

# **PRODUCTION AND TRADE IN FISHERIES PRODUCTS IN THE CARIBBEAN REGION**

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## **ABSTRACT**

Production and trade in fisheries products in the Caribbean Region are summarized in this paper. Total production in the Region averaged 263 thousand metric tons annually during 1975-92. Cuba dominated overall production statistics as well as trade statistics.

Keywords: Caribbean Region, fisheries production, trade

## **INTRODUCTION**

The Caribbean Region consists of a number of small to mid-sized islands throughout the West Indies. The economies of many of these islands depend heavily on their natural resource endowments, including fisheries. As such, these fisheries provide an important source of employment and income to the Region. In addition, the fisheries yield a product that can be consumed locally or traded in the international market.

The goals of this paper are twofold: (1) to examine historical fisheries production in the Caribbean Region and (2) to examine trade patterns in the Region. These subjects are discussed in the next two sections of the report. In the last section, a summary of relevant findings is presented.

## **CARIBBEAN PRODUCTION**

Fisheries production in the Caribbean Region is primarily comprised of a natural product, though some aquaculture also takes place. Production by country (for discussion purposes, territories and the like will be referred to as countries in this paper) and species (groups) are considered herein for the 1975-92 period. The analysis is based on FAO landings data. As such, the reader should keep in mind the following points. First, all production statistics (including mollusks) will generally be expressed on a live weight basis. Second, production figures will include any farm-raised output. Third, recreational catch is excluded from all landings statistics. Fourth, the term 'fisheries' is broadly interpreted to include most aquatic and marine organisms. Finally, the reader should be aware that landings and

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catch are not necessarily synonymous. For convenience purposes and space limitations, all data are presented in three-year annual averages.

### **A. Production by Country**

Total fisheries production in the Caribbean Region averaged 263 thousand metric tons annually for the 1975-92 period (Table 1). When examined in three-year intervals, peak production of 299 thousand metric tons occurred in 1984-86. Average annual production of 246 thousand metric tons in 1990-92 was only about 80% of that reported during the peak years and only 6% above that reported for the 1975-77 period.

Cuba, as indicated, dominates fisheries production in the Caribbean Region. With production averaging 189 thousand metric tons annually during 1975-92, Cuban production accounted for 72% of the Region's total for the period. With the exception of the most recent three-year interval of analysis, Cuban production consistently represented from 71% to 75% of the Region's total production. Due to an abnormally low average annual production of 154 thousand metric tons, however, Cuba's share of the Region's total production in 1990-92 fell to only 63%. With production averaging 13.2 thousand metric tons annually during 1975-92, the Dominican Republic trailed only Cuba in terms of its contribution to fisheries output in the Caribbean Region. Production by the Dominican Republic approximately tripled during the period of analysis (5.9 thousand metric tons annually in 1975-77 compared to 17 thousand metric tons annually in 1990-92) and, with the exception of an 8% decline in 1990-92, increased consistently during the study period when examined in three-year intervals. The Dominican Republic's share of Caribbean output advanced from 2.5% in 1975-77 to almost 7% in 1990-92. Excluding Cuba's contribution to the total, the Dominican Republic's share of Caribbean output averaged about 18% during the study period.

Jamaica, Guadeloupe, and Trinidad and Tobago were ranked third, fourth, and fifth in relation to their output contribution to the Caribbean Region. These three countries, when combined with Cuba and the Dominican Republic, accounted for more than 85% of the reported Caribbean fisheries output during 1975-92. Similarly, the contribution by the 10 leading producing countries (i.e., including Haiti, the Bahamas, Martinique, Barbados, and Puerto Rico) accounted for almost 95% of the reported Caribbean output in 1975-92.

While the Dominican Republic reported the largest increase in fisheries production among the Caribbean countries (in absolute terms) during the period of study, other countries also witnessed significant gains. Most notably, production in Trinidad and Tobago advanced from an average of 4.4 thousand metric tons annually in 1975-77 to 11.9 thousand metric tons annually in 1990-92. Similarly, production in the Bahamas advanced from 3.2 thousand metric tons to 8.9 thousand

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metric tons. Finally, St. Vincent production advanced from less than one-thousand metric tons to more than 6 thousand metric tons. Significant long-run declining production was not evident in any country.

### **B. Production by Major Groups**

Marine fishes, as indicated by the information contained in Table 2, dominate the Caribbean production of aquatic and marine organisms. Marine fish landings in 1975-77, averaging 195 thousand metric tons annually, accounted for almost 85% of the total Caribbean aquatic and marine production of 232 thousand metric tons. By 1990-92, the share of total Caribbean production represented by marine fishes had fallen to only 71% (176 thousand metric tons of a total 246 thousand metric tons). This decline reflects both an absolute decline in the production of marine fishes and an increase in the production of other aquatic and marine organisms, particularly freshwater fishes.

Caribbean production of freshwater fishes, as indicated, advanced from an average of 1.8 thousand metric tons annually in 1975-77 to more than 26 thousand metric tons annually in 1990-92. When examined in three-year intervals, growth in production of freshwater fishes was consistent throughout the 18-year period of study and was particularly strong during the first half of the study period. Overall, freshwater fishes represented less than one percent of total Caribbean production in 1975-77 compared to 11% in 1990-92.

Annual production of crustaceans in the Caribbean Region remained relatively stable during the period of analysis when examined in three-year intervals, falling in the narrow range of 23.9 thousand metric tons (1981-83) to 28.9 thousand metric tons (1987-89). Average annual production for the 18-year period of study equalled 26.1 thousand metric tons, or 10% of the total annual Caribbean production of aquatic and marine organisms (263 thousand metric tons). Production of mollusks averaged 11.2 thousand metric tons annually during the 18-year period of analysis, or less than 5% of the total average annual Caribbean production of aquatic and marine organisms. Diadromous fishes and 'other' organisms accounted for less than one percent of the total.

### **C. Production by Species (Groups)**

A more detailed breakdown of Caribbean production of aquatic and marine organisms, given in terms of species (groups), is presented in Table 3. With production averaging 70 thousand metric tons annually, sharks represented more than a quarter of the total Caribbean production of aquatic and marine organisms during 1975-92 and one-third of total marine fish production. Jacks and pompanos represented another 20% of total production while hakes' share of the total equalled 10%. These three groups (i.e., sharks, jacks and pompanos, and hakes), when combined, represented in excess of one-half of the total Caribbean aquatic

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and marine output, by weight, during 1975-92 and in excess of 70% of marine fish production.

While a detailed discussion of all of the information contained in Table 3 is beyond the scope of the paper, a few comments are in order. First, a comparison of the information in Tables 2 and 3 suggests that essentially all of the growth in the production of freshwater fishes during the 18-year period of study was tilapia driven. Caribbean production of tilapia advanced from less than one thousand metric tons annually in 1975-77 to more than 21 thousand pounds in 1990-92.

An examination of the data in Table 3 also suggests that the large reduction in the production of jacks and pompanos during the most recent three-year interval of analysis (particularly Chilean jack) largely explains the overall reduction in the production of marine fishes and total production (see Table 2). Relatively large reductions in the production of sharks, groupers, and snappers were also evident.

Lobsters and shrimp, as indicated by the information contained in Table 3, generally represented from about 85% to 90% of total crustacean production in the Caribbean Region when examined in three-year intervals. Production of both of these species has been stable since 1984-86. Lobster production since this period has averaged 18.6 thousand metric tons annually, while shrimp production has averaged 6.0 thousand metric tons.

### **CARIBBEAN TRADE**

The FAO published trade data were used to analyze trading patterns in the Caribbean Region. Due to data and space limitations, only selected periods were analyzed. Results are presented below. In addition, since trade data are generally unavailable for territories (or Commonwealth in the case of Puerto Rico), the analysis of trade is more limited to only countries.

#### **A. Value of Trade**

Imports and exports of fishery products among Caribbean countries, expressed on the basis of value, are presented in Table 4 for two time periods: 1977-79 and 1989-91. Total imports in 1977-79, as indicated, averaged \$105 million annually (these imports would include landings in any country by foreign vessels). By 1989-91, they had increased 73% to \$181 million. Much of this increase, however, was inflationary based. Putting the increase in perspective, the U.S. Consumer Price Index during the same period increased by 97%. This would suggest that import growth of fisheries products in the Caribbean Region was less than the inflation rate, under the assumption that the inflation rate in the Caribbean approximates that of the United States.

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Total exports of fishery products from the Caribbean Region approximately doubled between 1977-79 and 1989-91, i.e., from an average of \$94 million annually to an average of \$190 million annually. This increase was approximately equivalent to the inflation rate in the United States during the same period. In 1977-79, total annual imports exceeded exports resulting in a net import situation of about \$10 million. By 1989-91, a net export situation had developed, reflecting the increase in total exports relative to total imports (some of the change reflects a change in the classification of St. Vincent exports).

A closer examination of the data indicates that the overall findings are largely determined by Cuba's activities. When Cuba is excluded from the analysis, the results change from a situation of net imports of \$10.3 million to a net export situation of \$55.7 million. Similarly average annual net exports in 1989-90 increased from \$9.2 million to \$79.2 million. Hence, it is apparent that Cuba contributes significantly to overall balance of trade in fisheries products in the Caribbean Region.

With the exception of Cuba, only four Caribbean countries experienced net exports in 1989-91 (the Bahamas, Cayman Islands, St. Vincent, and Turks Caicos). These four countries, in addition to Cuba, accounted for almost 95% of the \$190 million in total annual exports in 1989-91. By comparison, fourteen countries exhibited a net import situation in 1989-91. Jamaica, with net imports averaging \$27 million annually led the list, followed by Martinique (\$26.9 million), the Dominican Republic (\$23.8 million), and Guadeloupe (\$18.6 million). These four countries accounted for 56% of the total value of fisheries imports to the Caribbean Region in 1989-91. Though Cuba was a net exporter of fisheries products in 1989-91, its imports were large, averaging \$31.7 million. These five countries accounted for about 70% of the total value of imports to the Caribbean Region.

### **B. Trade by Product Type**

The FAO data include imports and exports of fisheries products by type of product. These products include: fish (fresh, chilled, or frozen), fish (dried, salted, or smoked), crustaceans and mollusks (not canned), fish (canned), and crustaceans and mollusks (canned). As indicated, the Caribbean Region imported 35 thousand metric tons of fish (fresh, chilled, or frozen) on an annual basis in 1988-91 at an average price of \$1.31 per kilogram. At the same time, however, the Region exported 13 thousand metric tons of the product at a nearly equivalent price (\$1.26 kg). The Region also imported an average of 32.8 thousand metric tons of fish canned annually during the period and 26.5 thousand metric tons of fish (dried, salted, or smoked). Imports of crustacean and mollusks products were minor.

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While imports of crustacean and mollusk products were minor, exports were large exceeding 18 thousand metric tons annually. Total production of crustaceans and mollusks in the Region (for 1990-92) averaged 42.8 thousand metric tons (see Table 2). This suggests that approximately 40% of the production in crustaceans and mollusks is exported.

### **C. Balance in Fisheries Products**

Total fisheries supply for consumption for any county (region) is equal to domestic landings of edible products plus imports of edible products less exports. Dividing this supply by population provides an estimate of per capita supply. As indicated, annual Caribbean Region consumption of seafood (live weight) was estimated to equal 12.0 kg per capita in 1988-90 which was nearly identical to the 12.1 kgs. reported for 1980-82. Excluding the British Virgin Islands (due to incomplete data), 1988-90 per capita consumption was found to exceed 40 kgs. per year in five countries: Antigua, Aruba, Guadeloupe, Martinique, and St. Kitts Nev. Per capita consumption was found to be less than 10 kgs per year in the following countries: the Dominican Republic, Haiti, and Trinidad Tobago (the U.S. Virgin Islands is not listed due to incomplete data).

### **SUMMARY**

Fisheries production in the Caribbean Region averaged 263 thousand metric tons annually during 1975-92. No trend in increasing or decreasing long run production was evident during the period of study.

About 80% of total long-run production in the Caribbean Region was marine fish oriented. Production of fresh water fish expanded significantly however, and accounted more than 10% of the total Caribbean production in 1990-92 compared to less than one percent in 1975-77. Sharks, jacks and pompanos, and jacks represented more than 70% of the marine fisheries output during the study period while tilapia accounted for the vast majority of fresh water fisheries production.

When examined by countries, Cuba accounted for more than 70% of total fisheries production in the Caribbean Region during 1975-92 followed by the Dominican Republic (5%) and Jamaica (3.7%). Expansion in fisheries production was particularly evident in the Dominican Republic.

In 1990-92, the Caribbean Region was found to be a net exports of fishery products of approximately \$10 million per year. However, the Region's net exports would have much larger if not for the very large exports from Cuba.

### **LITERATURE CITED**

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(FAO)Food and Agriculture Organization of the United Nations, FAO Yearbook

Country	Cuba	DR	Jamaica	Guadeloupe
1975-77	174,431	5,851	10,112	6,442
1978-80	184,436	7,876	9,449	8,500
1981-83	186,162	13,487	8,117	8,622
1984-86	221,327	16,800	10,330	8,649
1987-89	212,698	18,407	10,366	8,461
1990-92	154,338	17,000	10,630	8,540
Avg.b	188,899	13,237	9,834	8,202
T and T	Bahamas	Haiti	Martinique	
1975-77	4,379	3,153	4,050	3,443
1978-80	4,375	4,272	4,600	4,643
1981-83	4,206	4,770	6,001	5,109
1984-86	4,407	6,320	6,434	4,644
1987-89	7,346	7,520	5,601	3,184
1990-92	11,861	8,896	5,133	5,261
Avg.b	6,096	5,822	5,303	4,381
Barbados	Puerto Rico	St. Vincent	Antigua B.	
1975-77	4,335	2,606	503	1,678
1978-80	4,004	3,117	582	1,337
1981-83	4,471	2,214	493	1,057
1984-86	4,643	1,726	521	2,091
1987-89	5,115	1,646	3,709	2,400
1990-92	2,794	2,025	6,337	2,283
Avg.b	4,227	2,222	2,024	1,808
Grenada	St. Kitts	St. Lucia	Turks Caicos	
1975-77	2,119	1,532	2,233	1,116
1978-80	1,716	1,834	1,531	1,234
1981-83	1,085	1,669	907	1,095
1984-86	1,998	1,520	946	1,347
1987-89	1,979	1,711	743	1,295
1990-92	1,942	1,723	937	1,185
Avg.b	1,807	1,665	1,216	1,212
N. Antilles	VBI	Dominica	Cayman Is.	
1975-77	937	379	1,024	0
1978-80	1,037	610	1,052	630
1981-83	1,017	806	1,286	1,860
1984-86	1,040	1,128	661	432
1987-89	1,167	1,296	650	699
1990-92	1,150	1,392	675	829
Avg.b	1,058	935	891	742
V.I U.S.	Aruba	Montserrat	Total	
1975-77	535	650	94	231,514
1978-80	591	770	104	248,301
1981-83	702	770	108	256,014
1984-86	742	747	110	298,562
1987-89	791	550	68	297,402
1990-92	815	357	122	246,226
Avg.b	696	641	101	263,003

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Statistics  
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Food and  
Agriculture  
Organization of  
the United  
Nations,  
unpublished  
catches and  
landings data.

Table 1.  
Caribbean Fisheries Production by Country (Territory), 1973-92.

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a Data for specific time periods are provided in three-year annual averages.

b Annual average for 18-year period.

Table 2. Caribbean Production of Aquatic and Marine Organisms, 1975-92. Metric Tonn. Freshwater Fishes= FW; Diadromous Fishes= DF; Marine Fishes= MF; Crustaceans= CR; Mollusks, ML; Others; Total



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Time Period <sup>a</sup>							
	FW	DF	MF	CR	ML	Others	Total
1975-77	1,758	67	195,272	24,077	8,551	1,789	231,514
1978-80	5,765	61	208,297	24,844	7,787	1,548	248,302
1981-83	14,469	75	208,209	23,859	7,714	1,688	256,014
1984-86	18,277	74	239,970	27,330	11,321	1,590	298,562
1987-89	21,292	76	229,368	28,948	16,552	1,165	297,401
1990-92	26,534	34	175,963	27,579	15,252	864	246,226
Avg <sup>d</sup>	14,683	64	209,513	26,106	11,196	1,441	263,003

a Data for specific time periods are given in three-year annual averages.

b Annual average for 18-year period.

d Includes aquatic animals, mammals, animal products, and plants.

Source: Unpublished FAO catches and landings data.

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Table 3. Caribbean Fisheries Production by Species (Group), 1975-92.

Year\Fishes	Dolphinfishes	Groupers	Red Groupers	Other Groupers
1975-77	2,163	6,453	4,633	1,820
1978-80	2,097	4,809	2,910	1,899
1981-83	2,094	4,220	2,035	2,185
1984-86	2,078	4,703	1,933	2,770
1987-89	2,194	5,559	2,282	3,277
1990-92	2,358	3,109	836	2,273
Avg.d	2,164	4,809	2,438	2,371
	Grunts	Hakes	Herrings & Sardines	sacks & Pompano
1975-77	2,836	50,109	4,317	15,811
1978-80	2,091	21,729	4,612	64,603
1981-83	2,314	12,120	3,840	77,685
1984-86	2,555	32,335	16,018	60,385
1987-89	2,517	23,970	10,482	65,448
1990-92	2,145	17,652	15,184	29,557
Avg.d	2,410	26,319	9,076	52,248
	Chilean Jack	Crevalle	Horse Mackerel	Mackerels
1975-77	567	3,760	11,484	7,725
1978-80	34,657	1,610	28,336	5,727
1981-83	70,994	1,432	5,259	6,208
1984-86	37,700	5,737	16,948	5,521
1987-89	34,892	1,805	28,751	6,918
1990-92	25,074	1,910	2,573	6,885
Avg.d	33,980	2,709	15,558	6,497
	Atlantic et al.	Spanish	Other	Porgies
1975-77	3,093	3,739	893	2,172
1978-80	1,226	3,947	554	1,609
1981-83	1,990	3,646	572	764
1984-86	232	4,786	503	1,277
1987-89	174	6,285	459	2,220
1990-92	259	5,940	686	1,933
Avg.d	1,162	4,724	611	1,663
	Atlantic Redfish	Sharks	Tilapia	Tunas
1975-77	750	69,667	651	11,383
1978-80	4,094	67,802	4,395	12,161
1981-83	5,455	66,593	11,790	11,072
1984-86	5,732	76,442	16,477	14,437
1987-89	6,963	73,963	18,487	11,199
1990-92	7,301	64,587	21,626	10,570
Avg.d	5,049	69,842	12,238	11,804

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Table 3.	Continued			
Fishes	Bigeye et al.	Skipjack	Yellowfin	Otherc
1975-77	2,666	2,886	3,846	1,985
1978-80	3,239	2,455	4,816	1,651
1981-83	2,573	2,323	4,659	1,517
1984-86	2,050	2,209	4,195	5,983
1987-89	2,023	1,906	2,152	5,118
1990-92	2,251	1,846	2,153	4,320
Avg.d	2,467	2,271	3,637	3,429
Crustaceans	Crabs	Lobsters	Shrimp	Other
1975-77	1,600	11,940	9,265	1,272
1978-80	639	14,427	8,345	1,432
1981-83	876	14,637	6,612	1,733
1984-86	1,239	18,344	5,935	1,812
1987-89	1,389	18,990	6,578	1,991
1990-92	1,009	18,604	5,535	2,431
Avg.d	1,125	16,157	7,045	1,778
Mollusks	Oysters	Squids	Other	
1975-77	2,411	5,132	1,008	
1978-80	2,287	4,306	1,194	
1981-83	2,549	2,502	2,663	
1984-86	2,628	4,727	3,966	
1987-89	2,388	10,197	3,967	
1990-92	1,947	10,024	3,281	
Avg.d	2,368	6,148	2,680	