 926	2 618	2 401	2 635	1 874	1 755	1 548	1 548	2 325
<b>Dominica</b>	524	762	824	732	686	560	665	561	479	479**	479**	479**	603
<b>Grenada</b>	2 047	2 165	2211	2 387	2 374	2 451	2 321	2 266	2 698	2 854	2 711	2 823	2 442
<b>Guyana</b>	48 450	44 559	42615	41 366	42 056	46 040	44 364	53 093	4 9576	36 946	35 835	41 808	43 892
<b>Haiti</b>	9 000	10 000	10000	16 000	16 000	16 000	16 500	16 500*	16 500*	16 500*	16 000	17 200	14 683
<b>Jamaica</b>	8 537	13 068	11838	10 025	13 205	12 314	14 907	10 943	14 263	11 256	13 077	12 990	12 202
<b>Montserrat</b>	41	37	22	31	37	24	33	37	40	37	37	37	34
<b>St. Kitts and Nevis</b>	705	578	517	540	589	475	654	654*	383	423	454	412	532
<b>St. Lucia</b>	1 386	1 440	1509	1 809	1 857	1 801	1 693	1 709	1 639	1 695	1 616	1 702	1 655
<b>St. Vincent and the Grenadines</b>	778	770	982	636	971	819	783	668	714	732	809	649	776
<b>Suriname</b>	27 657	30 384	29013	23 449	25 575	33 842	36 225	36 650	38 719	37 708	43 915	42 197	33 778
<b>Trinidad and Tobago (R)</b>	17 123	13 249	13204	13 834	13 854	13 930	13 107	12 062	13 138	13 201	13 271	13 045	13 585
<b>Turks and Caicos Islands</b>	1 105	1 128	1200	1 110	865	681	638	559	559*	559*	605	610	802
<b>Annual Totals for CRFM region</b>	<b>136 148</b>	<b>136 471</b>	<b>130054</b>	<b>129 905</b>	<b>135 813</b>	<b>148 497</b>	<b>148 972</b>	<b>154 389</b>	<b>153 569</b>	<b>136 935</b>	<b>141 491</b>	<b>148 665</b>	<b>141 742</b>

*P = Provisional data,*

*R = Revised. Also see footnote 68*

*Dominica 479\*\* - 2013 estimates as other estimates were not available.*

*Haiti 16,500\*- 2011 estimate; St .Kitts and Nevis 654\* - 2011 estimate*

*Turks and Caicos Islands 559\* - 2012 estimate*

*Source: Obtained directly from the Fisheries Authority in the respective Member States, National Reports presented at the Annual CRFM Scientific Meetings, and literature searches*



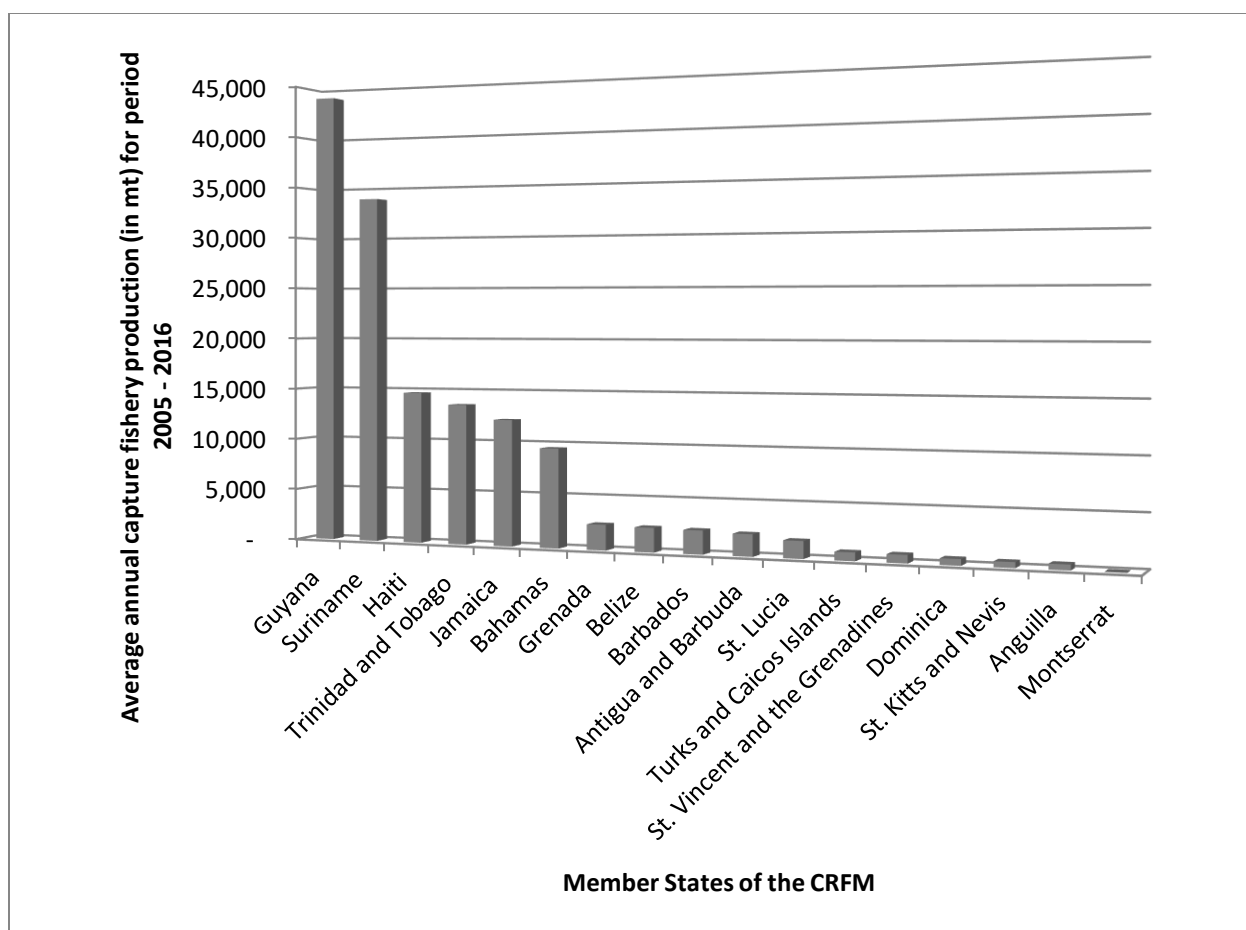
**Table 14: Marine capture fish production (meat weight in metric tonnes) of high seas fleet from the CRFM region for 2011 - 2016**

CRFM Member States	High seas fishery production (mt 2011)	High seas fishery production (mt 2012)	High seas fishery production (mt 2013)	High seas fishery production (mt 2014)	High seas fishery production (mt 2015)	High seas fishery production (mt 2016)	References / Source
Belize	17 418	25 678	18 089	21 536	22 884	17 657	Belize High Seas Fisheries Unit, 2018
St. Kitts and Nevis	29 261	19 703	15 900	65 401	99 506	64 756	Department of Marine Resources St. Kitts and Nevis, 2018
St. Vincent and the Grenadines	1 715	1 158	851	2 212	1 198	1 803	Fisheries Division, St. Vincent and the Grenadines, 2015
<b>Totals</b>	<b>48 394</b>	<b>46 539</b>	<b>34 840</b>	<b>89 150</b>	<b>123 588</b>	<b>84 216</b>	

**Table 15: The production<sup>69</sup> (Prod.) in metric tonnes (mt) of the six highest marine capture fish producers (in descending order) from among the CRFM Member States for the period 2013 – 2016**

Order of Member State	Member States	Prod. (mt) 2013	Member States	Prod. (mt) 2014	Member States	Prod. (mt) 2015	Member States	Prod. (mt) 2016
<b>1<sup>st</sup></b>	<b>Guyana</b>	49 576	<b>Suriname</b>	37 708	<b>Suriname</b>	43 915	<b>Suriname</b>	42 197
<b>2<sup>nd</sup></b>	<b>Suriname</b>	38 719	<b>Guyana</b>	36 946	<b>Guyana</b>	35 835	<b>Guyana</b>	41 808
<b>3<sup>rd</sup></b>	<b>Haiti</b>	16 500	<b>Haiti</b>	16 500	<b>Haiti</b>	16 000	<b>Haiti</b>	17 200
<b>4<sup>th</sup></b>	<b>Jamaica</b>	14 263	<b>Trinidad and Tobago</b>	13 199	<b>Trinidad and Tobago</b>	13 271	<b>Trinidad and Tobago</b>	13 045
<b>5<sup>th</sup></b>	<b>Trinidad and Tobago</b>	13 199	<b>Jamaica</b>	11 256	<b>Jamaica</b>	13 077	<b>Jamaica</b>	12 990
<b>6<sup>th</sup></b>	<b>Bahamas</b>	7 845	<b>Bahamas</b>	8 175	<b>Bahamas</b>	7 783	<b>Bahamas</b>	9 286

<sup>69</sup> Calculations were based on meat weight.



**Figure 5: Average annual marine capture fisheries production (meat weight in mt) of CRFM Member States (in descending order) for period 2005 – 2016.**

Over the last two year period (2015 – 2016), Suriname, Guyana, Haiti, Trinidad and Tobago, Jamaica and the Bahamas (the top six meat weight producers respectively), produced approximately 91.9 % of the average total meat weight of the marine fish production of the CRFM Member States<sup>70</sup>, and over the longer time period of 2005-2016 (11 years) they produced 90%.

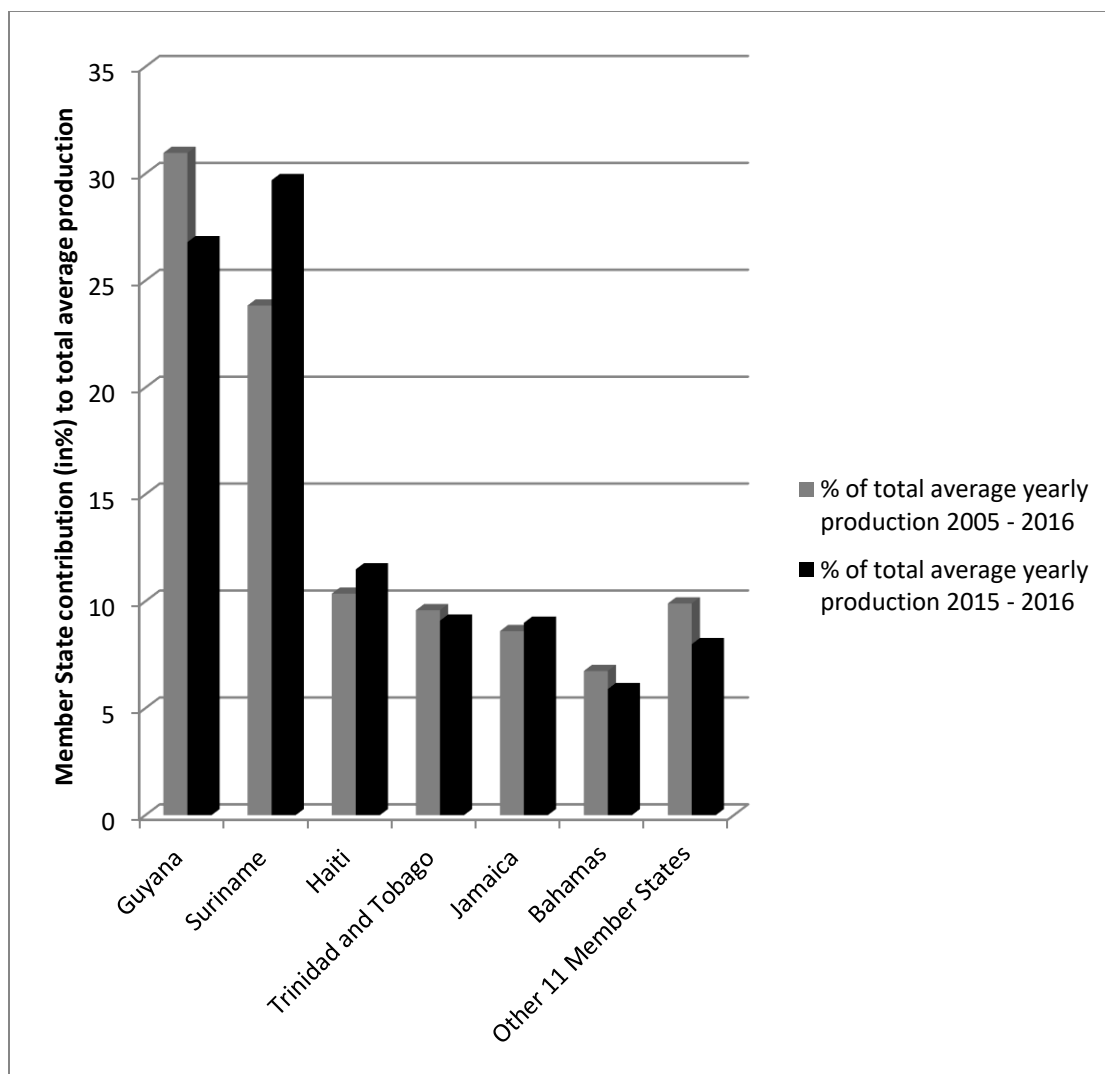
Suriname's average annual contribution to the average total marine capture fish production of the region was approximately 29.7% yearly, that of Guyana approximately 26.38% and that of the other top producers between 5% and 11% and the other CRFM Member States combined, contributed approximately 8% annually (Table 16 and Figure 6).

Table 17 shows marine capture fish production (in mt) of CRFM Member States by fishery and species for 2015.

**Table 16: Average annual production and percentage contributions by CRFM Member States to the total average annual fish production (meat weight in mt) for the periods 2005 – 2016 and 2015 - 2016**

<sup>70</sup> Calculations were based on meat weight values

<b>Member State</b>	<b>Average annual production 2005-2016(meat weight in mt)</b>	<b>% contribution to the total average annual production (meat weight) 2005 - 2016</b>	<b>Member State</b>	<b>Average annual production 2015-2016(meat weight in mt)</b>	<b>% contribution to the total average annual production (meat weight) 2015 - 2016</b>
<b>Guyana</b>	43 892	31.0	<b>Suriname</b>	43 056	29.7
<b>Suriname</b>	33 778	23.8	<b>Guyana</b>	38 822	26.8
<b>Haiti</b>	14 683	10.4	<b>Haiti</b>	16 600	11.4
<b>Trinidad and Tobago</b>	13 585	9.6	<b>Trinidad and Tobago</b>	13 158	9.1
<b>Jamaica</b>	12 202	8.6	<b>Jamaica</b>	13 033	9.0
<b>Bahamas</b>	9 558	6.7	<b>Bahamas</b>	8 534	5.9
<b>Grenada</b>	2 442	1.7	<b>Grenada</b>	2 767	1.9
<b>Belize</b>	2,325	1.6	<b>Antigua and Barbuda</b>	1 709	1.2
<b>Barbados</b>	2 259	1.6	<b>St. Lucia</b>	1 659	1.1
<b>Antigua and Barbuda</b>	2 092	1.5	<b>Belize</b>	1 548	1.1
<b>St. Lucia</b>	1 655	1.2	<b>Barbados</b>	1 341	0.9
<b>Turks and Caicos Islands</b>	802	0.6	<b>St. Vincent and the Grenadines</b>	729	0.50
<b>St. Vincent and the Grenadines</b>	776	0.5	<b>Turks and Caicos Islands</b>	608	0.4
<b>Dominica</b>	603	0.4	<b>Anguilla</b>	565	0.4
<b>St. Kitts and Nevis</b>	532	0.4	<b>Dominica</b>	479	0.3
<b>Anguilla</b>	524	0.4	<b>St. Kitts and Nevis</b>	433	0.3
<b>Montserrat</b>	34	0.02	<b>Montserrat</b>	37	0.03
<b>Total average annual fish production (meat weight in mt)</b>	<b>141 742 (2005-2016)</b>	<b>100.0</b>		<b>145 078 (2015-2016)</b>	<b>100.0</b>



**Figure 6: Percentage contributions to the total average annual fish production (meat weight in mt) for the period 2005 – 2016 and 2015-2016, of the six highest marine capture fisheries producers and all others combined, from the CRFM Member States.**

**Table 17: Production (meat weight in mt) of the marine capture fishery of CRFM Member States by species and fishery for year 2015(unless otherwise stated)**

Fishery	Species	AN	A&B	BAH	BAR	BEL	DOM	GRE	GUY	HAI	JAM <sup>71</sup>	MONS	SKN <sup>72</sup>	SLU	SVG	SUR	T&T	TCI
SMALL COASTAL PELAGICS	Jacks			29.01				55.54				0.70	21.07		40.23		254.35	0.00
	Scads	5.53						81.76							234.25			
	Carangids aggregated	0.00	33.00		43.00										1.22			0.00
	Herrings & Shads	0.00						0.00									0.51	0.00
	Needlefish / Gar	0.00						0.25				10.77	42.84		6.31			0.00
	Flyingfish	0.00			378.00			3.28						0.43	0.00			0.00
	Halfbeaks/Ballyhoo ( <i>Hemiramphus</i> spp.)	0.00						2.13				0.90	18.15		105.65			0.00
	Others aggregated	23.20			0.00	0.00												0.00
<b>Total ; Small coastal pelagic fishery</b>		28.73	33.00	29.01	421.00	0.00	0.00	142.96	0.00	0.00	0.00	12.37	82.06	0.43	387.67	0.00	254.86	0.00
SHALLOW SHELF AND REEF FISHERY	Snappers	31.18	444.00	357.10	21.00			75.37	1 095.00			3.63	11.57	34.49	17.66			
	Grunts	0.00	109.00	30.72				5.94					0.36		0.72			
	Red hind & Coney & Butterfish	0.00		0.00				174.76				2.40			30.26			
	Other groupers		88.00					1.40					9.63		0.10			
	Triggerfishes	0.00	43.00	16.74				3.26				1.20	0.54		0.91			
	Parrotfishes	0.00	132.00					85.13					11.66		1.93			
	Squirrelfishes	0.00	15.00					3.84				0.70	0.08		0.26			
	Angelfishes	0.00	2.00					0.67							0.00			
	Porgies, Seabreams	0.00	3.00												0.00			
	Surgeonfishes (doctorfishes)	0.00	91.00					1.16				0.90	0.62		0.13			
	Other marine fishes	199.35																
	Other mollusks, oysters, squids			0.00				0.07										
	Crabs	0.00	1.20	54.26	0.00	1.77						0.00					50.16	
<b>Total; Shallow shelf and reef fishery</b>		230.54	928.20	458.82	21.00	1.77	0.00	351.60	1 095.00	0.00	0.00	8.83	34.46	34.49	51.97	0.00	50.16	0.00
	Deep water snappers	0.00		0.00		0.00							4.90		4.38			

<sup>71</sup> Finfish species were not disaggregated

<sup>72</sup> Breakdown by species not available

Fishery	Species	AN	A&B	BAH	BAR	BEL	DOM	GRE	GUY	HAI	JAM <sup>71</sup>	MONS	SKN <sup>72</sup>	SLU	SVG	SUR	T&T	TCI
SHELF AND DEEP SLOPE	Nassau groupers	0.00		53.36											0.13			
	Other groupers/seabasses	0.00		68.86											0.07			
	Others aggregated	0.00		0.00		0.00												
Total ; Shelf and deep slope fishery		0.00	0.00	122.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.90	0.00	4.58	0.00	0.00	0.00
LARGE OFFSHORE PELAGICS FISHERY	Yellowfin tuna	0.00			0.00		68.00	1 167.00							28.43	2 632.00	1 179.43	
	Blackfin tuna	0.00					11.00	111.00							9.40		5.13	
	Wahoo						2.00	36.74				0.20		86.96	8.70	360.00	12.61	
	Common dolphinfish	0.00	59.00		373.00		107.00	189.75				0.10	28.46	505.44	93.14	182.00	23.65	
	Other tunas/ tuna-like fishes	0.00	40.00		247.00		34.00	120.60				0.03	9.46	374.01	49.53	1 547.00	540.51	
	Barracudas	0.00	12.00	2.86				108.43				0.10			18.23		0.05	
	Swordfish	0.00			22.00			39.31							0.00		16.81	
	Marlins	0.00					29.00	92.80					3.00		3.70		66.91	
	Sailfishes						2.00	210.03							0.02	195.00	56.82	
	Other mackerels	0.00			12.00		2.00	15.26						0.00	0.24		1 205.35	
	Others/aggregated	6.51			83.00													
	Sharks, rays, skates	0.00	33.00		19.00			14.57						3.58	5.49	195.00	517.41	
Total; Large offshore pelagics fishery		6.51	144.00	2.86	756.00	0.00	255.00	2 105.49	0.00	0.00	0.00	0.43	40.92	969.99	216.89	5 111.00	3 624.67	0.00
MARINE MAMMAL FISHERY	Pilot whales														50.06			
	Porpoises														4.49			
	Others aggregated																	
Total; Marine mammal fishery		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.55	0.00	0.00	0.00
LOBSTER FISHERY	Caribbean spiny lobster	85.44	170.00	6 524.3		859.86		72.98			350.00		11.97	15.52	52.75		21.32	259.82
	Spanish slipper lobster	0.00	0.20															
	Others/aggregated	17.63								600.00								
Total; Lobster Fishery		103.07	170.20	6 524.3	0.00	859.86	0.00	72.98	0.00	600.00	350.00	0.00	11.97	15.52	52.75	0.00	21.32	259.82
CONCH FISHERY	Queen conch	27.40	243.43	540.61		340.93		29.71		200.00	500.00		37.24	96.82	33.85			336.95
	Others aggregated	0.00																

Fishery	Species	AN	A&B	BAH	BAR	BEL	DOM	GRE	GUY	HAI	JAM <sup>71</sup>	MONS	SKN <sup>72</sup>	SLU	SVG	SUR	T&T	TCI
<b>Total; Conch Fishery</b>		27.40	243.43	540.61	0.00	340.93	0.00	29.71	0.00	200.00	500.00	0.00	37.24	96.82	33.85	0.00	0.00	336.95
<b>SEA TURTLES FISHERY</b>	Sea turtles	0.00		0.00				2.19							0.00			
<b>Total; Sea turtles fishery</b>		0.00	0.00	0.00	0.00	0.00	0.00	2.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>ECHINODERM FISHERY</b>	White sea eggs	0.00																
	Sea cucumber	0.00				0												
<b>Total; Echinoderm fishery</b>		0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>SHRIMP FISHERY</b>	Seabob	0.00							17 641.00							6 310.00	687.12	
	Other shrimp	0.00				3.24			1 356.00	50.00	0.00					511.00		
<b>Total; Shrimp fishery</b>		0.00		0.00	0.00	3.24	0.00	0.00	18 997	50.00	0.00	0.00	0.00	0.00	0.00	6 821.00	687.12	0.00
<b>Marine fish nei<sup>73</sup></b>			191.0	104.8	48.0	342.6	224.0	5.7	15 743.0	15 650.0	12 226.7	15.6	42.8	498.3	6.9	31 983.0	8 632.7	8.6
<b>TOTAL: ALL FISHERIES</b>		396.2	1 709.8 <sup>74</sup>	7 782.7	1 246.0	1 548.4	479.0 <sup>75</sup>	2 710.6	35 835.0	16 500.0 <sup>76</sup>	13 076.7	37.3 <sup>77</sup>	254.3 <sup>78</sup>	1 615.5	809.2	43 915.0	13 270.9 <sup>79</sup>	605.3 <sup>80</sup>

**Notes:**

**Marine fish nei - includes all marine fish which were not identified.**

<sup>73</sup> nei = not elsewhere included.

<sup>74</sup> 2014 breakdown as 2015 was not available

<sup>75</sup> Production by species for 2013, as information for 2015 was not available

<sup>76</sup> Production by species for 2011, as information for 2015 was not available.

<sup>77</sup> Production by species for 2014, as information for 2015 was not available.

<sup>78</sup> Production by species for St. Kitts only.

<sup>79</sup> The estimate of total landing for 2013 to 2016 are considered preliminary due to (there are other reasons not mentioned here) the fact that the estimated landings of the Trinidad artisanal multi-gear fleets including trawl, as well as the non-artisanal trawl fleets are not yet available (and hence the preliminary 2013 figures for these fleets have been used for all these years). Note however that for all these years the landings estimated for the pelagics from the Trinidad and Tobago non-artisanal longline fleet and game fishing tournaments have been estimated and submitted to ICCAT and have been incorporated in the estimates.

<sup>80</sup> Data on finfish landings were not collected for 2015. The estimate for finfish landings from 2012/13 was used.

### 3.2 Aquaculture fish production of CRFM Member States

During the period 2013 - 2016 the region produced approximately 8,606 mt of fish annually from aquaculture systems. Belize was the largest aquaculture producer over the period, producing approximately 4,796 mt annually followed by Haiti producing approximately 2,530 mt annually (Table 18). Together these two main producers (Belize and Haiti) accounted for 85% of the region's aquaculture output over the period. Table 19 shows total fish (meat weight) production (prod.) in metric tonnes (mt) from marine capture fisheries (MCF) added to the aquaculture production (AC prod) for CRFM Member States for period 2013 - 2016.

**Table 18: Annual aquaculture production<sup>81</sup> (AC prod. in mt) and average annual aquaculture production of CRFM Member States for period 2013– 2016**

Member States	AC prod. (meat weight in mt) 2013	AC prod. (meat weight in mt) 2014	AC prod. (meat weight in mt) 2015	AC prod. (meat weight in mt) 2016	Average annual AC prod. (meat weight in mt) (2013 – 2016)
Anguilla	0	0	0	0	0
Antigua and Barbuda	NA	NA	NA	NA	NA
Bahamas	NA	NA	NA	NA	NA
Barbados	0	0	0	0	0
Belize	6 834	6 489	4 752	1 109	4 796
Dominica	NA	NA	0	0	0
Grenada	NA	NA	NA	NA	NA
Guyana	218	379	418	470	371
Haiti	560	560	2 600	6 400	2 530
Jamaica	836	698	646	927	777
Montserrat	0	0	0	0	0
St. Kitts and Nevis	0	0	NA	NA	NA
St. Lucia	14	12	24	27	19
St. Vincent and the Grenadines	0	0	0	0	0
Suriname	79	80.37	122	122	101
Trinidad and Tobago	8	5.45	24	11	12
Turks and Caicos Islands	NA	NA	NA	NA	NA
<b>Totals</b>	<b>8 549</b>	<b>8 224</b>	<b>8 585</b>	<b>9 067</b>	<b>8 606</b>

<sup>81</sup> Calculations were based on meat weight values



**Table 19: Total fish (meat weight) production (prod.) in metric tonnes (mt) from marine capture fisheries (MCF) and aquaculture (AC) for CRFM Member States for period 2013-2016**

<b>Member States</b>	<b>MCF prod. + AC prod. (mt) 2013</b>	<b>MCF prod. + AC prod. (mt) 2014</b>	<b>MCF prod. + AC prod. (mt) 2015</b>	<b>MCF prod. + AC prod. (mt) 2016</b>
<b>Anguilla</b>	655	752	396	733
<b>Antigua and Barbuda</b>	1 752	1 709	1 709	1 709
<b>Bahamas</b>	7 845	8 176	7 783	9 286
<b>Barbados</b>	2 735	2 153	1 246	1 436
<b>Belize</b>	8 708	8 244	6 300	2 657
<b>Dominica</b>	479	479	479	479
<b>Grenada</b>	2 698	2 854	2 711	2 823
<b>Guyana</b>	49 794	37 325	36 253	42 278
<b>Haiti</b>	17 060	17 060	18 600	23 600
<b>Jamaica</b>	15 099	11 954	13 723	13 917
<b>Montserrat</b>	40	37	37	37
<b>St. Kitts and Nevis</b>	383	423	454	412
<b>St. Lucia</b>	1 653	1 707	1 639	1 729
<b>St. Vincent and the Grenadines</b>	714	732	809	649
<b>Suriname</b>	38 798	37 788	44 037	42 319
<b>Trinidad and Tobago</b>	13 207	13 205	13 295	13 056
<b>Turks and Caicos Islands</b>	559	559	605	610
<b>Totals</b>	<b>162 179</b>	<b>145 157</b>	<b>150 076</b>	<b>157 732</b>

## CHAPTER 4: EMPLOYMENT IN THE FISHERIES SECTOR OF CRFM MEMBER STATES

### 4.1 Number of persons employed in direct production in the fisheries sector of the CRFM region

The number of persons employed in direct production in the commercial marine capture fisheries and aquaculture sub-sectors (including full time<sup>82</sup> and part time<sup>83</sup> fishers, harvesters and farmers engaged in, artisanal / subsistence<sup>84</sup> and commercial activities) in the CRFM region in 2015/16, was approximately 124,

842 persons (~118,291 persons employed in direct production in the marine capture fisheries and ~6,551 persons employed in direct production in aquaculture). The 2013/14 estimates were 116,265 persons (~112,558 persons employed in direct production in the marine capture fisheries and ~3,707 persons employed in direct production in aquaculture) (Table 20). Fishers who harvest fish exclusively for recreation<sup>85</sup> and or sport as well as those fishers harvesting exclusively from inland freshwater systems (where these fishers were not registered by the fisheries authority of the Member State), were not accounted for as those data were not available. Member States with inland waters/fresh water systems that are of cultural and /or subsistence, and/or economic importance includes; Antigua and Barbuda, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Vincent and the Grenadines and Trinidad and Tobago. However most of these Member States did not have available information on the number of persons employed in direct production from the inland waters and or freshwater systems (rivers, ponds, lakes etc.).

The fisheries sector also provides employment for many persons who supply services and goods to the primary producers. This includes persons engaged in processing, preserving, storing, transporting, marketing and distribution 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. Most CRFM Member State did not have available the number of person involved in supplying goods and services to the fishing industry. However according to FAO (2010), some estimates indicate that, for each person employed in capture fisheries and aquaculture production, about three jobs are produced in the secondary activities, including post-harvest. When this estimate was applied, the total number of persons employed in the fisheries sector of the CRFM region was estimated at approximately 499,368 in 2015/2016 which was approximately 6.2% of the workforce of the region. However using the more conservative estimates provided by Member States, the total number of persons employed in the fisheries sector of the CRFM region was estimated at approximately 284,739 in 2015/2016 which was approximately 3.5% of the workforce of the region (Table 21).

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<sup>82</sup> Full-time fishers receive at least 90% of their livelihood from fishing or spend at least 90% of their working time in that occupation (FAO, 2012a).

<sup>83</sup> Part-time fishers receive at least 30% but less than 90% of their livelihood from fishing or spend at least 30% but less than 90% of their working time in that occupation (FAO, 2012a).

<sup>84</sup> Artisanal fisheries are traditional fisheries involving fishing households (as opposed to commercial companies), using relatively small amount of capital and energy, relatively small fishing vessels (if any), making short fishing trips, close to shore, mainly for local consumption. In practice, definition varies between countries, e.g. from gleaning or a one-man canoe in poor developing countries, to more than 20-m. trawlers, seiners, or long-liners in developed ones. Artisanal fisheries can be subsistence or commercial fisheries, providing for local consumption or export. They are sometimes referred to as small-scale fisheries (FAO, 2005a).

<sup>85</sup> Recreational Fishery can be defined as a non-commercial (i.e. not for sale, barter, or trade) subset of capture/harvest fisheries; motivated by catching fish for fun, pleasure, or sport (Gaudin & De Young, 2007)

**Table 20: Number of persons employed in direct production in the marine capture fisheries, aquaculture and other fisheries dependent activities in Member States of the CRFM region in 2013-2014 and 2015-2016**

MEMBER STATES	Number of persons employed in direct production in the marine commercial capture fisheries <sup>86</sup>		Source (Year of estimate)	Number of persons employed in direct production in aquaculture		Source (Year of estimate)	Number of persons employed in other fisheries dependent activities 2015/2016		Source (Year of estimate)	Fishing Sector Employment (2015/2016 estimates)	
	2013/14	2015/16		2013/14	2015/16		Country provided estimates	Calculated after FAO, 2010**		Country provided estimates	Calculated after FAO, 2010**
<b>Anguilla</b>	164	195	Dept. of Fisheries & Marine Resources Anguilla, 2015* (2013 and 2015 estimates)	0	3	Dept. of Fisheries & Marine Resources Anguilla 2015 & 2017* (2013 and 2015/16 estimate)	NA	594	2013 estimate)	198	792
<b>Antigua and Barbuda</b>	1 847	1 894	Fisheries Division Antigua and Barbuda, 2014 and 2015*( 2014 and 2015 estimates)	2	2	JICA & IC Net Limited, 2012 (2012 estimate)	NA	5 688	Calculated after FAO, 2010** (2011 estimate)	1 896	7 584
<b>Bahamas</b>	9 000	9 000	The Bahamas Fisheries Census 1995 <sup>87</sup>	16	16	Department of Statistics The Bahamas, 2014* (2013 estimate)	NA	27 048	Calculated after FAO, 2010** (2013 estimate)	9 016	36 064
<b>Barbados</b>	2 200	2 200	Government of Barbados, 2004 (2002 estimate)	0	0	JICA & IC Net Limited, 2012 (2011 estimate)	3 800	6 600	Calculated after FAO, 2010**(2013 estimate)	6 000	8 800
<b>Belize</b>	2 500	2 146	CRFM, 2015 (2013 estimate); Fisheries Department Belize, 2016* (2015 estimate)	1 115	2 284	Statistical Institute of Belize, 2014 & 2017* (2013 & 2015 estimates)	1 000	13 290	Gongora, 2012 (2011 estimate)	5 430	17 720
<b>Dominica</b>	1 344	1 344	Fisheries Division Dominica, 2015*(2013 estimate)	5	5	Fisheries Division Dominica, 2015* (2013/2014 estimate)	NA	4 047	Calculated after FAO, 2010** (2013 estimate)	1 349	5 396

<sup>86</sup> The figures presented represent the Member State's registered fishers or the best estimate of number of marine capture fishers and aquaculture farmers in the Member State

<sup>87</sup> Data from the last Bahamas fisheries census conducted in 1995(Deleveaux and Higgs, 1995).

MEMBER STATES	Number of persons employed in direct production in the marine commercial capture fisheries <sup>86</sup>		Source (Year of estimate)	Number of persons employed in direct production in aquaculture		Source (Year of estimate)	Number of persons employed in other fisheries dependent activities 2015/2016		Source (Year of estimate)	Fishing Sector Employment (2015/2016 estimates)	
	2013/14	2015/16		2013/14	2015/16		Country provided estimates	Calculated after FAO, 2010**		Country provided estimates	Calculated after FAO, 2010**
<b>Grenada</b>	2 729	2 729	CRFM, 2014 (2013 estimate)	14	14	Fisheries Division, 2015* (2013/214 estimate)	NA	8 229	Calculated after FAO, 2010**(2013 estimate)	2 743	10 972
<b>Guyana</b>	5 600	6 248	ACP FISH II, 2012a (2009 estimate); Fisheries Division Guyana, 2016*	100	131	JICA & IC Net Limited, 2012 (2011/2012 estimate); Fisheries Division Guyana, 2016*	15 000	19 137	Suseran, 2012 (2011/2012 estimate)	21 379	25 516
<b>Haiti</b>	52 000	52 000	CRFM, 2011a (2010/2011 estimate); Fisheries Department Haiti, 2017* (2015 estimate)	278	1 800	Calculated after Hargreaves, 2011; Webster, 2012 (2010/2011 estimate); Fisheries Department Haiti, 2017* (2015 estimate)	38 000	161 400	Study to determine poverty levels in CARICOM fishing communities, 2009*** (2007/2008 estimate)	91 800	215 200
<b>Jamaica</b>	21 629	23 598	CRFM , 2014 (2013 estimate); Fisheries Division Jamaica, 2016* (2015 estimate)	1 800	1 800	Aquaculture Branch Jamaica, 2015* (estimate 2013/2014)	100 000	76 194	Neufville, 2014 (2011-2012 estimate)	125 398	101 592
<b>Montserrat</b>	101	86	CRFM, 2014 (2013 estimate); Department of Fisheries Montserrat, 2016*(2015 estimate)	0	0	Department of Fisheries Montserrat, 2014*(2013 estimate)	14	258	Statistics Department Montserrat, 2014*(2013 estimate)	100	344
<b>St. Kitts and Nevis</b>	1 140	1 141	CRFM, 2015 (2013 estimate); Fisheries Division St. Kitts and Nevis, 2016 & 2017* (2015 estimate)	1	7	CRFM, 2014 (2013 estimate); Fisheries Division St. Kitts and Nevis, 2016*	NA	3 444	Calculated after FAO, 2010** (2013 estimate)	1 148	4 592

MEMBER STATES	Number of persons employed in direct production in the marine commercial capture fisheries <sup>86</sup>		Source (Year of estimate)	Number of persons employed in direct production in aquaculture		Source (Year of estimate)	Number of persons employed in other fisheries dependent activities 2015/2016		Source (Year of estimate)	Fishing Sector Employment (2015/2016 estimates)	
	2013/14	2015/16		2013/14	2015/16		Country provided estimates	Calculated after FAO, 2010**		Country provided estimates	Calculated after FAO, 2010**
<b>St. Lucia</b>	1 226	2 898	CRFM, 2014 (2013 estimate); Department of Fisheries St. Lucia, 2016* (2015 estimate)	201	274	Department of Fisheries St. Lucia, 2017* (2013 & 2015 estimates)	NA	9 516	Calculated after FAO, 2010** (2013 estimate)	3 172	12 688
<b>St. Vincent and the Grenadines</b>	2 500	1 142	CRFM, 2014 (taken as 2013 estimate); Fisheries Division St. Vincent and the Grenadines (2015 estimate)	0	0	CRFM, 2014 (2013 estimate)	500	3 426	CRFM, 2014 (2013 estimate)	1 642	4 568
<b>Suriname</b>	4 908	8 000	Department of Fisheries Suriname, 2014 & 2017* (2008-2010 estimate) & (2015/16 estimate)	99	99	FAO, 2008 (taken as 2007/2008 estimate)	1 416	24 297	Department of Fisheries Suriname, 2014* (2008-2010 estimate)	9 515	32 396
<b>Trinidad and Tobago</b>	3 414	3 414	Fisheries Division Trinidad and Tobago, 2014* (2012 estimate)	76	116	Fisheries Division Trinidad and Tobago, 2014* (2013-2014 estimate); Fisheries Division Trinidad and Tobago, 2017* (2015-2016 estimate)	NA	10 590	Calculated after FAO, 2010** (2013 estimate)	3 530	14 120
<b>Turks and Caicos Islands</b>	256	256	Department of Environment and Coastal Resources Turks and Caicos Island, 2014* (2012/13 estimate)	0	0	Department of Environment and Coastal Resources Turks and Caicos Island, 2014* (2012/13 estimate)	167	768	Department of Environment and Coastal Resources Turks and Caicos Island, 2014* (2013 estimate)	423	1 024
<b>Totals</b>	<b>112 558</b>	<b>118 291</b>		<b>3 707</b>	<b>6 551</b>		<b>159 897</b>	<b>374 526</b>		<b>284 739</b>	<b>499 368</b>

\* Data collected directly from the Fisheries Data Unit or Statistics Unit in the Member State.

*\*\*Calculated using “Some estimates indicate that, for each person employed in capture fisheries and aquaculture production, about three jobs are produced in the secondary activities” (FAO, 2010)*

*\*\*\*Data submitted to the CRFM Secretariat as part as part of the Diagnostic Study to Determine Poverty Levels in CARICOM Fishing Communities, 2009.*

**Table 21: The labour force (in 2015 or latest estimates to 2015), estimated number of persons employed in the fisheries sector in 2015 and the percentage of the labour force employed in fisheries in 2015 for CRFM Member States**

Member States	Labour force 2015 (or latest estimate to 2015)	Estimated fishing sector employment 2015 (country provided estimates)	% of the labour force employed in fisheries 2015 (calculated from country provide estimates)	Estimated fishing sector employment 2015 (calculated after FAO, 2010)	% of the labour force employed in fisheries 2015 (calculated estimates after FAO, 2010)
Anguilla	6 049 <sup>(1)</sup> (2001 est.)	198	3.3	792	13.1
Antigua and Barbuda	30 000 <sup>(1)</sup> (2006 est.)	1 896	6.3	7 584	25.3
Bahamas	232 360 <sup>(2)</sup>	9 016	3.9	36 064	15.5
Barbados	150 000 <sup>(2)</sup>	6 000	4.0	8 800	5.9
Belize	161 220 <sup>(2)</sup>	5 430	3.4	17 720	11.0
Dominica	25 000 <sup>(1)</sup> 2003 estimate	1 349	5.4	5 396	21.6
Grenada	59 900 <sup>(1)</sup> 2013 estimate	2 743	4.6	10 972	18.3
Guyana	309 870 <sup>(2)</sup>	21 379	6.9	25 516	8.2
Haiti	4 567 000 <sup>(2)</sup>	91 800	2.0	215 200	4.7
Jamaica	1 430 370 <sup>(2)</sup>	125 398	8.8	101 592	7.1
Montserrat	4 521 <sup>(1)</sup> (2012 est.)	100	2.2	344	7.6
St. Kitts and Nevis	17 044 <sup>(3)</sup> (2001 est.)	1 148	6.7	4 592	26.9
St. Lucia	93 720 <sup>(2)</sup>	3 172	3.4	12 688	13.5
St. Vincent and the Grenadines	56 820 <sup>(2)</sup>	1 642	2.9	4 568	8.0
Suriname	210 090 <sup>(2)</sup>	9 515	4.5	32 396	15.4
Trinidad and Tobago	675 950 <sup>(2)</sup>	3 530	0.5	14 120	2.1
Turks and Caicos Islands	18 000 <sup>(4)</sup> (2015/2016 est.)	423	2.4	1 024	5.7
<b>Totals</b>	<b>8 047 914</b>	<b>284 739</b>	<b>3.5</b>	<b>499 368</b>	<b>6.2</b>
<b>% of the workforce involved in the fishing sector of the CRFM region</b>			<b>3.5</b>		<b>6.2</b>

Sources:

<sup>(1)</sup> IndexMundi, 2015. Historical Data Graphs per Year, viewed at <http://www.indexmundi.com/g/g.aspx?v=72&c=av&l=en>

<sup>(2)</sup> The World Bank, 2015. Labour force, total, viewed at <http://data.worldbank.org/indicator/SL.TLF.TOTL.IN>

<sup>(3)</sup> Caribbean Community (CARICOM) Secretariat, 2011.

<sup>(4)</sup> Government of the Turks and Caicos Islands, 2016.

## CHAPTER 5: ECONOMIC IMPORTANCE OF FISHERIES TO THE CRFM REGION

### 5.1 Fisheries contribution to GDP

Table 22 shows the percentage contribution of the fisheries sector to GDP (in current prices) in CRFM Member States 2010 - 2016. The data indicates that, in 2015/2016 the fisheries sector contributed to the GDP of Member States from a low of 0.051% (Trinidad and Tobago 2015) to a high of 3.8% in Suriname 2015<sup>88</sup>.

### 5.2 Economic contribution to livelihoods

Mahon *et al* (2007), showed that as the fish moved through the various market pathways to the consumer it increases in value and contributes to livelihood, and that the overall additional value was 2.6 times the landed value of the fishery.

During the period 2015 - 2016, at ex-vessel prices (the point of first sale) the value of the marine capture fishery production for the region was estimated at approximately US\$414.2 million annually and the value of the aquaculture fishery was US\$48.3 million annually (Table 23 and Table 24), giving a total value of approximately US\$ 462.5 million annually over the period (Table 25).

During the period 2013 - 2014, at ex-vessel prices (the point of first sale) the value of the marine capture fishery production for the region was estimated at approximately US\$409 million annually and the value of the aquaculture fishery was US\$51 million annually, giving a total value of approximately US\$ 460 million annually over the period.

**Table 22: Percentage contribution to gross domestic product (GDP) by the fishing industry of CRFM Member states (in current prices) 2010 – 2016**

Member States	2010 (R)	2011 (R)	2012 (R)	2013 (R)	2014 (R)	2015 (P)	2016 (P)	Source
Anguilla	1.70	2.20	2.28	2.02	1.96	1.91	2.62	Eastern Caribbean Central Bank, 2017
Antigua and Barbuda	0.91	1.11	1.17	1.25	0.80	0.98	0.96	Eastern Caribbean Central Bank, 2017
Bahamas	1.4	1.3	1.3	1.0	1.0	0.9	NA	Caribbean Community (CARICOM) Secretariat, 2016
Barbados	0.14	0.10	0.12	0.21	0.14	0.13	0.15	Government of Barbados, 2017
Belize	2.6	2.1	2.4	3.6	3.5	2.7	1.4	Statistical Institute of Belize, 2017
Dominica	0.30	0.37	0.37	0.34	0.48	0.55	0.49	Eastern Caribbean Central Bank, 2017

<sup>88</sup> GDP for 2016 not available for The Bahamas, Haiti, Jamaica, Suriname Trinidad and Tobago and the Turks and Caicos Islands.



<b>Member States</b>	<b>2010 (R)</b>	<b>2011 (R)</b>	<b>2012 (R)</b>	<b>2013 (R)</b>	<b>2014 (R)</b>	<b>2015 (P)</b>	<b>2016 (P)</b>	<b>Source</b>
<b>Grenada</b>	1.45	1.33	1.61	1.52	1.39	1.40	1.40	Eastern Caribbean Central Bank, 2017
<b>Guyana</b>	2.6	2.2	2.4	2.2	1.7	1.7	1.8	Bureau of Statistics Government of Guyana, 2017
<b>Haiti</b>		1.5	1.5	NA	NA	NA	NA	CRFM, 2011a
<b>Jamaica</b>	0.33	0.36	0.36	0.41	0.50	0.50	NA	Caribbean Community (CARICOM) Secretariat, 2016
<b>Montserrat</b>	0.26	0.31	0.35	0.37	0.38	0.31	0.29	Eastern Caribbean Central Bank, 2017
<b>St. Kitts and Nevis</b>	0.47	0.56	0.54	0.42	0.40	0.39	0.32	Eastern Caribbean Central Bank, 2017
<b>St. Lucia</b>	0.59	0.57	0.57	0.59	0.55	0.52	0.54	Eastern Caribbean Central Bank, 2017
<b>St. Vincent and the Grenadines</b>	0.50	0.47	0.44	0.48	0.48	0.53	0.50	Eastern Caribbean Central Bank, 2017
<b>Suriname</b>	2.4	2.1	1.9	2.4	2.9	3.8	NA	Caribbean Community (CARICOM) Secretariat, 2016
<b>Trinidad and Tobago</b>	0.046	0.038	0.035	0.034	0.037	0.051	NA	Caribbean Community (CARICOM) Secretariat, 2016
<b>Turks and Caicos Islands</b>	0.6	0.6	0.4	0.5	0.5	0.5	NA	Caribbean Community (CARICOM) Secretariat, 2016

*R. - Revised*

*P. - Preliminary*

*NA - Not Available*

**Table 23: Marine capture fish production (meat weight in mt), with corresponding ex-vessel value (in United States dollars) of Member States of the CRFM for period 2015 – 2016**

<b>Countries</b>	<b>Marine capture fish production (meat weight in mt) 2015</b>	<b>Value of marine capture fish production 2015 (in United States dollars)</b>	<b>Sources for values</b>	<b>Marine capture fish production (meat weight in mt) 2016</b>	<b>Value of marine capture fish production 2016 (in United States dollars)</b>	<b>Source for values</b>
<b>Anguilla</b>	396	5 136 210.3	Calculated from prices collected by the Department of Fisheries in 2015	733	9 925 661.0	Calculated from prices collected by the Department of Fisheries 2016
<b>Antigua and Barbuda</b>	1 709	12 783 370.7	Fisheries Division Antigua-Barbuda, 2014	1709	12 783 370.7	Fisheries Division, Antigua-Barbuda, 2014
<b>Bahamas</b>	7 783	65 502 341.2	Department of Marine Resources Bahamas, 2015	9286	75 365 738.1	Department of Marine Resources Bahamas, 2016
<b>Barbados</b>	1 246	6 864 151.6	Calculated from rate from prices provided by Barbados Statistics Department, 2013 & Mahon <i>et al</i> , 2007	1436	7 910 852.0	Calculated from rate from prices provided by Barbados Statistics Department, 2014 & Mahon <i>et al</i> , 2007
<b>Belize</b>	1 548	17 378 316.5	Belize Fisheries Department 2015	1548	15 112 127.2	Belize Fisheries Department 2016
<b>Dominica</b>	479	2 717 398.3	Calculated from 2013 prices, Fisheries Division Dominica, 2013	479	2 717 398.3	Calculated from 2013 prices, Fisheries Division Dominica, 2013
<b>Grenada</b>	2 711	14 077 818.1	Fisheries Division Grenada, 2015	2 823	14 871 320.0	Fisheries Division Grenada, 2016
<b>Guyana</b>	35 835	75 628 191.7	Calculated using rate from prices from	41 808	88 233 945.5	Calculated using rate from prices from

<b>Countries</b>	<b>Marine capture fish production (meat weight in mt) 2015</b>	<b>Value of marine capture fish production 2015 (in United States dollars)</b>	<b>Sources for values</b>	<b>Marine capture fish production (meat weight in mt) 2016</b>	<b>Value of marine capture fish production 2016 (in United States dollars)</b>	<b>Source for values</b>
			Fisheries Department Guyana 2014			Fisheries Department Guyana 2014
<b>Haiti</b>	16 000	60 872 727.3	Calculated using rate from CRFM, 2011a (2011 estimates)	17 200	56 290 909.1	Calculated using rate from CRFM, 2011a (2011 estimates)
<b>Jamaica</b>	13 077	46 739 328.7	Calculated from rate obtained from 2014 value and production	12990	46 198 911.9	Fisheries Division Jamaica 2016
<b>Montserrat</b>	37	283 479.6	Calculated from rate obtained from 2014 value and production	37	283 479.6	Calculated from rate obtained from 2014 value and production
<b>St. Kitts and Nevis</b>	454	3 589 560.1	Calculated using price rate from data collected in St. Kitts in 2015	412	3 257 684.0	Calculated using price rate from data collected in St. Kitts in 2015
<b>St. Lucia</b>	1 616	9 212 533.2	Fisheries Department St. Lucia 2015	1 702	10 030 829.3	Fisheries Department St. Lucia 2016
<b>St. Vincent and the Grenadines</b>	809	4 119 050.0	Fisheries Division St. Vincent and the Grenadines, 2015	649	3 510 356.7	Fisheries Division St. Vincent and the Grenadines 2016
	43915	43 725 726.4	Calculated using rate from Seijo, 2013	42 197	42 015 130.9	Calculated using rate from Seijo, 2013
<b>Trinidad and Tobago</b>	13 271	32 169 353.7	Fisheries Division Trinidad and Tobago, 2018(Calculated from 2014 rate)	13 045	31 621 089.0	Fisheries Division Trinidad and Tobago, 2018 (Calculated from 2014 rate)

<b>Countries</b>	<b>Marine capture fish production (meat weight in mt) 2015</b>	<b>Value of marine capture fish production 2015 (in United States dollars)</b>	<b>Sources for values</b>	<b>Marine capture fish production (meat weight in mt) 2016</b>	<b>Value of marine capture fish production 2016 (in United States dollars)</b>	<b>Source for values</b>
<b>Turks and Caicos Islands</b>	605	3 795 965.1	Calculated from rate obtained from 2014 value and production	610	3 826 397.1	Calculated from rate obtained from 2014 value and production
<b>Totals (mt) / Millions US\$</b>	141 491	404 595 522.4		148 665	423 955 200.6	
<b>Average for region 2015-2016</b>						<b>145 078 mt 414 275 361.5 US\$</b>

*\*Data collected directly from the Fisheries Department/Division*

**Table 24: Aquaculture fish production (meat weight in mt), with corresponding value (in US\$) of Member States of the CRFM for period 2015 -2016**

<b>MEMBER STATES</b>	<b>Aquaculture fish production 2015 (meat weight in mt)</b>	<b>Value of aquaculture fish production 2015(US\$)</b>	<b>Aquaculture fish production 2016 (meat weight in mt)</b>	<b>Value of aquaculture fish production 2016 (US\$)</b>
<b>Anguilla</b>	NA	NA	NA	NA
<b>Antigua and Barbuda</b>	NA	NA	NA	NA
<b>Bahamas</b>	NA	NA	NA	NA
<b>Barbados</b>	0	0	0	0
<b>Belize</b>	4 752	30 334 618	1 109	6 689 392
<b>Dominica</b>	NA	NA	NA	NA
<b>Grenada</b>	NA	NA	NA	NA
<b>Guyana</b>	418	1 390 185	470	1 246 023
<b>Haiti</b>	2 600	13 756 856	6 400	33 863 031
<b>Jamaica</b>	646	2 846 718	927	3 809 470
<b>Montserrat</b>	NA	NA	NA	NA
<b>St. Kitts and Nevis</b>	NA	NA	NA	NA
<b>St. Lucia</b>	24	279 196	27	297 331
<b>St. Vincent and the Grenadines</b>	0	0	0	0
<b>Suriname</b>	122	876 816	122	876 816
<b>Trinidad and Tobago</b>	24	57 887	11	37 060
<b>Turks and Caicos Islands</b>	NA	NA	NA	NA
<b>Totals</b>	<b>8 585</b>	<b>49 542 277</b>	<b>9 067</b>	<b>46 819 124</b>
<b>Average annual value (in US\$) 2015-2016</b>				<b>48 180 700.50</b>

NA- Not Available

**Table 25: Fish production (meat weight in mt) from marine capture fisheries (MCF) and aquaculture (AC) production (prod.) with corresponding value (US\$) of CRFM Member States for period 2015 -2016**

<b>Member States</b>	<b>MCF prod. + AC prod. (meat weight in mt) 2015</b>	<b>Value of MCF prod. + AC prod. 2015 (US\$)</b>	<b>MCF prod. + AC Prod. (meat weight in mt) 2016</b>	<b>Value of MCF prod. + AC prod. 2016 (US\$)</b>	<b>Average Value of MCF prod. + AC prod. 2015 - 2016 (US\$)</b>	<b>Average Value of MCF prod. + AC prod. 2015 - 2016 (in millions of United States dollars)</b>
<b>Anguilla</b>	396	5 136 210	733	9 925 661	7 530 936	7.5
<b>Antigua and Barbuda</b>	1 709	12 783 371	1 709	12 783 371	12 783 371	12.8
<b>Bahamas</b>	7 783	65 502 341	9 286	75 365 738	70 434 040	70.4
<b>Barbados</b>	1 246	6 864 152	1 436	7 910 852	7 387 502	7.4
<b>Belize</b>	6 300	47 712 934	2 657	21 801 519	34 757 227	34.8
<b>Dominica</b>	479	2 717 398	479	2 717 398	2 717 398	2.7
<b>Grenada</b>	2 711	14 077 818	2 823	14 871 320	14 474 569	14.5
<b>Guyana</b>	36 253	77 018 377	42 278	89 479 969	83 249 173	83.2
<b>Haiti</b>	18 600	74 629 584	23 600	90 153 940	82 391 762	82.4
<b>Jamaica</b>	13 723	49 586 047	13 917	50 008 382	49 797 215	49.8
<b>Montserrat</b>	37	283 480	37	283 480	283 480	0.3
<b>St. Kitts and Nevis</b>	454	3 589 560	412	3 257 684	3 423 622	3.4
<b>St. Lucia</b>	1 639	9 491 730	1 729	10 328 160	9 909 945	9.9
<b>St. Vincent and the Grenadines</b>	809	4 119 050	649	3 510 357	3 814 703	3.8
<b>Suriname</b>	44 037	44 602 543	42 319	42 891 947	43 747 245	43.7
<b>Trinidad and Tobago</b>	13 295	32 227 241	13 056	31 658 149	31 942 695	31.9
<b>Turks and Caicos Islands</b>	605	3 795 965	610	3 826 397	3 811 181	3.8
<b>Totals</b>	150 076	454 137 800	157 732	470 774 325	462 456 062	462.5
<b>Average of region 2015-2016</b>			<b>153 693</b>			<b>462.5 million US\$</b>

## CHAPTER 6: TRADE IN FISH AND FISHERY PRODUCTS BY CRFM MEMBER STATES

### 6.1 Imports of fish into the region

In 2015 and 2016 total imports of fish for all CRFM Member States combined (including imports of fish for food, bait and live ornamental fish for breeding or rearing) was approximately 73,922 mt (product weight) annually (73,006 mt in 2015 and 74,837 mt in 2016). Fish imported for food accounted for ~99.8% of the total. The total value of the fish imports for all Member States combined was ~US\$286.6 million in 2015 and ~US\$281.4 million in 2016 (an average of ~US\$284 million annually) Tables 26, 27 and 28.

**Table 26: Product weight (in mt) and value (in millions of United States dollars) of imports of fish for food bait and ornamental purposes by CRFM Member States 2015**

Member States	Weight of fish imports for food (mt 2015)	Value of fish imports for food (2015 in millions of United States dollars )	Weight of fish imports for ornamental purposes (mt 2015)	Value of fish imports for ornamental purposes (2015 in millions of United States dollars)	Weight of fish imports for bait (mt 2015)	Value of fish imports for bait (2015 in millions of United States dollars)	Total weight of fish imports for food, bait & ornamentals (mt 2015)	Total value of fish imports for food, bait and ornamentals (2015 in millions of United States dollars)
Anguilla (2010 est)	450	1.9	0.7	0.007			451	1.9
Antigua and Barbuda	1 685	6.4	0.8	0.006			1 686	6.4
Bahamas	4 147	23.6	18.8	0.135	47.7	0.2	4 214	24.0
Barbados	6 276	25.5	0.0	0.000			6 276	25.5
Belize	295	0.6	3.9	0.234			299	0.9
Dominica	641	2.3	0.0	0.000			641	2.3
Grenada	589	2.1	0.8	0.007			590	2.1
Guyana	1 365	2.5	1.7	0.011			1 366	2.5
Haiti (2009 est.)	12 500	46.1					12 500	46.1
Jamaica	27 326	103.8	0.3	0.007			27 327	103.8
Montserrat	77	0.32	0.02	0.0002			77	0.32
St. Kitts and Nevis	740	3.7	1.5	0.005			742	3.7
St. Lucia	1 831	9.7	1.1	0.019			1 833	9.7
St. Vincent and the Grenadines	477	2.3	0.5	0.002			477	2.3
Suriname	958	2.2					958	2.2
Trinidad and Tobago	12 081	46.5	3.7	0.038			12 085	46.5
Turks and Caicos Islands	1 487	6.3					1 487	6.3
<b>Totals</b>	<b>72 925</b>	<b>285.9</b>	<b>33.7</b>	<b>0.472</b>	<b>47.7</b>	<b>0.2</b>	<b>73 006</b>	<b>286.6</b>

Source: data collected directly from the Government Statistical Department of the Member State unless otherwise stated.

**Table 27: Product weight (in mt) and value (in millions of United States dollars) of imports of fish for food, bait and ornamental purposes by CRFM Member States 2016**

Member States	Weight of fish imports for food (mt 2016)	Value of fish imports for food (2016 in millions of United States dollars )	Weight of fish imports for ornamental purposes (mt 2016)	Value of fish imports for ornamental purposes (2016 in millions of United States dollars)	Weight of fish imports for bait (mt 2016)	Value of fish imports for bait (2016 in millions of United States dollars)	Total weight of fish imports for food, bait and ornamentals (mt 2016)	Total value of fish imports for food, bait and ornamentals (2016 in millions of United States dollars)
Anguilla (2010 est.)	450	1.9	0.7	0.007			451	1.9
Antigua and Barbuda	1 659	6.3	0.6	0.005			1 660	6.3
Bahamas	4 544	27.2	17.4	0.138	54.6	0.3	4 616	27.6
Barbados	6 234	23.3	0.5	0.008			6 234	23.3
Belize	386	0.7	7.0	0.253			393	0.9
Dominica	555	2.0	0.0	0.000			555	2.0
Grenada	590	2.3	0.6	0.006			591	2.3
Guyana	1 555	3.1	1.8	0.010			1 556	3.1
Haiti (2009 est.)	12 500	46.1					12 500	46.1
Jamaica	29 882	103.4	0.5	0.004			29 882	103.4
Montserrat	66	0.4	0.00	0.000			66	0.4
St. Kitts and Nevis	1 148	5.7	0.9	0.007			1 149	5.7
St. Lucia	1 744	8.7	1.1	0.008			1 745	8.8
St. Vincent and the Grenadines	641	2.4	0.6	0.002			642	2.4
Suriname	500	1.3					500	1.3
Trinidad and Tobago	10 713	38.8	3.3	0.039			10 716	38.9
Turks and Caicos Islands	1 580	7.2					1 580	7.2
<b>Totals</b>	<b>74 748</b>	<b>280.7</b>	<b>35.2</b>	<b>0.485</b>	<b>54.6</b>	<b>0.3</b>	<b>74 837</b>	<b>281.5</b>

Source: data collected directly from the Government Statistical Department of the Member State unless otherwise stated.

A comparison of the weight and value of the fish imported in 2015 and 2016 for each country showed that the weight and value of imported fish remained fairly constant over the period (Table 28 and Figure 7). The three largest importers of fish (metric tonnes of fish imported) among the CRFM Member States over the period were Jamaica, Haiti, and Trinidad and Tobago respectively (Table 28 and Figure 7). Jamaica, Haiti (2009 estimate) and Trinidad and Tobago also had the highest values associated with the import of fish for food, bait and ornamentals (Table 29 and Figure 8).

**Table 28: Weight of imports and average weight of imports of fish for food bait and ornamental purposes (product weight in mt) by CRFM Member States for the period 2015 – 2016**



<b>Member States</b>	<b>Weight of fish imports for food, bait and ornamentals 2015 (mt)</b>	<b>Weight of fish imports for food, bait and ornamentals 2016 (mt)</b>	<b>Average weight of fish imports for food, bait and ornamentals 2015 - 2016 (mt)</b>
<b>Jamaica</b>	27 327	29 882	28 604
<b>Haiti*</b> (2009 estimate)	12 500	12 500	12 500
<b>Trinidad and Tobago</b>	12 085	10 716	11 400
<b>Barbados</b>	6 276	6 234	6 255
<b>Bahamas</b>	4 214	4 616	4 4195
<b>St. Lucia</b>	1 833	1 745	1 789
<b>Antigua and Barbuda</b>	1 686	1 660	1 673
<b>Turks and Caicos Islands</b>	1 487	1 580	1 533
<b>Guyana</b>	1 366	1 556	1 461
<b>St. Kitts and Nevis</b>	742	1 149	945
<b>Suriname</b>	958	500	729
<b>Dominica</b>	641	555	598
<b>Grenada</b>	590	591	590
<b>St. Vincent and the Grenadines</b>	477	642	559
<b>Anguilla*</b> (2010 estimate)	451	451	451
<b>Belize</b>	299	393	346
<b>Montserrat</b>	77	66	72
<b>Totals</b>	<b>73 006</b>	<b>74 837</b>	<b>73 922</b>

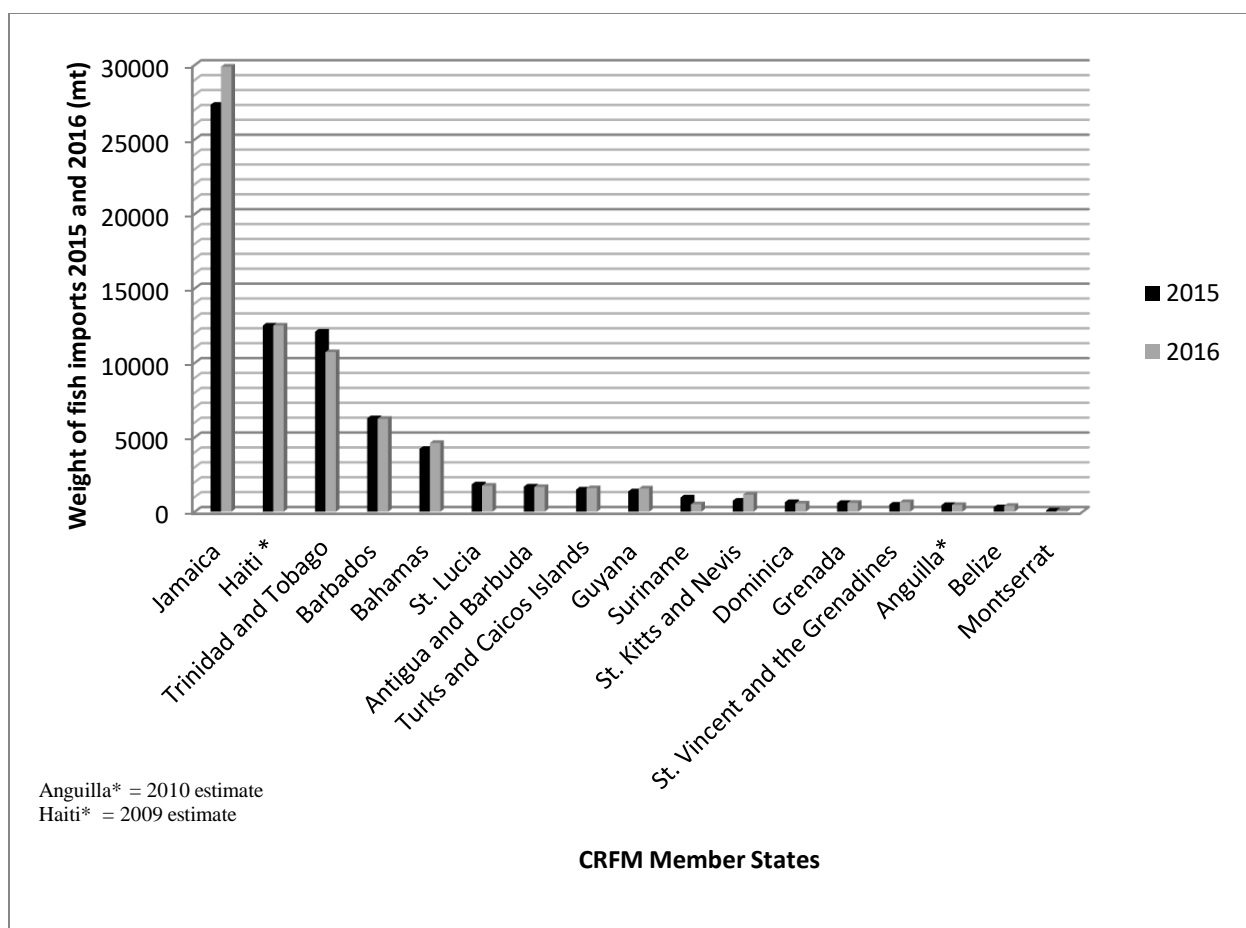


Figure 7: Product weight of imports of fish for food, bait and ornamental purposes (in mt) by CRFM Member States for 2015 and 2016.

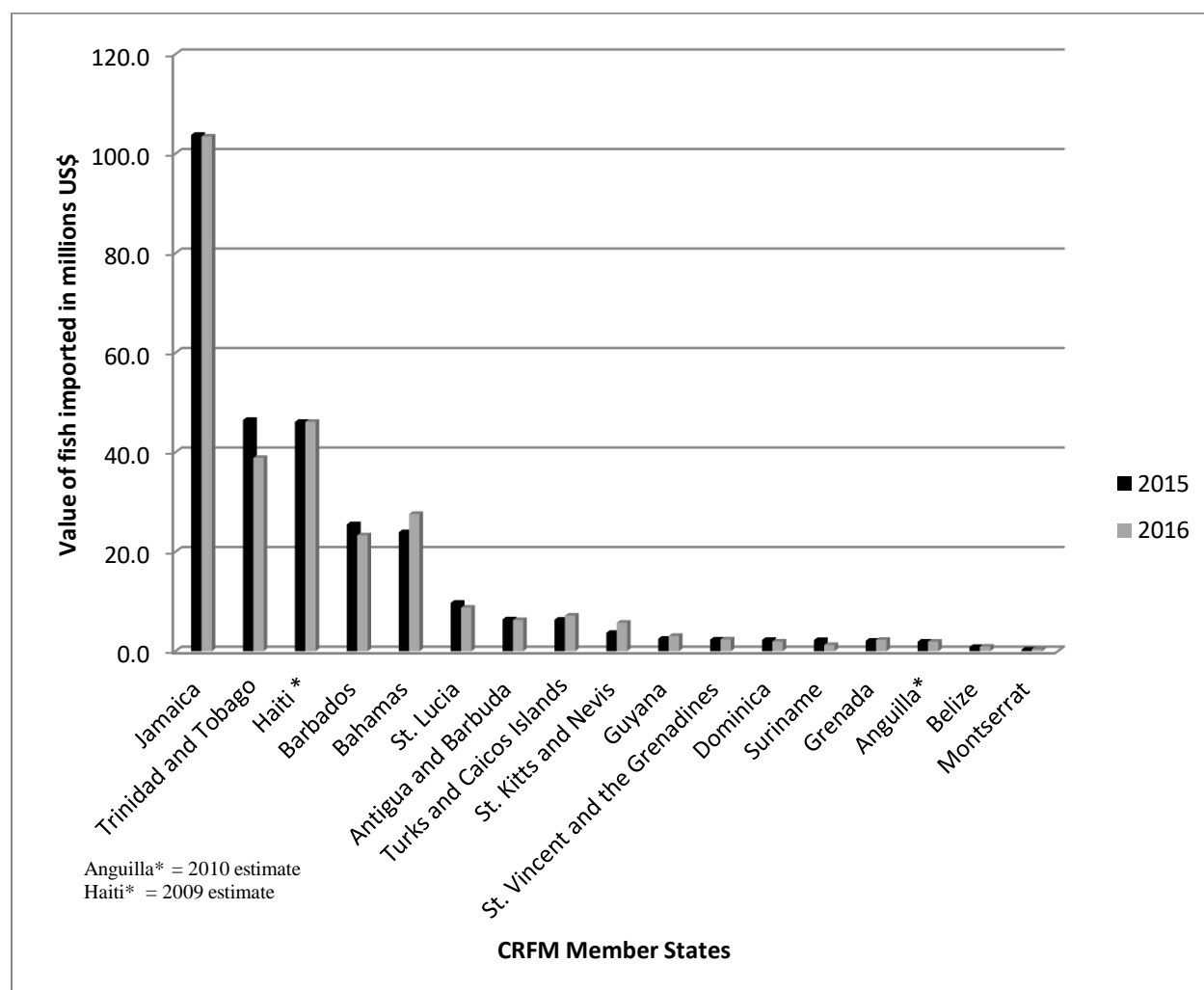
Table 29: Value and average value of fish imported for food, bait and ornamental purposes (in millions of United States dollars) by CRFM Member States for period 2015 – 2016.

Member States	Value of fish imported for food, bait and ornamentals 2015 (millions US\$)	Value of fish imported for food, bait and ornamentals 2016 (millions US\$)	Average value of fish imported for food, bait and ornamentals 2015-2016 (millions US\$)
<b>Jamaica</b>	103.8	103.4	103.6
<b>Trinidad and Tobago</b>	46.5	38.9	42.7
<b>Haiti *</b>	46.1	46.1	46.1
<b>Barbados</b>	25.5	23.3	24.4
<b>Bahamas</b>	23.9	27.6	25.8
<b>St. Lucia</b>	9.7	8.8	9.2
<b>Antigua and Barbuda</b>	6.4	6.3	6.3
<b>Turks and Caicos Islands</b>	6.3	7.2	6.8
<b>St. Kitts and Nevis</b>	3.7	5.7	4.7
<b>Guyana</b>	2.5	3.1	2.8

Member States	Value of fish imported for food, bait and ornamentals 2015 (millions US\$)	Value of fish imported for food, bait and ornamentals 2016 (millions US\$)	Average value of fish imported for food, bait and ornamentals 2015-2016 (millions US\$)
St. Vincent and the Grenadines	2.3	2.4	2.4
Dominica	2.3	2.0	2.1
Suriname	2.2	1.3	1.8
Grenada	2.1	2.3	2.2
Anguilla*	1.9	1.9	1.9
Belize	0.9	0.9	0.9
Montserrat	0.3	0.4	0.4
<b>Totals</b>	<b>286.6</b>	<b>281.4</b>	<b>284.0</b>

*Haiti* \* - 2009 estimate

*Anguilla*\* - 2010 estimate



**Figure 8: Value (in millions of United States dollars) of fish imported for food, bait and ornamental purposes by CRFM Member States for period 2015 and 2016**

In 2015 and 2016 CRFM Member States imported an additional 48% of the production from marine capture fisheries plus aquaculture production of the region that was fit for human consumption. Fish fit for human consumption included the categories chilled fresh or frozen fish, dried salted smoked pickled (cured) fish and canned fish. Imports of chilled/fresh or frozen fish accounted for 41% of the edible fish imported, canned fish accounted for approximately 42% while imports of dried, salted, smoked, pickled (cured) fish accounted for approximately 17% of product weight (Table 30 and Figure 9,10 and 11).

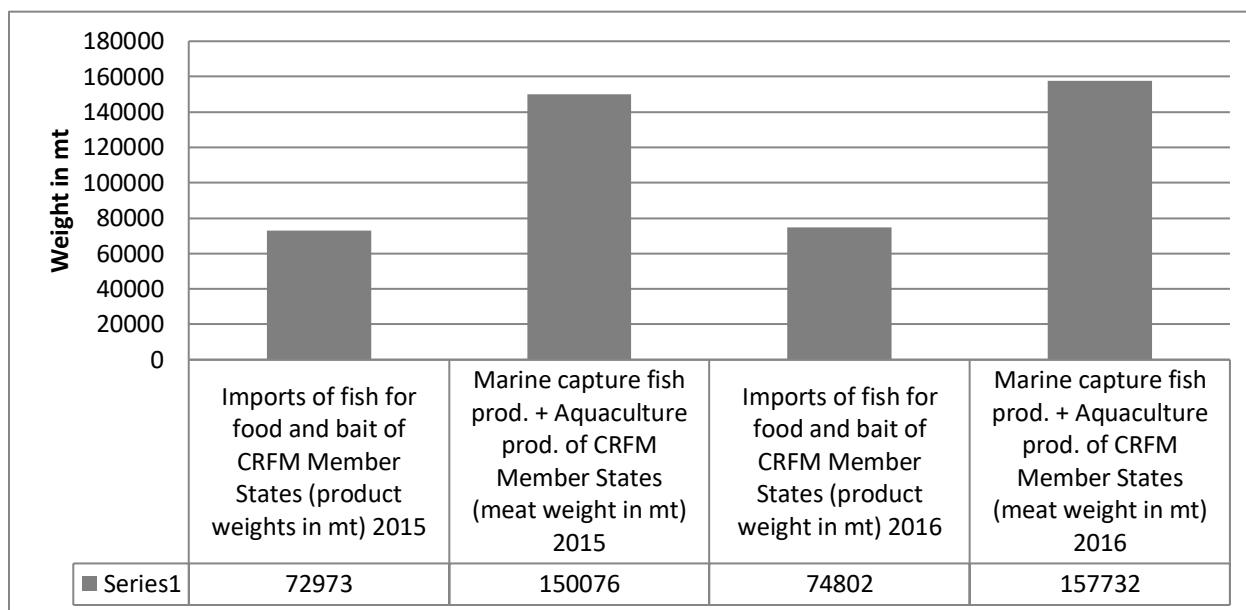
**Table 30: Fish imports (product weight) by categories of chilled, fresh or frozen (mt), dried salted smoked pickled (cured) (mt) and canned (mt), imported by CRFM Member States in 2016**

Countries	Imports of chilled fresh or frozen fish 2016 (mt)	Imports of dried, salted, smoked, pickled (cured) fish 2016(mt)	Imports of canned fish 2016(mt)	Total fish imports 2016(mt)	Sources
Anguilla*	262.0	65.1	123.1	450.2	Department of Statistics Anguilla, 2014
Antigua and Barbuda	600.3	688.1	370.6	1 659.0	Statistics Division Antigua and Barbuda, 2017
Bahamas	1 854.5	141.2	2 548.6	4 544.3	Department of Statistics Bahamas, 2017
Barbados	3 041.8	690.9	2 501.4	6 234.0	Barbados Statistical Service, 2017
Belize	83.5	1.0	301.6	386.0	Statistical Institute of Belize, 2017
Dominica	60.2	238.2	256.7	555.2	Central Statistics Office of Dominica, 2017
Grenada	92.5	74.4	423.4	590.4	Grenada Statistics Department, 2017
Guyana	253.1	19.1	1 282.3	1 554.5	Bureau of Statistics Guyana, 2017
Haiti*	0.0	0.0	0.0	12 500.0	CRFM. 2011a
Jamaica	12 357.9	4 756.6	12 767.2	29 881.7	Statistical Institute of Jamaica, 2017
Montserrat	28.9	19.1	18.3	66.3	Montserrat Statistics Department, 2017
St. Kitts and Nevis	625.6	225.7	296.5	1 147.9	Statistics Department St. Kitts and Nevis, 2017
St. Lucia	403.4	423.3	917.7	1 744.4	Central Statistics Office St. Lucia, 2017
St. Vincent and the Grenadines	98.4	349.4	193.5	641.3	Statistical Office Central Planning Division St. Vincent & the Grenadines, 2017
Suriname	0.0	0.0	0.0	500.3	General Bureau of Statistics, 2017
Trinidad and Tobago*	4 772.5	2 422.5	3 517.7	10 712.6	Central Statistical Office Trinidad & Tobago, 2017
Turks and Caicos Islands*	1 131.5	200.9	247.1	1 579.5	Customs Department, Turks and Caicos Islands, 2017
<b>Totals</b>	<b>25 666.1</b>	<b>10 315.6</b>	<b>25 765.7</b>	<b>74 747.7</b>	

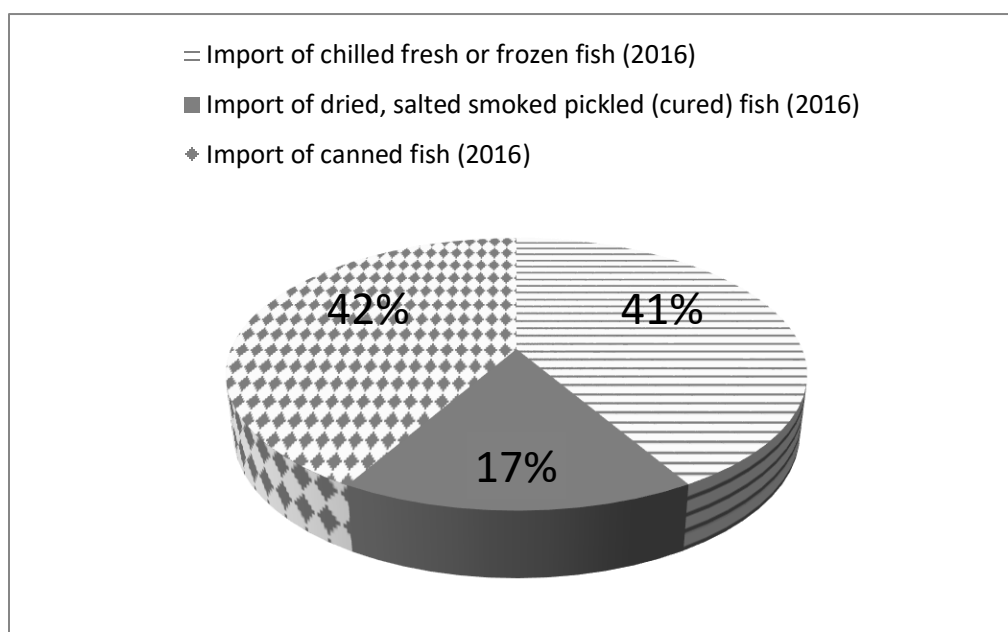
Anguilla\* - 2010 estimate

Haiti \* - 2009 estimate

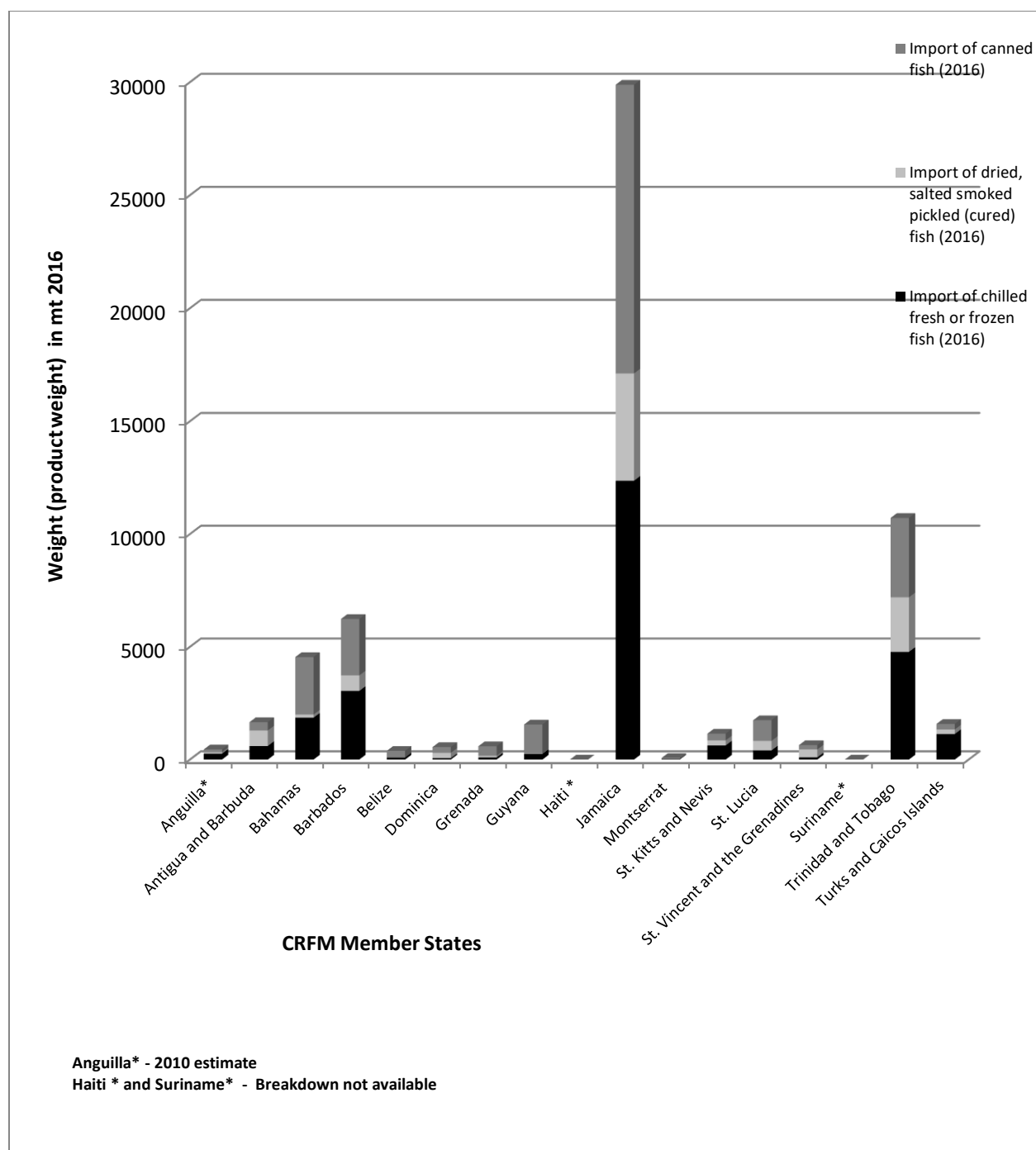
NB: Imports weights are product weights.



**Figure 9: Fish imports for food and bait (product weight in mt) versus the total production from marine capture fisheries and aquaculture production (meat weight in mt) of the Member States of the CRFM in 2015 & 2016.**



**Figure 10: Categories of fish products (product weight) by percentage composition, imported into the CRFM region in 2016.**



**Figure 11: Fish imports by categories of; chilled fresh or frozen, dried salted smoked pickled (cured) and canned (product weight in mt), imported by CRFM Member States in 2016**

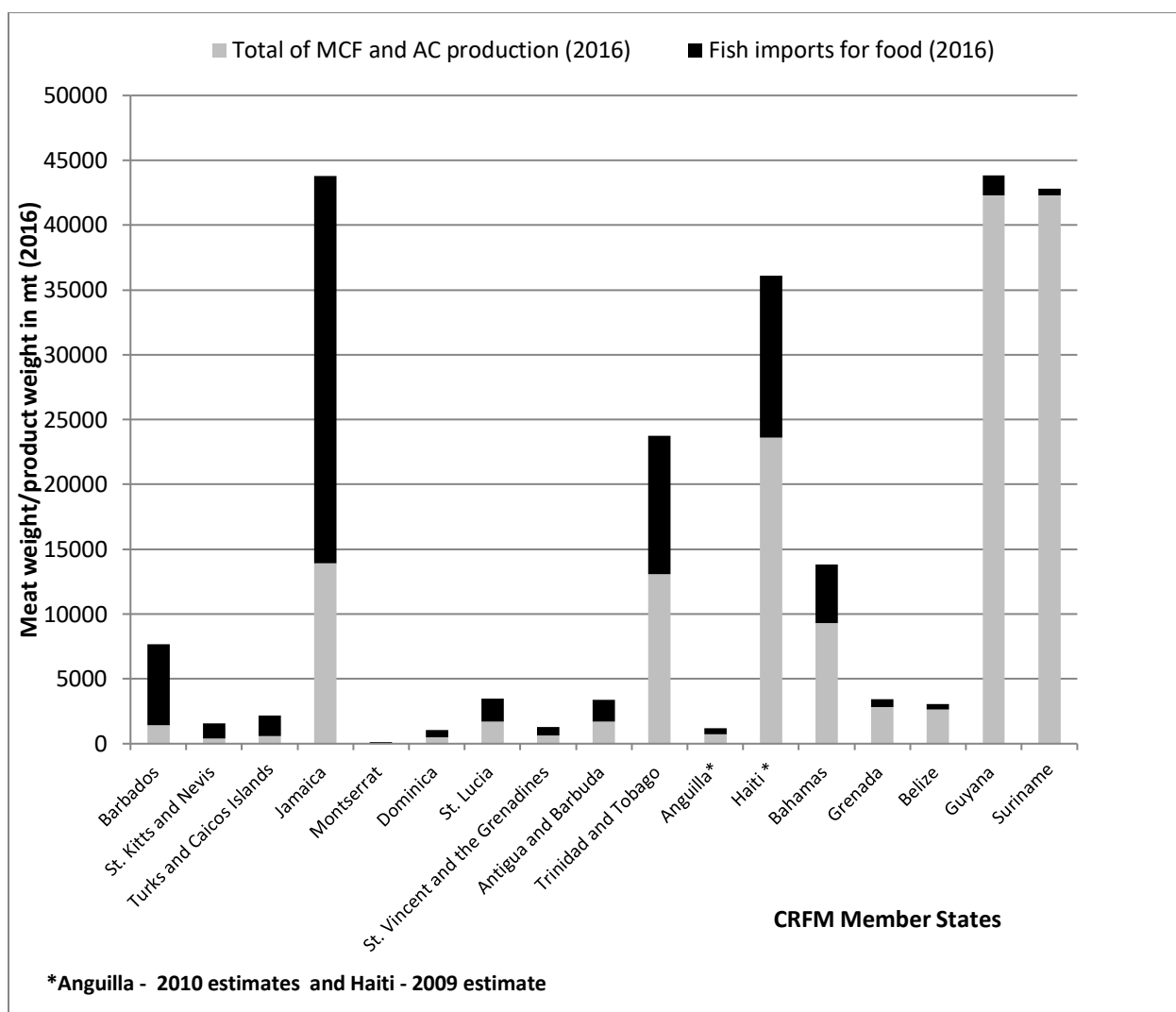
Barbados imported (for food) more than 400% (or greater than 4 times the amount) of the meat weight production from the marine capture fisheries and the aquaculture production in 2016. Member States that imported more than 100% of the meat weight production from the marine capture fisheries and the aquaculture production in 2016 included; St. Kitts and Nevis, Turks and Caicos Islands, Jamaica, Montserrat, Dominica and St. Lucia (Table 31 and Figure 12).

**Table 31. Fish imports for food 2016 of the CRFM Member States expressed as a percentage of the marine capture fisheries (MCF) and the aquaculture production (AC prod.) 2016**

<b>Member States</b>	<b>MCF prod. + AC prod. (meat weight in mt) 2016</b>	<b>Fish imports for food (product weight in mt) 2016</b>	<b>% of MCF prod. + AC prod. that was imported in 2016</b>
<b>Barbados</b>	1 436	6 234	434
<b>St. Kitts and Nevis</b>	412	1 148	279
<b>Turks and Caicos Islands</b>	610	1 580	259
<b>Jamaica</b>	13 917	29 882	215
<b>Montserrat</b>	37	66	179
<b>Dominica</b>	479	555	116
<b>St. Lucia</b>	1 729	1 744	101
<b>St. Vincent and the Grenadines</b>	649	641	99
<b>Antigua and Barbuda</b>	1 709	1 659	97
<b>Trinidad and Tobago</b>	13 056	10 713	82
<b>Anguilla*</b>	733	450	61
<b>Haiti *</b>	23 600	12 500	53
<b>Bahamas</b>	9 286	4 544	49
<b>Grenada</b>	2 823	590	21
<b>Belize</b>	2 657	386	15
<b>Guyana</b>	42 278	1 555	4
<b>Suriname</b>	42 319	500	1
<b>Totals</b>	<b>157 732</b>	<b>74 748</b>	

*Anguilla\** - 2010 estimates.

*Haiti\** - 2009 estimates.



**Figure 12: Weight of fish imported for food (product weight in metric tonnes) vs the meat weight production from the marine capture fisheries and the aquaculture production of CRFM Member States in 2016.**

## 6.2 Fish exports from the CRFM region

In 2015 and 2016 total domestic exports<sup>89</sup> of fish from the CRFM region (including exports of fish for food, bait and live ornamental fish for breeding or rearing) was approximately 65,814 mt annually (69,250 mt in 2015 and 62,377 mt in 2016). Fish exported for food accounted for ~99.9% of the total. The total value of the domestic exports from all Member States combined was US\$263.3 million in 2015 and US\$256.2 million in 2016 (an average of ~US\$259.7 million annually) (Tables 32, 33 and 34).

<sup>89</sup> Exports of goods which were grown, produced, mined, or manufactured in the country from which exported.



**Table 32: Product weight (mt) and value (in millions of United States dollars) of domestic exports of fish for food, bait and ornamental purposes by CRFM Member States 2015**

Member States	Domestic exports of fish for food 2015 (mt)	Value of domestic exports of fish for food 2015 (in millions of United States dollars)	Domestic exports of fish for ornamental purposes 2015 (mt)	Value of domestic exports of fish for ornamental purposes 2015 (in millions of US dollars)	Domestic export of fish for bait (mt 2015)	Value of domestic exports of fish for bait 2015 (in millions of United States dollars)	Total weight of domestic exports of fish for food, bait and ornamental 2015 (mt)	Total value of domestic exports of fish for food, bait and ornamental 2015 (in millions of US dollars)
Anguilla (2010 est.)	0	0.0					0	0.0
Antigua and Barbuda	0.01	0.0001					0.01	0.0001
Bahamas	2 502	62.1			0.0	0.000	2 502	62.1
Barbados	189	0.5	0.0	0.000			189	0.5
Belize	5 395	44.6	2.4	0.020			5 397	44.6
Dominica	9	0.02					9	0.02
Grenada	812	8.5					812	8.5
Guyana	23 086	87.3	7.8	0.013			23 094	87.3
Haiti (2009 est.)	0						0	0.0
Jamaica	674	10.3	25.3	0.301			700	10.6
Montserrat	0						0	0.0
St. Kitts and Nevis	27	0.1	0.01	0.0001			27	0.1
St. Lucia	1.7	0.0080					1.7	0.0080
St. Vincent and the Grenadines	114	0.6	5.2	0.019			120	0.6
Suriname	32 376	36.5					32 376	36.5
Trinidad and Tobago	3 793	9.5	53.9	0.132			3 847	9.6
Turks and Caicos Islands	178	2.9					178	2.9
<b>Totals</b>	<b>69 156</b>	<b>262.8</b>	<b>94.6</b>	<b>0.486</b>	<b>0.0</b>	<b>0.000</b>	<b>69 250</b>	<b>263.3</b>

Source: data collected directly from the Government Statistical Department of the Member State unless otherwise stated.

**Table 33: Product weight (in mt) and value (in millions of United States dollars) of domestic exports of fish for food, bait and ornamental purposes by CRFM Member States 2016**

Member States	Domestic exports of fish for food (mt 2016)	Value of domestic exports of fish for food (2016 in millions of United States dollars )	Domestic exports of fish for ornamental purposes (mt 2016)	Value of domestic exports of fish for ornamental purposes (2016 in millions of United States dollars)	Domestic export of fish for bait (mt 2016)	Value of domestic exports of fish for bait (2016 in millions of United States dollars)	Total weight of domestic exports of fish for food, bait and ornamentals (mt 2016)	Total value of domestic exports of fish for food, bait and ornamentals (2016 in millions of United States dollars)
Anguilla (2010 est.)	0	0.0					0	0.0
Antigua and Barbuda	10	0.02					10	0.02
Bahamas	2 287	70.9			0.1	0.001	2 287	70.9
Barbados	223	0.6					223	0.6
Belize	1 665	21.6	1.8	0.015			1 666	21.6
Dominica	9	0.07					9	0.07
Grenada	630	6.0					630	6.0
Guyana	23 784	99.3	3.8	0.001			23 788	99.3
Haiti (2009 est.)	0						0	0.0
Jamaica	721	11.7	2.6	0.020			724	11.7
Montserrat	0						0	0.0
St. Kitts and Nevis	37	0.2	0.0	0.000			37	0.2
St. Lucia	2	0.01					2	0.01
St. Vincent and the Grenadines	104	0.6	1.1	0.0040			105	0.6
Suriname	27 986	31.4					27 986	31.4
Trinidad and Tobago	4 797	12.2	19.3	0.062			4 816	12.2
Turks and Caicos Islands	93	1.4					93	1.4
<b>Totals</b>	<b>62 349</b>	<b>256.1</b>	<b>28.6</b>	<b>0.102</b>	<b>0.130</b>	<b>0.001</b>	<b>62 377</b>	<b>256.2</b>

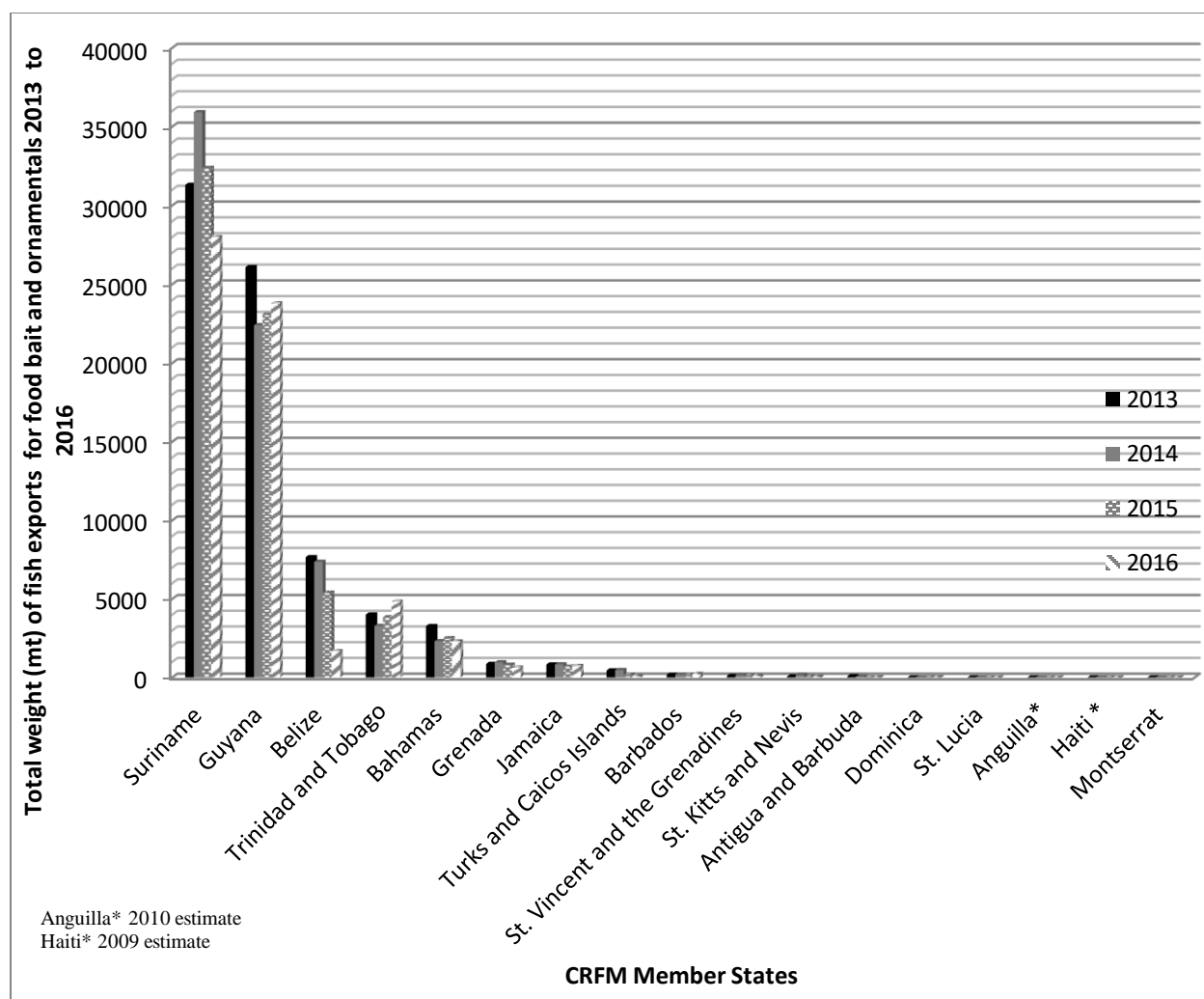
Source: data collected directly from the Government Statistical Department of the Member State unless otherwise stated.

Over the period 2013 to 2016 Suriname followed by Guyana exported the highest weights, Suriname exported ~ 31,893 mt annually and Guyana exported ~23,844 mt annually (Table 34 and Figure 13).

**Table 34: Total and average weight (product weight in mt) of domestic exports of fish for food, bait and ornamental purposes from CRFM Member States 2013 to 2016**

<b>Member States</b>	<b>Total weight of domestic exports of fish for food, bait and ornamentals (mt 2013)</b>	<b>Total weight of domestic exports of fish for food, bait and ornamentals (mt 2014)</b>	<b>Total weight of domestic exports of fish for food, bait and ornamentals (mt 2015)</b>	<b>Total weight of domestic exports of fish for food, bait and ornamentals (mt 2016)</b>	<b>Average weight of domestic exports of fish for food, bait and ornamentals (mt 2013 to 2016)</b>
<b>Suriname</b>	31 301	35 909	32 376	27 986	31 893
<b>Guyana</b>	26 089	22 404	23 094	23 788	23 844
<b>Belize</b>	7 654	7 359	5 397	1 666	5 519
<b>Trinidad and Tobago</b>	4 008	3 277	3 847	4 816	3 987
<b>Bahamas</b>	3 272	2 308	2 502	2 287	2 592
<b>Grenada</b>	861	963	812	630	817
<b>Jamaica</b>	824	834	700	724	770
<b>Turks and Caicos Islands</b>	448	469	178	93	297
<b>Barbados</b>	173	187	189	223	193
<b>St. Vincent and the Grenadines</b>	99	144	120	105	117
<b>Antigua and Barbuda</b>	78	43	0	10	33
<b>St. Kitts and Nevis</b>	64	167	27	37	74
<b>St. Lucia</b>	0.1	2	2	2	1.3
<b>Anguilla (2010 estimates)</b>	0.0	0.0	0	0	0.0
<b>Dominica</b>	0.0	0.0	9	9	4.3
<b>Haiti (2009 estimate)</b>	0.0	0.0	0.0	0.0	0.0
<b>Montserrat</b>	0.0	0.0	0	0	0.0
<b>Totals</b>	<b>74 871</b>	<b>74 067</b>	<b>69 250</b>	<b>62 377</b>	<b>70 141</b>

*Trinidad and Tobago\* and Turks and Caicos Islands\* - Estimate for imports of canned fish were not available for 2013 and 2014.*

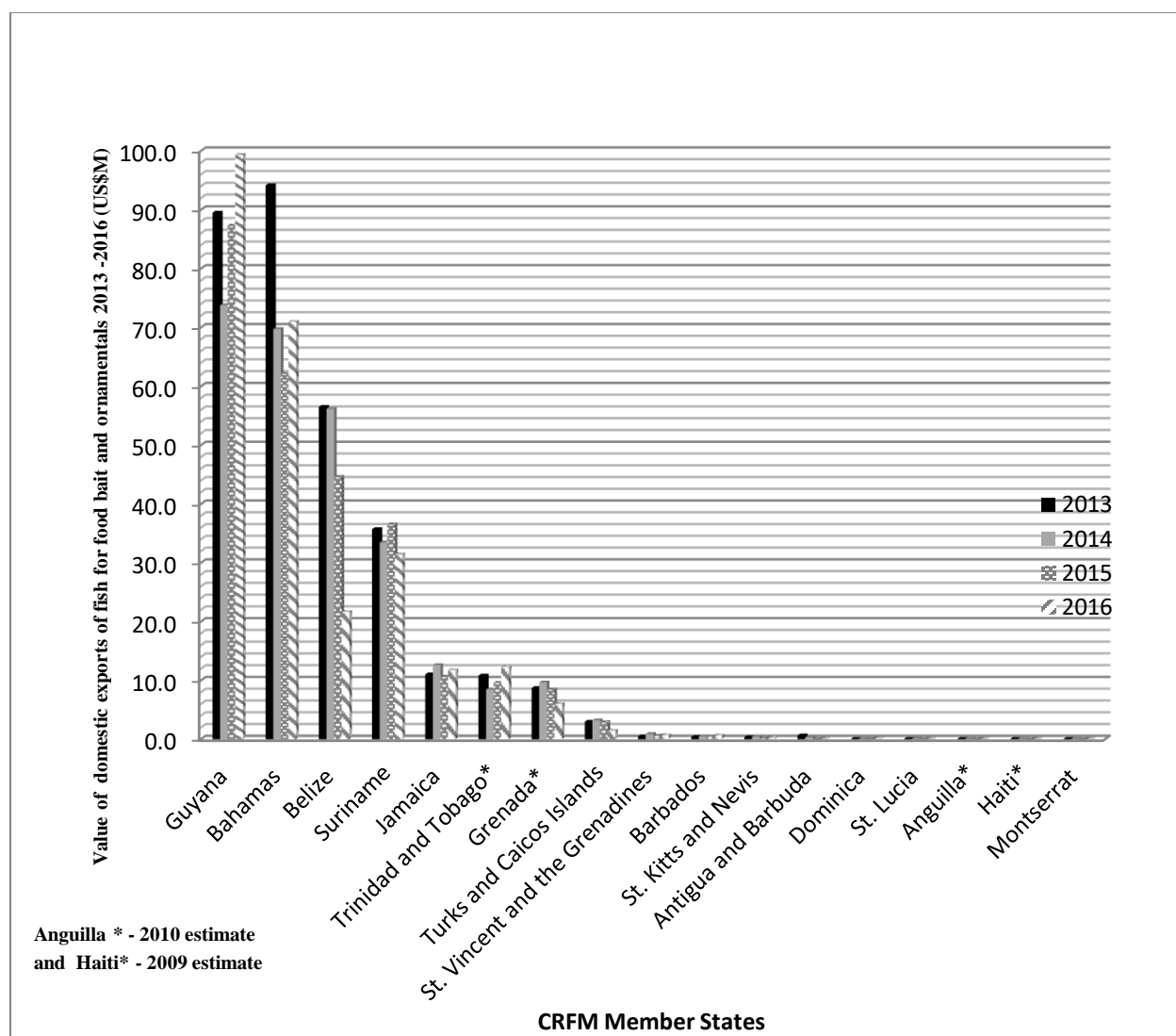


**Figure 13: Total weight (product weight in mt) of fish domestic exports for food, bait and ornamental purposes 2013 to 2016**

A comparison of the value of the total fish exports at the country level over the period of 2013 to 2016 showed that Guyana had the highest value for fish exported with an average of US\$87.5 million annually and was followed by The Bahamas with an average of US\$74.2 million annually (Table 35 and Figure 14).

**Table 35: Value and average value of domestic exports of fish for food, bait and ornamental purposes (in millions of United States dollars) from CRFM Member States for 2013 to 2016**

<b>Member States</b>	<b>Value of domestic exports of fish for food, bait and ornamentals 2013 (in millions of United States dollars)</b>	<b>Value of domestic exports of fish for food, bait and ornamentals 2014 (in millions of United States dollars )</b>	<b>Value of domestic exports of fish for food, bait and ornamentals 2015 (in millions of United States dollars )</b>	<b>Value of domestic exports of fish for food, bait and ornamentals 2016 (in millions of United States dollars )</b>	<b>Average value of domestic exports of fish for food, bait and ornamentals 2013 to 2016 (in millions of United States dollars )</b>
<b>Guyana</b>	89.5	73.8	87.3	99.3	87.5
<b>Bahamas</b>	94.1	69.7	62.1	70.9	74.2
<b>Belize</b>	56.5	56.2	44.6	21.6	44.7
<b>Suriname</b>	35.7	33.4	36.5	31.4	34.3
<b>Jamaica</b>	11.0	12.6	10.6	11.7	11.5
<b>Trinidad and Tobago*</b>	10.8	8.4	9.6	12.2	10.3
<b>Grenada*</b>	8.7	9.6	8.5	6.0	8.2
<b>Turks and Caicos Islands</b>	3.0	3.2	2.9	1.4	2.6
<b>St. Vincent and the Grenadines</b>	0.5	0.9	0.6	0.6	0.6
<b>Barbados</b>	0.4	0.4	0.5	0.6	0.5
<b>St. Kitts and Nevis</b>	0.3	0.4	0.1	0.2	0.3
<b>Antigua and Barbuda</b>	0.6	0.3	0.0	0.0	0.2
<b>Dominica</b>	0.0	0.0	0.02	0.1	0.0
<b>St. Lucia</b>	0.0004	0.024	0.008	0.008	0.0100
<b>Anguilla*</b>	0.0	0.0	0.0	0.0	0.0
<b>Haiti*</b>	0.0	0.0	0.0	0.0	0.0
<b>Montserrat</b>	0.0	0.0	0.0	0.0	0.0
<b>Totals</b>	<b>311.0</b>	<b>268.9</b>	<b>263.3</b>	<b>256.2</b>	<b>274.8</b>



**Figure 14: Value of domestic exports of fish for food, bait and ornamental purposes (in millions US dollars) from CRFM Member States for 2013 and 2016**

In 2015 domestic exports of fish for food from the CRFM region was approximately 69,250 mt (46% of the meat weight production from marine capture fisheries plus aquaculture production of the region). In 2016 domestic exports fell slightly to 62,377 mt and this corresponded to 44% of the meat weight production from marine capture fisheries plus aquaculture production of the region (Table 29 and Figure 11). The corresponding figure for 2013 and 2014 were 46% and 44% respectively.

A small portion of the fish imported was re-exported (of 62,349 mt imported by 16 CRFM Member States<sup>90</sup> 1,154 mt (~2%) was re-exported). The three largest domestic exporters of fish (metric tonnes of fish exported) among the CRFM Member States in 2015/2016 were Suriname, Guyana and Belize respectively, together they accounted for 88% of total domestic exports of fish from the region (Table 36 and Figure 15).

**Table 36: Domestic exports of fish for food, total domestic fish exports and re-exports (product weight in mt) 2016 and percentage contribution by Member State to total export of the CRFM region 2016 and 2013-2016**

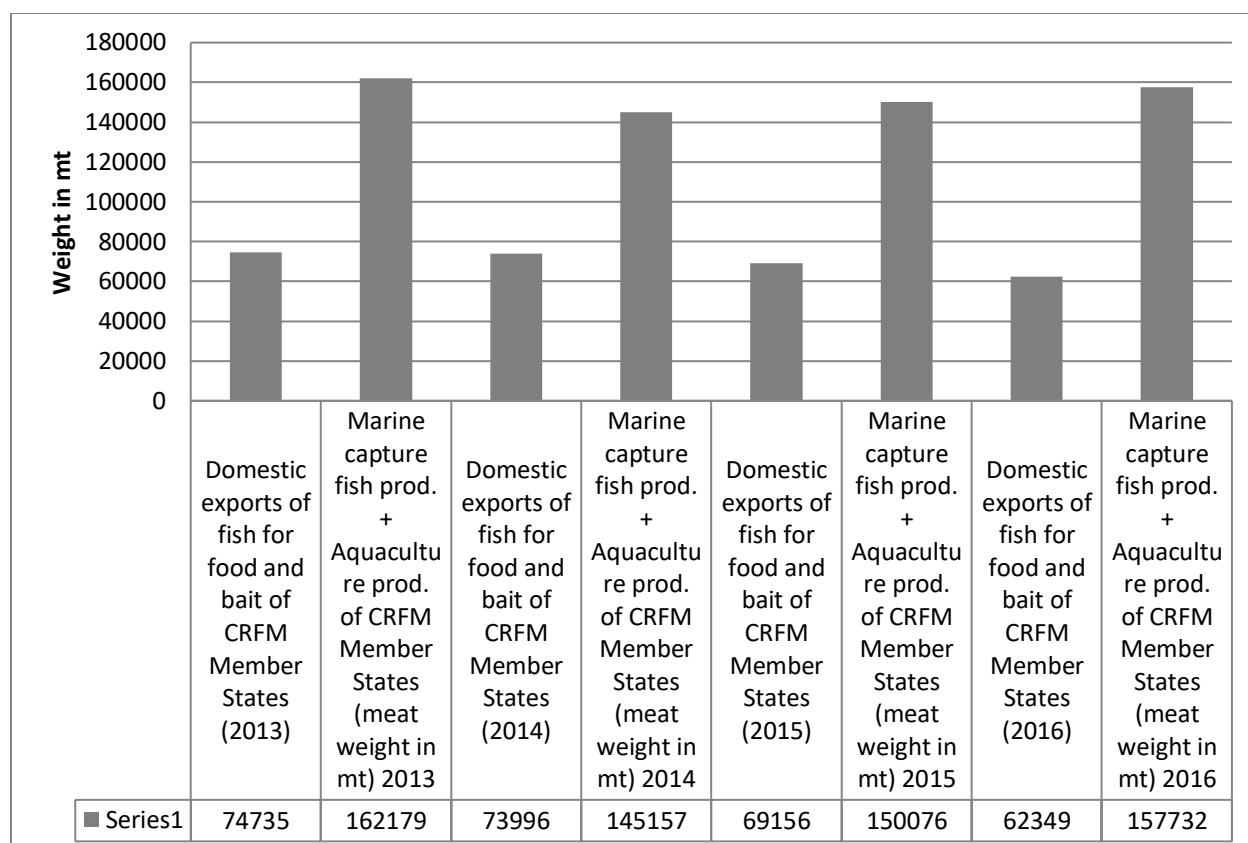
<sup>90</sup> Haiti was assumed to have no re-exports.

<b>CRFM Member States</b>	<b>Domestic exports of fish for food 2016 (product weight in mt)</b>	<b>Total domestic exports of fish 2016 (product weight in mt)</b>	<b>% contribution to the total domestic exports of fish for the CRFM region 2016</b>	<b>Average weight of domestic exports of fish for food, bait and ornamentals (mt 2013 to 2016)</b>	<b>% contribution to the total average weight of exports of fish for the CRFM region 2013 to 2016</b>	<b>Re-exports 2016 (product weight in mt)</b>
<b>Suriname</b>	27 986	27 986	44.87	31 893	45.47	0
<b>Guyana</b>	23 784	23 788	38.14	23 844	33.99	0
<b>Belize</b>	1 665	1 666	2.67	5 519	7.87	0
<b>Trinidad and Tobago</b>	4 797	4 816	7.72	3 987	5.68	715
<b>Bahamas</b>	2 287	2 287	3.67	2 592	3.70	1.35
<b>Grenada</b>	630	630	1.01	817	1.16	0
<b>Jamaica</b>	721	724	1.16	770	1.10	415
<b>Turks and Caicos Islands</b>	93	93	0.15	297	0.42	0
<b>Barbados</b>	223	223	0.36	193	0.28	0
<b>St. Vincent and the Grenadines</b>	104	105	0.17	117	0.17	0
<b>St. Kitts and Nevis</b>	37	37	0.06	74	0.11	20
<b>Antigua and Barbuda</b>	10	10	0.02	33	0.05	2
<b>Dominica</b>	9	9	0.01	4	0.01	0
<b>St. Lucia</b>	2	2	0.00	1	0.00	0
<b>Anguilla*</b>	0	0	0.00	0	0.00	0
<b>Haiti *</b>	0	0	0.00	0	0.00	0
<b>Montserrat</b>	0	0	0.00	0	0.00	0
<b>Totals</b>	<b>62 349</b>	<b>62 377</b>	<b>100</b>	<b>70 141</b>	<b>100</b>	<b>1 154</b>
<b>Domestic fish exports as a % of the marine capture fisheries and the aquaculture production 2013</b>	<b>Exports for food 46.0% Total exports 46.1%</b>					

NA= Not available

Anguilla\* - 2010 estimate

Haiti\* - 2009 estimate



**Figure 15: Domestic exports of fish for food and bait (product weight in mt) compared to the total production from marine capture fisheries and aquaculture production (meat weight in mt) of the CRFM Member States 2013 to 2016.**

The species exported for food included: lobsters, shrimp, conch, tunas, snappers, groupers, and various other finfish species and aquatic invertebrates (Table 30). The breakdown of domestic exports from 12 Member States (breakdown was not available for Grenada and Suriname and Anguilla, Haiti and Montserrat had no exports of fish) for 2016, showed that export of shrimp accounted for approximately 34% of the exports from those Member States, valued at US\$56 million. Exports of conch accounted for approximately 8%, exports (value US\$44.5 million), of lobsters 5% (value US\$52 million) and various finfish including tunas, snappers, flyingfish, mackerel, bangamary and groupers accounted for approximately 54% (value US\$63 million) of the export from the 12 Member States analyzed (Table 37 & 37.1 and Table 38).



**Table 37.1: The species (common name) and weight (meat weight in mt) of fish exported for food by Member States of the CRFM in 2016**

Member States	Lobster (mt)	Conch (mt)	Yellowfin tuna (mt)	Other tunas (skipjack, bluefin tuna etc.) (mt)	Mackerels, Wahoo and Kingfish Marlins	Dolphin fish (mt)	Groupers (mt)	Snappers (mt)	Flying fish (mt)	Fin fish aggregated (snapper, croaker, grouper, dolphin, bangamary & sea	Other fin fish (mt)	Crabs (mt)	Shrimp/prawns (mt)	Aquatic invertebrates & other	Sharks and Rays	Totals(mt)
Anguilla*																0
Antigua and Barbuda	8	2														10
Bahamas	1 106	1 095		0.2			5	10			39	33				2 287
Barbados			206	10	0.004	0.1			0.2	0.10	6	0.005	2	0.018	0.005	223
Belize	373	304							27	28	88	2	663	179		1 665
Dominica				0.9							8					9
Grenada	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	630
Guyana	1	0.2		246	32					7 546	5 098	45	10 797	19		23 784
Haiti *	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0
Jamaica	267	417		0.2	12						19		4	1		721
Montserrat																0
St. Kitts and Nevis	13	24									0.03		0.89	0.002		37
St. Lucia											2		0.01			2
St. Vincent and the Grenadines	24	29	0.2	0.2						1	48	0.4	0.04	1.0		104
Suriname	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27 986
Trinidad and Tobago	20		1807	131	9				0.3	382	2 411	7	5	19	7	4 797
Turks and Caicos Islands	33	60									0.03					93
<b>Total of 15 Member States</b>	<b>1 846</b>	<b>1 931</b>	<b>2012</b>	<b>388</b>	<b>53</b>	<b>0.07</b>	<b>5</b>	<b>10</b>	<b>27</b>	<b>7 957</b>	<b>7 718</b>	<b>87</b>	<b>11 472</b>	<b>219</b>	<b>7</b>	<b>33 732</b>
<b>Total domestic exports for food 2016</b>																<b>62 349</b>

Sources: Data were collected directly from the Government Statistics Department in the Member State

NA=Not Available (breakdown of species was not available)

\*Anguilla 2010 estimate

\*Haiti 2009 estimate

**Table 37.1: The value (in millions of US\$) by species (common name weight of product) of fish exported for food by Member States of the CRFM in 2016**

Member States	Lobster (M US\$)	Conch (M US\$)	Yellowfin tuna (M US\$)	Other tunas (skipjack, bluefin tuna etc.) (M US\$)	Mackerels, Wahoo and Kingfish Marlin, Swordfish (mt)	Dolphin fish (M US\$)	Groupers (M US\$)	Snappers (M US\$)	Flying fish (M US\$)	Fin fish aggregated (snapper, croaker, grouper, dolphin, bangamary & sea trout (M US\$)	Other fin fish (M US\$)	Crabs (M US\$)	Shrimp/prawns (M US\$)	Aquatic invertebrates & other crustaceans (M US\$)	Sharks and Rays (M US\$)	Totals (M US\$)
Anguilla*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Antigua and Barbuda	0.016	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.018
Bahamas	35.716	33.927	0.000	0.002	0.000	0.000	0.03608	0.054	0.000	0.000	0.177	1.023	0.000	0.000	0.000	70.936
Barbados	0.000	0.000	0.492	0.049	0.000	0.0004	0.000	0.000	0.0060	0.000	0.040	0.000	0.009	0.003	0.000	0.598
Belize	9.130	3.835	0.000	0.000	0.000	0.000	0.000	0.000	0.0596	0.083	0.089	0.026	6.341	2.038	0.000	21.602
Dominica	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.0000	0.000	0.064	0.000	0.000	0.000	0.000	0.071
Grenada	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0000	0.000	0.000	0.000	0.000	0.000	0.000	
Guyana	0.004	0.000	0.000	2.413	0.050	0.000	0.000	0.000	0.0000	22.891	24.099	0.232	49.563	0.066	0.000	99.318
Haiti *	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0000	0.000	0.000	0.000	0.000	0.000	0.000	
Jamaica	5.644	5.837	0.000	0.001	0.027	0.000	0.000	0.000	0.0000	0.000	0.135	0.000	0.027	0.005	0.000	11.677
Montserrat	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0000	0.000	0.000	0.000	0.000	0.000	0.000	
St. Kitts and Nevis	0.039	0.145	0.000	0.000	0.000	0.000	0.000	0.000	0.0000	0.000	0.000	0.000	0.006	0.000	0.000	0.190
St. Lucia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0000	0.000	0.008	0.000	0.000	0.000	0.000	0.008
St. Vincent and the Grenadines	0.385	0.152	0.002	0.001	0.000	0.000	0.000	0.000	0.0000	0.008	0.068	0.010	0.000	0.006	0.000	0.632
Suriname	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0000	0.000	0.000	0.000	0.000	0.000	0.000	
Trinidad and Tobago	0.128	0.000	5.225	0.989	0.087	0.000	0.000	0.000	0.0016	1.015	4.545	0.048	0.036	0.064	0.047	12.186
Turks and Caicos Islands	0.826	0.606	0.000	0.000	0.000	0.000	0.000	0.000	0.0000	0.000	0.000	0.000	0.000	0.000	0.000	1.432
Value of 15 Member States (M US\$)	51.890	44.504	5.719	3.462	0.164	0.0004	0.036	0.054	0.067	23.997	29.225	1.339	55.984	2.181	0.047	218.670
Value of total domestic exports for food 2016 (M US\$)																<b>256.0518</b>

**Table 38: Weight (product weight) of species exported by 12 Member States and the percentage contribution that the species made to the total exported (fish for food) and corresponding value (2016)**

Species of fish exported	Totals exported by 12 of the 17 CRFM Member States (2016)	% contribution that the species made to the total exported (2016)	Value in millions of US\$ (2016)
<b>Shrimp</b>	11 472	34.	56
<b>Fin fish aggregated (snapper, croaker, grouper, dolphin, bangamary &amp; sea trout)</b>	7 957	24	24
<b>Other finfish</b>	7 718	23	29
<b>Lobsters</b>	1 846	5	52
<b>Conch</b>	1 931	6	45
<b>Yellowfin tuna</b>	2 012	6	6
<b>Other aquatic invertebrates and crustaceans</b>	219	0.7	2
<b>Flyingfish</b>	27	0.08	0.08
<b>Mackerels</b>	53	0.2	0.2
<b>Stone crabs</b>	87	0.3	1
<b>Other tunas</b>	388	1	3
<b>Groupers</b>	5	0.01	0.04
<b>Sharks and Rays</b>	7	0.02	0.05
<b>Snappers</b>	10	0.03	0.05
<b>Dolphinfish</b>	0.07	0.00	0.0004
<b>Totals</b>	<b>33 732</b>	<b>100</b>	<b>218.7</b>

*NB: the breakdown for Suriname and Grenada were not available*

Suriname exported ~66 % of the fish production from the marine capture fisheries and the aquaculture production in 2016 as food and bait. Belize (62.6%), Guyana (56.3%) and Trinidad and Tobago (36.7%) also exported substantial amounts of the production from the marine capture fisheries and the aquaculture production in 2016 (Table 39 and Figure 16).

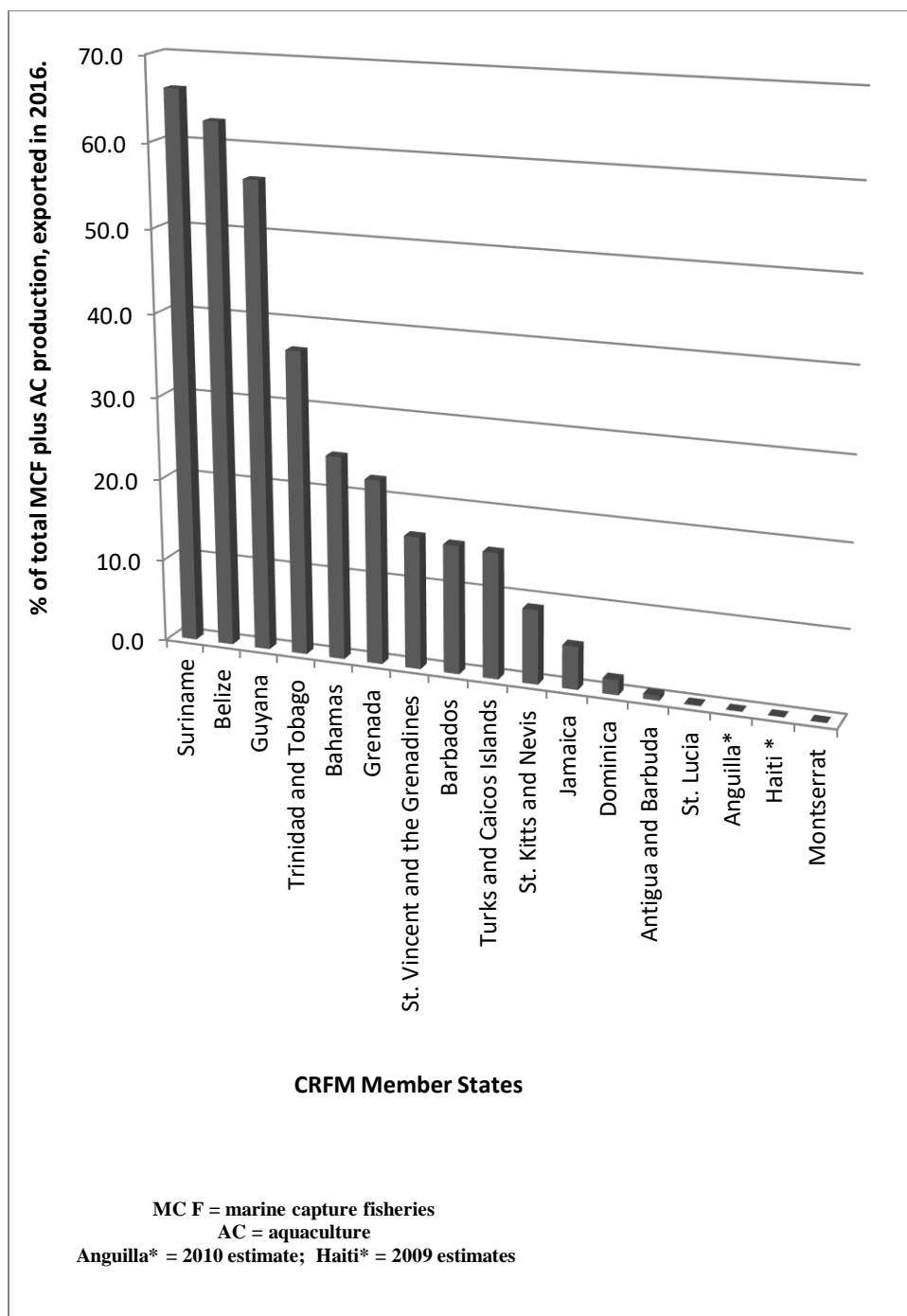
**Table 39: Percentage of the production (meat weight) from the marine capture fisheries production (MCF prod.) plus the aquaculture production (AC prod.) that was exported in 2016 by CRFM Member States**

Member States	Domestic exports of fish for food and bait (product weight in mt) 2016	MCF prod. + AC prod. (meat weight in mt) 2016	% of MCF prod. + AC prod. that was exported in 2016
<b>Suriname</b>	27 986	42 319	66.1
<b>Belize</b>	1 665	2 657	62.6
<b>Guyana</b>	23 784	42 278	56.3
<b>Trinidad and Tobago</b>	4 797	13 056	36.7
<b>Bahamas</b>	2 287	9 286	24.6
<b>Grenada</b>	630	2 823	22.3
<b>St. Vincent and the Grenadines</b>	104	649	16.0
<b>Barbados</b>	223	1 436	15.6
<b>Turks and Caicos Islands</b>	93	610	15.2

<b>Member States</b>	<b>Domestic exports of fish for food and bait (product weight in mt) 2016</b>	<b>MCF prod. + AC prod. (meat weight in mt) 2016</b>	<b>% of MCF prod. + AC prod. that was exported in 2016</b>
<b>St. Kitts and Nevis</b>	37	412	9.0
<b>Jamaica</b>	721	13 917	5.2
<b>Dominica</b>	9	479	1.8
<b>Antigua and Barbuda</b>	10	1 709	0.6
<b>St. Lucia</b>	2	1 729	0.1
<b>Anguilla*</b>	0	733	0.0
<b>Haiti *</b>	0	23 600	0.0
<b>Montserrat</b>	0	37	0.0
<b>Totals</b>	<b>62 349</b>	<b>157 732</b>	

*Anguilla\* - 2010 estimate*

*Haiti\* - 2009 estimate*



**Figure 16: Domestic fish exports (food and bait) of CRFM Member States expressed as a percentage of the total marine capture fisheries plus aquaculture fish production (meat weight 2016).**

## CHAPTER 7: FISH CONSUMPTION IN THE CRFM REGION

Table 40 assumes that all the fish imported are consumed by the local population, and tourist and visitors are not accounted for.

**Table 40. Calculation table for consumption of fish (assuming that the local population consumed all the available fish) within CRFM Member States (in kg per person) for 2016**

Column 1 (C1)	Column 2 (C2)	Column 3 (C 3)	Column 4 (C 4)	Column 5 (C 5)	Column 6 (C 6)	Column 7 (C 7)	Column 8 (C 8)	Column 9 (C 9)	Column 10 (C 10)	Column 11 (C 11)
Countries	Marine Capture Fish Prod. + Aquaculture Prod. (mt) 2016	Domestic Exports (mt) 2016	Re-exports (mt) 2016	Imports of chilled fresh or frozen fish (mt) 2016	Imports of dried, salted smoked pickled (cured) fish (mt) 2016	Imports of canned fish (mt) 2016	Total fish imports for food (mt) 2016 =C5+C6+C7	Total fish supply (mt) 2016 =C2-C3-C4+C8	Population 2016	Total Fish Supply Per Capita (kg/2016) =(C9*1000)/C10
Anguilla*	733	0	0.0	262	65	123	450	1 184	14 764	80
Antigua & Barbuda	1 709	10	1.9	600	688	371	1 659	3 356	100 960	33
Bahamas	9 286	2 287	1.3	1 855	141	2 549	4 544	11 542	391 230	30
Barbados	1 436	223	0.0	3 042	691	2 501	6 234	7 447	285 000	26
Belize	2 657	1 665	0.0	84	1.0	302	386	1 379	366 950	4
Dominica	479	9	0.0	60	238	257	555	1 025	73 540	14
Grenada	2 823	630	0.0	93	74	423	590	2 783	107 320	26
Guyana	42 278	23 784	0.0	253	19	1 282	1 555	20 048	773 300	26
Haiti*	23 600	0	0.0	NA	NA	NA	12 500	36 100	10 847 330	3
Jamaica	13 917	721	415.0	12 358	4 757	12 767	29 882	42 663	2 881 360	15
Montserrat	37	0	0.0	29	19	18	66	103	5 152	20
St. Kitts & Nevis	412	37	20.5	626	226	297	1 148	1 502	54 820	27
St. Lucia	1 729	2	0.0	403	423	918	1 744	3 472	178 010	20
St. Vincent & the Grenadines	649	104	0.0	98	349	194	641	1 186	109 640	11
Suriname*	42 319	27 986	0.0	NA	NA	NA	500	14 833	558 370	27
Trinidad & Tobago*	13 056	4 797	715.3	4 773	2 423	3 518	10 713	18 256	1 364 960	13
Turks and Caicos Islands*	610	93	0.0	1 132	201	247	1 580	2097	34 900	60
<b>Totals</b>	<b>157 732</b>	<b>62 349</b>	<b>1154.1</b>	<b>25 666</b>	<b>10 316</b>	<b>25 766</b>	<b>74 748</b>	<b>168 977</b>	<b>18 147 606</b>	

Source for population: Anguilla and Montserrat from - Worldometers, 2018; all others from - The World Bank Group, 2018

Anguilla\* - Imports and Exports were 2010 estimates.

Haiti\* - - Imports and Exports were 2009 estimates.

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