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ANNEX TO THE
**WORLDWIDE FISHERIES
MARKETING STUDY:**
PROSPECTS TO 1985

CARIBBEAN



Government
of Canada

Gouvernement
du Canada

Fisheries
and Oceans

Pêches
et Océans

Industry, Trade
and Commerce

Industrie
et Commerce

(This Report is one of a series of country and species annexes to the main study
entitled the Overview)

DRAFT



Annex to the
Worldwide Fisheries Marketing Study:
Prospects to 1985

THE CARIBBEAN

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The views expressed in this Study, however, are ours alone and reflect the Canadian perception of worldwide markets.

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E. Wong
November, 1980

FOREWORD

As a consequence of global extension of fisheries jurisdictions, a radical shift has taken place in the pattern of worldwide fish supply and demand. This change is still going on and will continue for many years before a new dynamic equilibrium situation is reached. However, in the midst of this re-adjustment, a new trade pattern is emerging -- some net exporting countries are now importing and vice versa. In the longer term, some countries will experience shortages of supply and others will have a surplus. Fortunately, Canada is amongst the latter group.

The implications for the marketing of Canadian fisheries products arising from the worldwide introduction of the 200-mile limit are extensive. With our vastly improved supply position relative to world demand, government and industry are understandably concerned about ensuring that the bright promise of increased market opportunities are real and can be fulfilled. One of the steps in this process is the publication of the Worldwide Fisheries Marketing Study which assesses the global potential on a country and species basis.

Specifically, the purpose of the Study is to identify the longer term market opportunities for selected traditional and non-traditional species in existing and prospective markets and to identify factors which may hinder or help Canadian fisheries trade in world markets. To date, over 40 country markets and 8 species groups have been analyzed. It should be noted that while the information contained in the Reports was up-to-date when collected, some information may now be dated given the speed with which changes are occurring in the marketplace. In this same vein, the market projections should be viewed with caution given the present and still evolving re-alignment in the pattern of international fisheries trade, keeping in mind the variability of key factors such as foreign exchange rates, energy costs, bilateral fisheries arrangements and GATT agreements which have a direct effect on trade flows.

Notwithstanding, the findings contained in these Reports represent an important consolidation of knowledge regarding market potential and implications for improvements in our existing marketing and production practices. The results of the Study should, therefore, usefully serve as a basis for planning fisheries development and marketing activities by both government and industry in order to capitalize on the identified market opportunities.

This draft report is published for discussion purposes and as such we invite your critical comments.

Ed Wong

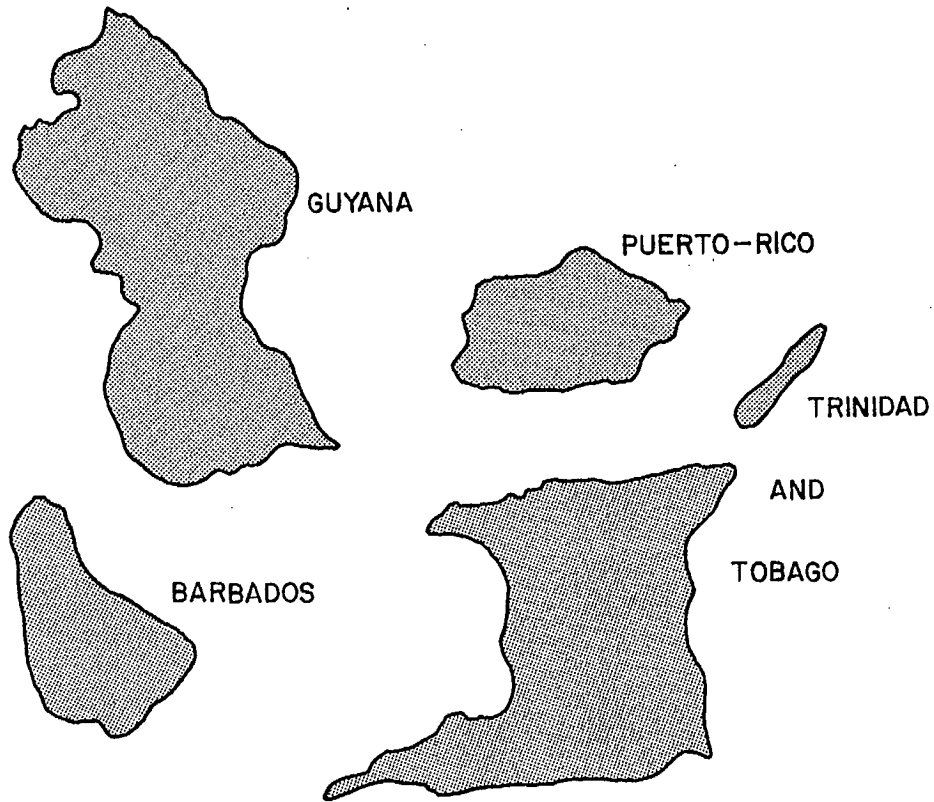
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THE CARIBBEAN

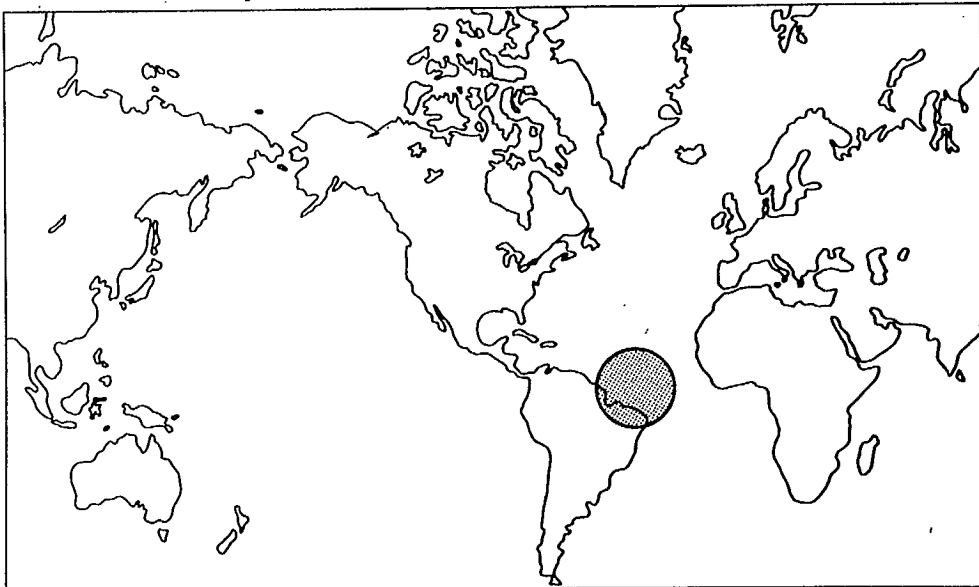
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CARIBBEAN



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A. INTRODUCTION

The Caribbean area is vast, with many islands that differ substantially in terms of political, social and economic conditions. This study however covers only the following places:

- (i) Guyana
- (ii) Barbados
- (iii) Trinidad and Tobago
- (iv) The Commonwealth of Puerto Rico
- (v) The Leeward and Windward Islands

All these with the exception of Puerto Rico, are British Commonwealth members with traditional trading ties with Canada. Fish markets in Puerto Rico, Barbados, and Trinidad and Tobago were examined because of their potential for Canada's fishing industry. Guyana is not a market for Canada since imported fish products have been banned since 1971. However it was carefully considered because of its potential as a major competitor.*

All the places surveyed have some common characteristics. They have relatively high rates of population growth and relatively low standards of living. There is a marked preference for fish but demand is impeded by prices

*Although statistical data for Belize and Jamaica are sometimes included in the tables, the study does not cover these two major fish consuming nations. Furthermore, Jamaica accounted for 56% of the total market for fishery products in the region in 1976.

rising faster than that of other protein sources. Poultry, in particular is increasingly being substituted for fish.

These characteristics have important implications for present and future demands for fisheries products. Projections of the population and Gross National Product (GNP) per capita of the places studied, based on the average rate of growth for the period of 1970-1977, indicate that their combined population could increase from 5.7 million in 1978 to 6.6 million by 1985, or at an average of 2.5% a year (Table 1). Assuming that Guyana continues its policy of banning imports of fish, the population in the market available to Canada would in fact increase from 4.7 million to 5.7 million, or by 2.2% a year.

Table 1 also shows that increases in real income in the area would generally be small. The exception is Trinidad and Tobago, whose rate of income growth should average about 3% per annum, because of its oil and gas resources. Per capita income in Barbados, although second highest, is less assured because increasing fuel prices, higher transportation costs and the instability of the tourist market can all influence the Barbados economy. Puerto Rico has a more diversified and industrialized base than the others, and if its rate of population growth could be reduced, per capita incomes should increase more than projected. Guyana, with its abundance of resources, should be the country with the greatest growth potential (even though it now lacks oil). Development in Guyana, however, is plagued by serious foreign exchange problems which severely affect its capabilities to import needed capital goods. Negotiations are taking place with the World Bank in an attempt to reduce these problems. For more details on the Caribbean economy, see Appendix I.

TABLE 1

Population and real GNP per capita projections
selected Caribbean nations 1978-1985

	1978*	1979	1980	1981	1982	1983	1984	1985	% 1978 1985
<u>Guyana</u>									
Population '000	836	852	869	887	905	923	941	960	15
Per capita income (US\$)	460	462	464	465	467	469	471	473	3
<u>Trinidad and Tobago</u>									
Population '000	1 137	1 150	1 164	1 178	1 192	1 207	1 221	1 236	9
Per capita income (US\$)	2 910	2 997	3 087	3 180	3 275	3 373	3 474	3 578	23
<u>Barbados</u>									
Population '000	250	251	252	254	255	256	257	259	4
Per capita income (US\$)	1 940	1 990	2 042	2 095	2 149	2 205	2 263	2 322	20
<u>Puerto Rico</u>									
Population '000	3 365	3 459	3 556	3 655	3 758	3 863	3 971	4 082	21
Per capita income (US\$)	2 720	2 722	2 725	2 728	2 731	2 734	2 736	2 739	1
<hr/>									
Population all countries except Guyana ('000)	4 752	4 860	4 972	5 087	5 205	5 326	5 449	5 577	19
Population all countries ('000)	5 588	5 712	5 841	5 974	6 110	6 249	6 390	6 537	19

Source: World Bank Atlas, 1979, World Bank, Washington, D.C.

* Incomes expressed in terms of 1978 dollars.

With the population and per capita incomes projected, it is apparent that market prospects will depend primarily on population growth in Puerto Rico and Guyana whereas in Trinidad and Tobago, and Barbados will depend primarily on increases in real incomes. Thus, assuming fish price trends continue, per capita consumption of fish is likely to remain constant in Puerto Rico and Guyana and rise in terms of quantity and/or value in Trinidad and Tobago, and Barbados.

The Caribbean area has been a traditional market for Canadian fisheries products, particularly salted cod and other cured and smoked products. In recent years two major forces have disrupted the traditional market pattern:

- (i) increasing prices of Canadian fisheries products; and
- (ii) attempts by virtually all Caribbean nations and territories to develop their own fisheries.

These two tendencies have a highly important bearing on Canadian fish market potential in the region. In the countries where per capita income is growing slowly, such as Puerto Rico, Canada may find itself priced out of some traditional markets. In the increasingly affluent countries, such as Trinidad and Tobago, and Barbados, local fisheries development may forestall Canada's prospects for a strong entry into an expanding market.*

*A table of relevant Canadian exchange rates is provided for general information.

TABLE 1A

1980 yearly average exchange rates in Canadian dollars

Barbados dollar	Bd\$0.5855
East Caribbean dollar (used in the Leeward and Windward Islands)	EC\$0.4330
Guyana dollar	G\$0.4330
Trinidad and Tobago dollar	TT\$0.4871
United States dollar	US\$1.1690

Source: Bank of Canada (foreign exchange quotes desk), Ottawa, Ontario.

B. DEMAND

1. Present Consumption of Fish

Fish is a traditional and popular staple of the Caribbean diet, with per capita consumption ranging from a low of 19 kilograms (round weight equivalent) a year in Puerto Rico to a high of 42 kilograms in Grenada in recent years. By comparison, Canadian consumption per capita was 7.2 kilograms in 1979 (edible weight). The demand for fish, as reflected in consumption statistics, is detailed in the table that follows.

TABLE 2

Round weight equivalent consumption of
seafood in selected Caribbean countries.
Average for 1972-1974

<u>Country</u>	<u>kilograms</u>
Puerto Rico*	19
Trinidad & Tobago	20
Jamaica	20
St. Vincent	21
Guyana**	25
Dominica	26
Barbados	31
Antigua	34
Guadaloupe	34
St. Lucia	37
Martinique	39
Surinam	39
Grenada	42

* 1979 Estimate

**Guyana is the only fish self-sufficient country.

Source: Ministry of Finance and Planning, Government of Barbados, District Fisheries Project, Consulting Engineers Partnership Ltd., June, 1979.

2. Trends in Consumption of Fish Products to 1985

Traditional fish consumption, production and marketing patterns in the Caribbean are undergoing fundamental changes. These will have to be taken into consideration in an assessment of prospects for the future of Canadian fisheries exports, which are currently worth nearly C\$40 million a year. Among the factors contributing to changes in this market are the prices of Canadian products which have increased significantly in recent years. Global inflationary pressures have adversely affected balance of payments and generally produced deteriorating economic conditions, thus pressing buyers to find substitutes for fish imports. Therefore, virtually all Caribbean nations are now making efforts to develop their own fisheries, and so reduce their dependence on imports. There is also growing competition from low-priced chicken and other meat protein. These and other factors lead to the conclusion that total fish imports to part of the Caribbean Common Market (CARICOM) territories could decline, by 1985, to about 20 000 tonnes.

This potential reduction in total demand for imported fish appears to threaten Canadian sales, but nonetheless there are reasons to believe that the Canadian fishing industry cannot only maintain its level of sales to the region, but even increase it slightly over the next five years. This is because Canadian products are likely to become much more competitive with fish from other sources currently sold into the Caribbean. Many of these other exporters, particularly those in Europe, are running into supply problems. There are encouraging signs also of a new demand for frozen fillets and other more highly processed products which Canada can produce. Moreover there are opportunities

for the marketing of Canadian expertise and experience through joint ventures with Caribbean companies involved in the expansion and development of domestic industries. Finally, there will continue to be an expansion of the Puerto Rican market for various types of imported fish.

Table 3 suggests quite divergent trends in fish consumption in the selected Caribbean countries, up to 1985. In Guyana, a rapid increase in fisheries capacity will keep down relative prices and thereby strongly increase per capita consumption in a growing population. In contrast, Trinidad and Tobago and Barbados are not expecting high population growth (see Table 1) but increases in real per capita income could increase per capita fish consumption. However, there is likely to be a gradual switch away from traditional saltfish towards more highly processed, frozen and filleted, or pre-packaged items. Canadian exporters should react carefully to such changes in consumption. Finally, the largest market considered in this study, Puerto Rico, is not expected to enjoy very great per capita income growth to 1985, but there will be a relatively large increase in population. Thus per capita consumption may not change much, but the overall market will expand. Here, however, cheaper protein substitutes will be an important factor.

TABLE 3

Consumption of seafood products,
selected Caribbean countries:
actual 1978, 1979 and forecast 1980-85
(metric tons, round weight equivalent)

	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Guyana*	23 400	25 140	26 800	28 600	30 500	32 500	34 600	36 800
Trinidad and Tobago	22 740	23 000	24 400	25 200	26 200	27 800	29 300	30 900
Barbados	7 750	7 781	8 100	8 200	8 400	8 600	8 900	9 000
Leeward- Windward Islands	17 100	17 300	17 500	17 700	18 000	18 300	18 600	18 900
Puerto Rico	63 935	65 462	67 564	69 445	71 402	73 397	75 449	77 558
TOTAL	134 925	138 683	144 364	149 145	154 502	160 597	166 449	173 158

Sources: Tables 1 and 2 (Guyana projection taken from the Proposed Fisheries Development Plan, Guyana 1979-83).

- Assumptions:
- (a) Population growth rates based on Table 1.
 - (b) Per capita fish consumption based on Table 2.
 - (c) Because of low income increases, no per capita change in fish consumption is expected for Guyana or Puerto Rico.
 - (d) Barbados per capita fish consumption is assumed to reach 35 kg per annum in 1985 and Trinidad and Tobago 25 kg per annum.

C. SUPPLY

Current and Expected Supply Picture to 1985

The fish resources of the Caribbean area are not vast, because there is no extensive continental shelf along the chain of islands. However, the large continental shelf off South America is rich in marine life and supports important fisheries. In terms of resource availability, only Guyana among the nations studied has an abundant fisheries resource base. Despite this, biological and fishing surveys have indicated that because of the relatively unsophisticated technology used in most fishing areas, most species are not in danger of being over-exploited.*

The fishing industry in the Caribbean, including Guyana, is composed of two distinct sectors. There is a large artisanal sector with small boats fishing on a daily basis, and an industrial sector with large modern vessels. The industrial fleet fishes mainly off the coast of South America where abundant or highly priced species can be found. Processing and marketing activities differ between these two sectors. Processing is limited, primarily to the industrial sector, turning out products mainly for export rather than for domestic consumption. In the traditional artisanal sector, which caters primarily to the domestic market, selling is done principally through vendors on a daily basis. Because of limited resources, the artisanal fisheries have not been able to meet domestic demands for fish. Consequently, considerable quantities of fish are imported into the area.

*This is not the case for all species. The shrimp resources in the rich areas, such as off Guyana, have been heavily exploited.

A short general description of the fishing industries of the nations under review is provided to indicate the extent to which domestic production can satisfy their demands, thereby revealing their reliance on imports of fisheries products.

1. Guyana*

Guyana is the only Caribbean nation in this survey that is self-sufficient in fisheries. Production in excess of domestic demand makes feasible the government's ban on imports of fisheries products. The fishing industry consists of two major sectors.

The industrial fleet is made up of 189 shrimp trawlers and two finfish trawlers. Of these, 47 are Guyanese (34 state-owned and 13 privately-owned) and the remainder owned by American and Japanese interests but based in Guyana. They fish mainly for shrimp on the continental shelf and slope. A small-scale artisanal fleet comprises 966 vessels and boats, of which 641 are powered by inboard or outboard engines. These craft are scattered along the coast and fish in the sea or in the estuaries and rivers.

Total landings of fish from both these sectors increased from 12 100 tonnes valued at G\$15.3 million in 1970 to 18 600 tonnes valued at G\$57.5 million in 1977. The average port market price increased from G\$1.26 per kilogram in 1970 to G\$3.08 per kilogram by 1977 or by an average rate of 13.7% a year for the period (see Table 4).

*This description is based on the Proposed Fisheries Development Plan, Guyana, 1979-83, a Joint study by the Ministry of Agriculture, Government of Guyana and the Canadian International Development Agency, 1979.

TABLE 4
Fish production in Guyana, 1970-1977

Year	Landings Tonnes	Total Value as Landed G \$ Million	Average Port-Market Price G \$/kg
1970	12 100	15.3	1.26
1971	10 400	14.6	1.39
1972	12 200	18.2	1.47
1973	13 100	22.4	1.69
1974	15 900	40.6	2.55
1975	15 900	33.2	2.09
1976	15 900	37.7	2.38
1977	18 600	57.5	3.08

Source: Ministry of Agriculture, Government of Guyana.

Of the total production in 1977, 6 500 tonnes or 35% of the landings were made by the Guyanese-owned industrial fleet. Of this catch, 3 400 tonnes were shrimp (53%) and 3 100 tonnes (47%) finfish. The artisanal fleet landed a total of 12 100 tonnes, or 65% of the total, most of which were finfish, since only small quantities of shrimp are caught by this fleet.

The industrial fleet exploits shrimp to their maximum sustainable yield level. Until recently the fleet discarded any finfish caught and, since ten kilograms of finfish were caught for every one kilogram of shrimp, there was a great deal of wastage. The Guyanese government has now introduced regulations to encourage trawlers to bring in as much as 1 400-1 800 kilograms of finfish per trip with their shrimp catch. It is estimated that these measures increased landings of finfish by 2 000 tonnes in 1978.

The processing and distribution of fish in Guyana vary to a large extent, depending on whether the fish has been caught by the industrial or the artisanal fleet. These fleets operate under different pricing and marketing systems.

Fish and shrimp caught by the industrial fleet are frozen, and that requires good storage and processing facilities on shore. The finfish is purchased at a fixed government price of 55 cents per kilogram, regardless of species, and then becomes the property of the state, while shrimp landings remain the property of the fleet. Landings from the industrial fleet are processed in four processing plants in Guyana, three of which are in Georgetown and one at New Amsterdam. Two of these plants are government-owned and operated by Guyana Fisheries Ltd., which has two retail outlets at its McDoom and Kingston plants. There is one U.S.-owned plant, Georgetown Sea Foods. Fish processing capacity is quite extensive: the three processing plants in Georgetown have a rated throughput of about 12 tonnes of fish each per day (single shift) if operated at full capacity, and thus could process 10 500 tonnes of raw fish a year (300 days) producing about 3 500 tonnes of finished product.

Much of the fish landed by the artisanal fleets is marketed in the fresh state through vendors, middlemen or by direct sales in small markets in rural villages along the coast. In addition, considerable quantities are marketed at Georgetown, which has the cold storage facilities to hold and store fish.

Recently, the industrial fishery sector has been developing a more diversified line of products, including salted shark, bangamary and croakers; smoked and pickled fish, and fillets. These products are all designed to satisfy not only local preferences and tastes, but also to appeal to other markets in the Eastern Caribbean.

2. Trinidad and Tobago

The primary fisheries of Trinidad and Tobago consist of two sectors. First, there is the offshore sector with an industrial fleet based primarily on shrimping operations on the continental shelf of the Gulf of Paria. At one time, it operated off northeastern South America, mainly Guyana. Currently 45 vessels operate for the government-owned but privately operated National Fisheries Company Ltd. All vessels unload their shrimp at a processing plant in Port-of-Spain for grading, packing and freezing prior to shipment to the U.S. and Japan.

Second, the inshore artisanal fishery consists of approximately 1 000 small boats that operate from 85 beaches in Trinidad and Tobago. Most of these boats are powered by outboard or inboard engines, but some fishermen still use oars and sails.

Landings of fish in Trinidad and Tobago for the period 1970 to 1977 are shown in Table 5. Total landings increased during the period from 3 300 tonnes in 1970 to 4 823 tonnes in 1978 with a peak of 5 056 tonnes in 1975.

TABLE 5

Nominal catches of fish in Trinidad
and Tobago, 1970-1977

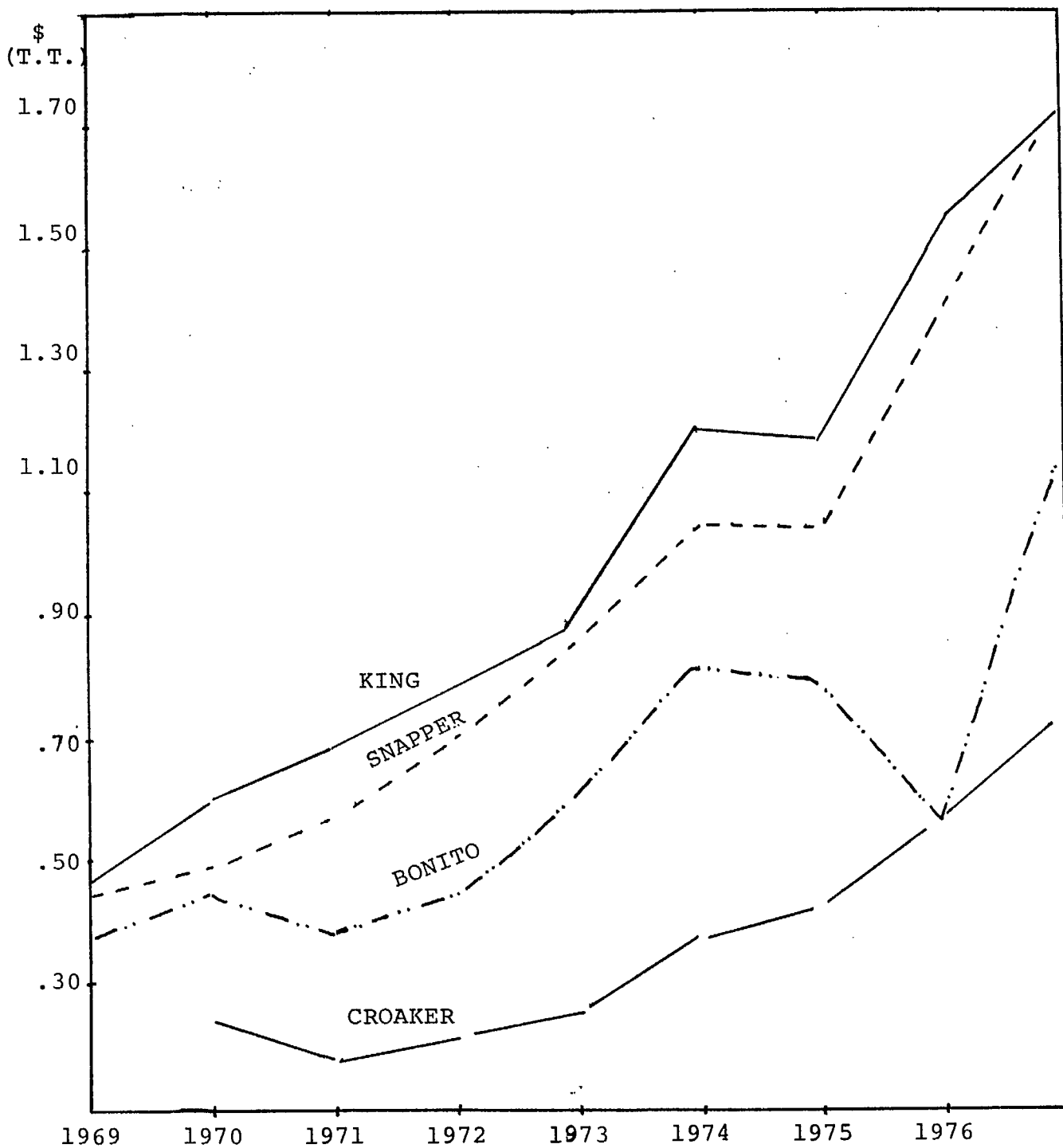
	Shrimp	Other (tonnes)	Total
1970	300	3 000	3 300
1971	300	3 400	3 700
1972	300	3 100	3 400
1973	500	3 100	3 600
1974	391	2 989	3 380
1975	416	4 640	5 056
1976	362	3 960	4 322
1977	334	3 969	4 303
1978	267	4 556	4 823

Source: Food and Agriculture Organization, 1977 Yearbook of Fishery Statistics,
Vol. 44, FAO, Rome.

There is very little fish processing done in Trinidad, except for shrimp landed by trawlers, all of which are processed for export to the U.S. or Japan at two fish processing plants. One is a large modern plant in Port-of-Spain. This plant, though not yet completed, has considerable capacity (far in excess, it seems, of resource availability) for processing shrimp and finfish. Most of the fish landed from the artisanal fleet is marketed fresh. The market for fresh fish is disorganized and relies heavily on vendors, middlemen and direct purchase of fish from fishermen. Market prices for domestic fish species have increased substantially since 1970 (Figure 1).

FIGURE 1

PRICE PER POUND (WHOLESALE) FOR FISH, TRINIDAD AND TOBAGO



Source: Fisheries Division, Ministry of Agriculture, Lands and Fisheries, Government of Trinidad and Tobago.

About one half of all fish consumed in Trinidad and Tobago is imported and distributed through established brokers and wholesale firms. The major imports are shown in Table 6. The two most important fish product types imported were salted and dried, together with canned products. Most of the fish imports came from countries outside the Caribbean area, with Canada as the major source (accounting for 62% by volume and 65% by value in 1976). Small quantities of fish were imported also from Grenada, St. Lucia, and Puerto Rico.

TABLE 6

Trinidad and Tobago: imports of fish products
1975 & 1976

	1975		1976		Average Price TT \$ per kg
	Quantity tonnes	Value TT \$	Quantity tonnes	Value TT \$	
Fresh chilled or frozen	114.7	235 972	81.8	202 126	2.47
Salted or dried	1 518.5	4 887 316	1 603.3	5 667 715	3.53
Smoked and pickled	254.9	726 541	396.5	1 187 304	2.99
Canned products	1 083.0	3 689 353	1 019.7	4 881 821	4.79
Molluscs and crustaceans	21.2	123 586	16.7	114 452	6.85
Total imports	2 992.3	9 662 768	3 118.0	12 053 418	3.86
Imports from Canada	1 533.8	5 347 503	1 927.2	7 874 552	4.09
Canadian share %	51.3	55.3	61.9	65.3	

Source: Import Statistics, Trinidad and Tobago.

3. Barbados

The Barbadian primary fisheries consist of a small deep-sea sector and an extensive artisanal sector. These are entirely different in terms of their distribution and marketing practices.

The deep-sea sector has been essentially an export industry, utilizing large vessels that used to fish for shrimp off South America. In recent years, however, the locally-owned company, International Sea Foods Ltd., has run into financial problems aggravated by difficulties in obtaining fishing privileges off Guyana and Brazil. As a result, this sector will not be treated in any detail in this study, because the future of the fleet is in jeopardy.

In 1977 there were about 1 250 fishermen in the artisanal fisheries, with a total of 498 registered boats ranging in length from 6 to 10 metres, suitable to operate up to 20 to 30 miles off shore. The estimated landings from this fleet increased from 1 810 tonnes in 1970 to 4 080 tonnes in 1979, or at an average rate of 9.4% a year for the period (see Table 7).

The major species landed in Barbados are flying fish (50% of the catch) followed by dolphins (about 20%), plus other assorted species. Approximately 50% of landings are made in the four-month period from March to June.

TABLE 7

Estimated fish landings in Barbados
1974-1979

<u>Year</u>	<u>Tonnes</u>
1970	1 810
1971	1 810
1972	1 810
1973	1 810
1974	1 810
1975	3 400
1976	4 310
1977	3 860
1978	4 080
1979	4 080

Source: Barbados Government, Dept. of Agriculture & Fisheries.

Landings are made at 26 jetties around the Island, of which Cheapside and Bay Street in Bridgetown. Oistins in Christchurch "parish" in the south and Speightstown in the north are the most important. Fish distribution is not systematically organized and sales are made in a number of ways. Among them are:

- (i) direct sales to consumers at the point of landing, through local markets and sheds;
- (ii) sales through vendors buying direct from fishermen;
- (iii) sales through a fisheries co-operative; and
- (iv) direct sales to hotels or supermarkets.

If there is a surplus, some fish is stored at the Barbados Marketing Corporation, where cold storage facilities exist, or else goes to commercial ice companies and the homes of vendors.

According to the latest available figures, imported fish accounts for about 40% of the total consumption in Barbados. The major imports of fish and fish products are shown in Table 8.

TABLE 8
Imports of fish and fish products to Barbados
1970 - 1978
(metric tons, round weight equivalent)

	Quantity	Value Bd\$
1970	3 315	2 354 355
1971	3 120	2 547 414
1972	2 925	2 731 544
1973	3 120	3 326 680
1974	3 900	5 149 471
1975	3 120	3 468 500
1976	2 615	n. a.
1977	2 840	3 913 472
1978	2 840	n. a.

Source: Barbados Ministry of Commerce 1977 Import-Export Statistics and F.A.O. Yearbook of Fishery Statistics, 1978.

In 1977, fisheries products from Canada accounted for 47% of the volume and 42% of the value of total fishery imports into Barbados. The main imports in terms of value were canned fish, dried, salted, smoked and pickled fish and fresh, chilled and frozen fish.

4. Puerto Rico

The fishing industry in Puerto Rico is the largest among the countries studied. In 1976, the Puerto Rican catch amounted to 80 900 tonnes with a value of US\$44.4 million. Landings declined however to 58 000 tonnes in 1977 (see Table 9), but recovered to over 78 000 tonnes in 1978. By far the largest segment of the industry in terms of volume and value is the Island's deep-sea tuna fishery, which has traditionally fished skipjack and yellowfin in the east central Pacific area (off the coasts of California and Mexico), and in the east central Atlantic area (off the coast of north Africa).

TABLE 9

Nominal landings, Puerto Rico, by major species, 1974 - 1978, tonnes

	1974	1975	1976	1977	1978
Skipjack tuna	34 100	34 096	29 332	18 000	47 943
Yellowfin tuna	40 100	43 994	48 482	37 902	26 994
Freshwater fish	200	200	357	357	357
Other inshore marine fish	1 600	2 254	2 272	2 157	2 400
Marine crustaceans	100	183	237	193	207
Marine molluscs	100	128	170	151	202
Marine turtles	0	11	43	2	0
Total	76 200	80 886	80 893	58 762	78 353
Tuna, % of Total	97.4%	95.5%	96.2%	95.1%	95.6%

Source: Yearbook of Fishery Statistics, Vol. 46, FAO, Rome 1979.

For the past several years the volume of the Island's domestic landings, caught by approximately 1 2001 artisanal fishermen operating some 865 small craft from various locations around the Island, has remained below 3 000 tonnes for all species of fish and shellfish combined. The tuna fishery is oriented to a half dozen very large tuna processing plants (mostly U.S.-owned) which have located in Puerto Rico to take advantage of quite generous incentive and tax abatement schemes. Puerto Rico's tuna processing currently accounts for over 40% of total U.S. tuna production and employs approximately 8 000 workers. The overwhelming proportion of the tuna produced on the Island is shipped to the U.S. Tuna is not a preferred consumer item in Puerto Rico and it is estimated that only 5% of the tuna processed there remains on the Island for domestic consumption.

The domestic fishery resource around the Island is not a large one. Puerto Rico's continental shelf is narrow and generally not conducive to fish habitation. Some of the surrounding waters (for example the Puerto Rican Trench off the Island's northwest coast) are among the deepest in the Atlantic Ocean. So while there has been slight growth of late in the domestic harvest of various fish and shellfish, it is not expected there will be significant growth in catches in waters close to the Island.

It is estimated that the domestic fishery provides only 5 to 10% of all Puerto Rico's requirements for fish. The balance is made up of imports, which in 1979 amounted to approximately 24 000 tonnes product weight, or 58 000 tonnes

¹ Fishery Statistics of the United States, 1975, U.S. Department of Commerce, Washington, 1978.

round weight (Table 10). The main products imported were fresh and frozen fish, followed by saltfish. Traditionally, Puerto Rico has been a good customer for Canadian fishery products, accounting for approximately half of Canada's saltfish exports to the Caribbean and Latin American countries. In 1979 Canadian fisheries products accounted for about 40% by volume of total Puerto Rican fisheries imports.

In recent years, there appears to have been a shift away from the traditional saltfish. A new preference for Canadian fish whole/dressed or filleted fresh or frozen is emerging. While the change is not yet a major shift, it is indicative of an important trend in Puerto Rican consumer preferences, and will be significant to the overall Canadian fish marketing prospects and strategy for Puerto Rico in the 1980's.

In addition to some relatively small inshore fisheries developments and some aquaculture projects there is an ambitious plan to develop a large-scale, longer ranging deep-sea fishery for the Caribbean area based in Puerto Rico. This involves a 10 to 15-year fisheries development program, aimed principally at harvesting underutilized squid and other resources in the waters within economic sailing distance of Puerto Rico. It is proposed that much of the catch be frozen at sea for subsequent marketing overseas.*

*At time of writing it was not known if the U.S. Congress had given formal support to the considerable financial grants and subsidies envisaged for this proposal.

TABLE 10

Supply of fish to Puerto Rico, 1979 - imports¹ and domestic landings
(tonnes, round weight equivalent)

	<u>Product weight</u>	<u>Conversion factors³</u>	<u>Round weight equivalent</u>
<u>Imports</u>			
Cod saltfish ²	7 252	3.2	23 206
frozen	1 770	1.2	2 124
Hake) saltfish	550	3.2	1 760
Pollock)	135	2.2	270
Cusk)			
Mackerel) pickled	39	1.5	59
Herring)			
Fish, frozen, miscellaneous	11 182	2.2	24 600
Shrimp, frozen	402	2.0	804
Lobster, frozen	63	1.0	63
Miscellaneous, canned	770	2.0	1 440
Salmon, canned	772	1.5	1 158
Sardines, canned	892	1.5	1 338
Tuna, canned	129	2.3	297
Shrimp, canned	339	5.0	1 695
All imports	24 295		58 814
<u>Domestic landings</u>			
Tuna landings ⁴ (retained for local consumption)			3 900
<u>Estimated supply</u>	27 515		65 462
<u>Estimated population</u> (million's 1979)	3.459		3.459
<u>Per capita</u>	7.96 kg		18.92 kg

¹ Source of import data is the Maritime Register published by the Puerto Rican Chamber of Commerce. Some product descriptions are vague and data should be regarded as approximate.

² Products are assumed to be distributed in the form of 80% saltfish, 20% frozen. Assumption based on Canadian export statistics.

³ Conversion factors are assumptions based on incomplete product information (e.g. miscellaneous canned fish) and should be regarded as approximations.

⁴ Puerto Rican tuna landings in 1979 were 78 000 tonnes. Industry sources estimate 95% of tuna production is shipped to USA.

5. The Leeward and Windward Islands

The Leeward-Windward fishing industry is almost entirely artisanal. Attempts have been made to develop an industrial fleet, but without significant success. Moreover, in virtually all the islands, increasing attention has and is being given to the development of artisanal fisheries and to improving infrastructure, mainly through the construction of fish-holding and processing plants. Landings from the fisheries in these islands increased from 6 500 tonnes in 1972 to 9 442 tonnes in 1977, or at an average rate of 7.7% a year. The distribution of these landings by islands is shown in Table 11.

TABLE 11

Fish landings in the Leeward and Windward Islands		
	1972	1977
	(tonnes)	
<u>Leeward Islands</u>		
Montserrat	100	120
St. Kitts, Nevis	1 300	1 600
Antigua	800	800
<u>Windward Islands</u>		
Dominica	500	500
St. Lucia	1 700	2 500
St. Vincent	300	581
Grenada	1 800	3 341
<u>Total</u>	6 500	9 442

Source: F.A.O., Yearbook of Fishery Statistics (various issues).

The Windward Islands accounted for 66% in 1972 and 73% in 1977 of the fish landed in the Leeward-Windward group. Grenada is the largest single producer in the area. The domestic fisheries, however, have been incapable of meeting the demands for fish products in the Leeward-Windward group, some of which have the highest per capita consumption of fish in the Caribbean area.* As a result, there is reliance on imported fisheries products. However, increased production from the domestic fisheries have brought about a decline in imports on some of the islands, including Grenada, St. Lucia and Dominica.

The Windward Islands imported about 1 729 tonnes product weight of fish valued at about EC\$5.4 million in 1976. Imports from Canada of 352 tonnes accounted for 20.3% of the volume and 27.6% of the value of these imports (Table 12). The most popular Canadian products were salted cod and herring, canned herring and sardines. A recent development in Grenada has been the production and marketing of locally produced saltfish from shark and sawhead flying fish.** These products are of good quality and can compete successfully with Canadian saltfish and bloaters in the Grenada market.

* Per capita consumption of fish by country is given in Table 2.

**These have been based on the Guyanese process since this development has been due largely to the services of a Guyanese Food Technologist on loan to the Grenada Government.

TABLE 12

Imports of fish, Windward Islands, 1976

	All imports		Imports from Canada		Canadian imports as % of total	
	tonnes	EC\$	tonnes	EC\$	tonnes	value
Grenada*	538.4	1 451 931	209.1	455 987	38.8	31.4
St. Vincent*	399.7	910 582	44.8	120 332	11.2	13.2
St. Lucia	465.7	1 462 641	41.8	149 527	8.9	10.2
Dominica	325.2	1 572 182	56.2	764 118	17.3	48.6
Total	1 729.0	5 397 336	351.9	1 489 964	20.3	27.6

*1974 data, latest available.

D. DEMAND-SUPPLY BALANCE

For purposes of this analysis, the Caribbean will be divided into two main segments namely the Caribbean Common Market (CARICOM) and Puerto Rico markets.

1. The CARICOM Market

a) Trends in the Demand-Supply Situation to 1985

The demand-supply situation in the CARICOM market* can be expected to be influenced by the following set of factors:

(i) the demand for fish products in the CARICOM region will increase mainly as a result of increases in population during the period to 1985; thus projections to 1985 will be based on the assumption in some cases of a constant per capita consumption of fish and no significant changes in trends in relative prices of fish;**

(ii) all the CARICOM territories are endeavoring to develop their fisheries, resulting in considerable duplication of effort among them (with every country wanting a larger fleet and a fish processing plant as quickly as possible). The aim is to encourage greater production to reduce imports and to attain, in the long run, self-sufficiency in fisheries products;

* Excluding Jamaica, which in 1976 accounted for 56% of the total market, Belize and the Bahamas.

**The possible impact of relative price changes is discussed elsewhere.

(iii) Guyana is the only CARICOM nation with the fisheries resources, the fleet and the processing capacity to meet not only domestic demand but also to produce a surplus for export to the other CARICOM territories. However, due to foreign currency problems, preference will be given to exporting to strong currency markets such as the United States and Japan; and

(iv) in all the other territories, increasing production of fish will be from artisanal fisheries rather than from industrial fleets. The only areas where these industrial fleets could operate economically are off Guyana, Surinam or Brazil. Restrictions imposed by these countries, including high licence fees, have and will continue to prohibit these operations unless special agreements can be negotiated. Production from the artisanal fisheries is not expected to increase rapidly during the period, mainly because of resource availability and also because this would require improved technology, bigger boats, and changes in fishing patterns and habits.

Bearing in mind these factors, demand and supply projections have been made for the CARICOM region. From a supply standpoint, however, because fisheries development will vary considerably from nation to nation in the Eastern Caribbean, the supply projection is given for Guyana and a composite projection is given for the other territories combined.* From a Canadian marketing perspective, this is consistent with the approach of viewing Guyana as a

*Since the supply situation is the most uncertain and will probably be subject to year-to-year fluctuations, a composite projection, though more conservative than if projections were made on a nation or territory-by-territory basis, was considered the best approach.

competitor in the Eastern Caribbean territories fish import markets. The demand and supply projections in terms of round weight equivalent are given in Tables 13 and 14. The projections indicate that demand will continue to be greater than the supply from domestic sources up to 1985. However, domestic fish production should succeed in narrowing the gap between demand and supply during the period and, as noted earlier, reducing imports to the area.

TABLE 13

Demand for fish products in
selected CARICOM territories 1980 - 1985

	<u>Guyana*</u>	<u>Trinidad and Tobago</u>	<u>Barbados</u> (tonnes round weight)	<u>Leeward- Windward Islands</u>	<u>Total</u>
1980	26 800	24 400	8 100	17 500	76 800
1981	28 600	25 200	8 200	17 700	79 700
1982	30 500	26 200	8 400	18 000	83 100
1983	32 500	27 800	8 600	18 300	87 200
1984	34 600	29 300	8 800	18 300	91 000
1985	36 800	30 900	9 000	18 900	95 600

Sources: Table 3.

TABLE 14

Suply of fish products, domestic fisheries in
selected CARICOM territories 1980 - 1985

	<u>Guyana*</u>	<u>Other territories</u> (tonnes round weight)	<u>Total</u>
1980	28 300	26 100	54 400
1981	32 800	27 200	60 000
1982	37 000	28 400	65 400
1983	41 300	29 600	70 900
1984	45 700	31 000	76 700
1985	50 000	32 500	82 500

*This projection is revised from the projection based on Proposed Fisheries Development Plan, Guyana 1979-83 and reflects more current data of landings in 1979.

b) Trends in the Import-Export Balance to 1985

The reliance of the CARICOM market on imports is the question most pertinent to this study. It is not possible, with the changes taking place in fisheries production capability, to forecast imports with a high degree of certainty. This caveat holds for all the projections made here. However, since exports of fish from the CARICOM territories to markets outside the area are modest (at present confined primarily to Guyanese shrimp and finfish sold to the U.S. and Japan, and small quantities of high-priced products, such as spiny lobsters to the U.S. from the Windward Islands), it can be assumed that Guyana will dominate the export situation. It has been estimated that there is a market demand for 8 600 tonnes of Guyanese fish in the United States and Japan. Since exports to these countries are currently approximately 4 000 tonnes, it will be assumed that Guyanese exports will increase from 4 000 to 8 000 tonnes during the period 1980-1985. To this will be added 1 000 tonnes of fisheries products a year from the other territories. On the basis of these production and export assumptions, the import requirements for the CARICOM territories can be calculated as shown in Table 15.

TABLE 15

The demand, supply and imports of fish
to selected CARICOM territories, 1980-85

	Demand	Domestic supply (tonnes, round weight)	Area exports	Area imports
1980	76 800	54 000	5 000	27 800
1981	79 700	60 000	5 600	25 300
1982	83 100	65 400	6 300	24 000
1983	87 200	70 900	7 000	23 300
1984	91 300	76 700	7 900	22 500
1985	95 600	82 500	9 000	22 100

Source: Derived from Tables 13 and 14.

This table shows that imports to the CARICOM territories from outside the CARICOM region could decrease from 27 800 tonnes in 1980 to 22 100 tonnes by 1985 or by 25% during the period.*

Among the main reasons for anticipating a decline in fish imports are the following factors:

- (i) Guyana has the capability or capacity to increase its fisheries production appreciably if markets and prices are conducive to doing so. The constraint is, of course, the marine resource;
- (ii) Guyana's fishing industry is at present producing substitutes from local species (particularly of salted and cured fish), for domestic consumption and export to other CARICOM countries and can also produce frozen fillets if demand exists in the region; and
- (iii) the artisanal fisheries, although lacking great potential, can produce increasing quantities of fresh fish. Attempts are also being made to produce salted and cured fish from these landings (for example, Guyana has provided technical assistance to Grenada to process salted shark).

*However, it should be noted that imports required for the total CARICOM area would be about double those projected here, since Jamaica (the largest single market), Belize, and the Bahamas, have not been taken into account. Jamaica, despite present economic difficulties and foreign currency problems, should not be written-off by Canada's fishing industry as a market.

2. The Puerto Rican Market

The demand-supply situation for fish in the Puerto Rican market up to 1985 will be affected by the domestic supply and by changes in consumer tastes and preferences in this market.

a) Trends in the Demand-Supply Situation to 1985

Puerto Rico currently imports over 90% of the fish consumed on the Island. As previously noted, the domestic fishing industry consists of many artisanal fishermen catching a variety of species around the Island. Industrial fishing is chiefly for export purposes. Various studies of Puerto Rico's waters suggest there are scant prospects of any significant increase in domestic fish landings, which would indicate there is little likelihood that Puerto Rico's dependence on imported fish products will decrease in the foreseeable future.

In recent years, however, two factors have had considerable influence on the demand for fish products, particularly salted fish, in Puerto Rico. The first is that chicken has become a major element in Puerto Rican diets, with a relatively low retail price (approximately 68 cents US per pound, whole/frozen) that has promoted considerable switching from higher-priced fish products. The second is the tremendous growth in refrigeration, freezing and storage facilities at all levels of the distribution chain has had a considerable effect on trends in food consumption. In contrast to the situation 30 years ago, home refrigeration is now available to virtually the entire population. These developments have led, especially in the larger centres, to the introduction of a wide variety of frozen and convenience-package products.

b) Trends in the Import-Export Balance to 1985

Because there is unlikely to be a marked change in Puerto Rico's capacity to supply its domestic fish consumption needs, it is possible to estimate the expected demand-supply situation to 1985. Without changing per capita consumption and recognizing the competition from chicken, but allowing for the predicted population growth, and a 5% annual increase in domestic supplies, Puerto Rican import requirements should climb from 58 500 to 68 200 tonnes, between 1979 and 1985 (see Table 16). Any failure of their tuna harvest could amplify these requirements.

TABLE 16

The demand, supply and imports
of fish to Puerto Rico:
actual 1979 and forecast 1980-85
(tonnes, round weight)

	Demand	Domestic* supply	Imports
1979	65 500	7 000	58 500
1980	67 600	7 300	60 300
1981	69 400	7 700	61 700
1982	71 400	8 100	63 300
1983	73 400	8 500	64 900
1984	75 400	8 900	66 500
1985	77 600	9 400	68 200

*Excludes industrial fishing production and exports of tuna, except for 5% retained for local consumption.

Sources: Tables 3 and 10. Assumes a 5% annual growth in artisanal fisheries production.

3. The Import Requirements of CARICOM and Puerto Rico

From the analysis of the previous two sub-sections, it is possible to construct a view of future import requirements. The four CARICOM members of Guyana, Barbados, Trinidad and Tobago, and the Leeward and Windward Islands are expected as a group to require a smaller volume of fish up to 1985, but Puerto Rico will need more. These results are summarized in Table 17 below and show stability over time.

TABLE 17

Fish import requirements of selected CARICOM countries and Puerto Rico, 1980-85
(tonnes round weight)

	<u>CARICOM</u>	<u>Puerto Rico</u>	<u>Total</u>
1980	27 800	60 300	88 100
1981	25 300	61 700	87 000
1982	24 000	63 300	87 300
1983	23 300	64 900	88 200
1984	22 500	66 500	89 000
1985	22 100	68 200	90 300

Sources: Derived from Tables 15 and 16.

TABLE 18

Volume and value of Canadian
fish exports to the Caribbean

	1978 product weight (tonnes)	value (C\$000)	1979 product weight (tonnes)	value (C\$000)
Puerto Rico	6 914	16 875	5 520	14 085
Trinidad and Tobago	2 223	4 698	1 929	4 352
Leeward-Windward Islands	1 124	1 517	1 596	2 635
Barbados	556	1 231	901	1 760
Dominican Republic	2 701	3 859	3 712	6 839
Jamaica	2 108	2 311	2 657	3 979
Haiti	2 639	1 790	3 187	2 605
Total	18 265	32 281	19 502	36 255

Source: Annual Statistical Review of Canadian Fisheries, Department of Fisheries and Oceans, Ottawa, Canada.

E. POTENTIAL TRADE

1. Market Potential for Canadian Exports

Canada exports about 20 000 tonnes of fisheries products (product weight) to the Caribbean. In 1979, these products were valued at C\$40 million. The breakdown of this trade by value and volume is given in Table 18 while the percentage distribution of these products by countries is shown in Table 19.

TABLE 19

Percentage distribution of Canadian exports to the Caribbean, quantity and value, 1978 and 1979

	1978		1979	
	Q	V	Q	V
Puerto Rico	37.9	59.2	28.3	36.3
Trinidad and Tobago	12.2	14.6	9.9	11.4
Leeward-Windward Islands	6.2	4.7	8.2	6.9
Barbados	3.0	3.8	4.6	4.6
Dominican Republic	14.8	12.0	19.0	17.9
Jamaica	11.5	7.2	13.6	15.6
Haiti	14.4	5.6	16.3	6.8
Total	100%	100%	100%	100%

Source: Annual Statistical Review Canadian Fisheries. Department of Fisheries and Oceans, Ottawa, Canada.

In 1979, nearly two-fifths by value of Canada's fish product exports to the Caribbean went to Puerto Rico. About one half went to the CARICOM countries with Jamaica being the most important market, accounting for 16%, followed by Trinidad and Tobago accounting for 10%, the Leeward-Windward Islands for 7%, and Barbados for 5%.

Given the present breakdown of our fisheries trade, the market prospects in the Caribbean area to 1985 for Canada's fishing industry will depend to a great extent on:

- (i) Caribbean domestic fish production and the expansion of interregional trade in fisheries products;
- (ii) requirements for imports of certain types of fish from outside the region;
- (iii) trends in consumer tastes and preferences which favour or otherwise affect Canadian products;
- (iv) regional barriers to trade for Canada's industry; and
- (v) prices of Canadian products compared with those of our major foreign competitors.

a) Consumer Tastes and Preferences

The Caribbean market has always favoured fresh fish from the domestic fishery, and imported salted, cured and canned products. This has been changing, however, with increased production and consumption of domestic iced and frozen fish and greater access to refrigeration. Thus, to consider the Caribbean market as mainly one for salted and cured fish and low-valued canned products is no longer entirely accurate. There seems to be room for product diversification in the region.

There is still, however, a marked preference for locally-caught fish, which is generally lower priced than imports. And there remains a healthy market for saltfish and canned products which, because of its storage qualities, can be marketed throughout the region, whereas the marketing of locally-caught fish is often restricted to coastal towns and villages. Iced and frozen trawler-caught fish is marketed "as is" in Guyana, but considerable excess quantities are now also being processed into salted or cured products. Higher-priced items such as imported frozen products are in demand from the wealthier segments of the population and from hotels catering to the tourist trade.

This short analysis of consumer tastes and preferences indicates that the role of the artisanal fisheries in the area continues to be crucial to examining market prospects since it supplies prime fresh fish. The potential of the industrial fleet for competing with imported products, particularly salted and cured fish, must also be taken into consideration. As noted, in certain markets, there is also considerable competition from low-valued meat and particularly poultry products, with some substitution occurring.

b) Pricing Considerations

To judge from prices paid for saltfish and sardines, which are among the most popular Canadian products in the Caribbean market, seafood from Canada has become substantially more expensive in recent years (Table 20). In terms of real prices, however, there has been considerable fluctuation. Prices in the Caribbean are influenced by world demand and changing demand-supply relationships. For example, the salted cod that was once an inexpensive staple has become a high-priced luxury item because cod supplies are running out in

TABLE 20

Prices and quantity relationships
for selected Canadian products
in the Caribbean

Cod, heavy salted

Year	tonnes	Puerto Rico		tonnes	Jamaica		tonnes	Trinidad	
		Current prices (per kg)	Constant '71 pr. (per kg)		Current prices (per kg)	Constant '71 pr. (per kg)		Current prices (per kg)	Constant '71 pr. (per kg)
1973	3 476	1.15	.93	6	.83	.31	447	.88	.70
1974	2 353	1.62	1.13	768	n.a.	n.a.	568	1.48	1.04
1975	2 261	1.84	1.14	1 774	n.a.	n.a.	567	1.52	.94
1976	4 031	1.84	1.10	814	1.36	.82	778	1.36	.82
1977	3 296	2.09	1.17	568	1.45	.85	919	1.61	.90
1978	3 600	2.44	1.44	296	1.51	.22	732	1.80	.86
1979	2 609	2.64	1.14	1 632	2.39	1.00	506	1.94	.81

Canned sardines

1973		2 754	.99	.79	660	1.05	.85
1974		768	1.49	1.03	81	1.24	.87
1975	Not available	1 774	1.60	.99	715	1.44	.89
1976		814	1.55	.93	533	1.95	1.17
1977		568	1.88	1.03	138	2.29	1.28
1978		296	1.88	.90	884	2.44	1.17
1979		1 632	2.70	1.16	341	2.67	1.12

some of the large traditional producing countries, such as Spain and Portugal. These relatively wealthier countries are now among those importers competing with the Caribbean nations for Canadian saltfish.

The real price and quantity relationships for the products mentioned indicate that quantities marketed fluctuate more than prices. This implies a certain amount of elasticity in demand but this would vary by product form and can only be tested through demand-supply models of the market. The latter, however, are not available. Throughout the Caribbean, the argument has been made that it is the supply of Canadian fisheries products to the market that has been the most significant factor affecting sales and not the prices of these products. Prices are nonetheless important for Canada's fish products in competing with those from other countries.

Market surveys of Trinidad, Barbados and Puerto Rico were conducted to provide more specific and pertinent data for Canada's industry on market prospects in these countries. The analysis is contained in the following pages.

Trinidad and Tobago

Trinidad and Tobago is a good market for Canadian fisheries products because it exhibits relatively high prices for fish, per-capita incomes are high, and the market is diversified. The major problems confronting exporters stem from institutional arrangements, such as price controls for staple food products, and from a port bottleneck problem that results in the slow movement of goods from ship to wholesale outlets.

The prices for domestically caught fish are much higher than in the other regional nations. Prices for popular species are in the range of TT\$11-13.2 per kilogram for fresh fish. Retail price quotations for some selected domestic fish products in the Port-of-Spain market in March 1980 are given as examples in Table 21.

TABLE 21

Retail prices for selected
domestic fish products:
Port-of-Spain, Trinidad, March 1980
(Per kilogram)
(\$TT)

<u>Species</u>	
Carite	11.00
Cavalli	12.10
King fish	14.30
Snapper	13.20

Source: Fisheries Division, Ministry of Agriculture, Lands and Fisheries, Government of Trinidad and Tobago

With these prices, it is possible for Canada to export frozen groundfish fillets which can compete from a price standpoint with domestic fish. The wide range of fisheries products marketed in Trinidad can be seen from the supermarket survey (Table 22).

TABLE 22

Retail prices, selected imported fish products:
supermarket survey, Port-of-Spain, Trinidad, March 1980

<u>Products</u>	<u>Country of Origin</u>	<u>Size</u>	<u>(TT\$) Price</u>	<u>Price (C\$)</u>
<u>Herring</u>				
Scotch herring	UK	7 oz. can	2.65	1.30
Roland sardines	Portugal	3½ oz. can	1.17	0.58
Connors Bros. kippered snacks	Canada	3½ oz. can	1.07	0.53
Connors Bros. Jutland	Canada	3½ oz. can	1.09	0.54
<u>Tuna</u>				
Fuji	Japan	7 oz. can	3.47	1.71
Chicken of the Sea	US	6½ oz. can	4.15	2.04
Dorval Tuna in vegetable oil	Peru	6 oz. can	3.85	1.90
<u>Salmon</u>				
Libby's pink	US	15½ oz. can	7.29	3.56
B.C. Packers	Canada	15½ oz. can	6.66	3.08
Universal salmon	Canada	16 oz. can	10.39	5.12
<u>Mackere1</u>				
Mackere1	Japan	15 oz. can	2.05	1.01
Mackere1 (Roland)	Japan	8½ oz. can	0.89	0.44
<u>Molluscs and crustaceans</u>				
Roland Canadian lobster	Canada	5 oz. can	24.26	11.95
Roland crab	Taiwan	6 oz. can	6.99	3.44
Oysters	Japan	8 oz. can	4.35	2.14
<u>Prepared products</u>				
Cod stocks	UK	6½ oz. can	4.09	2.01
Haddock	UK	7½ oz. can	5.39	2.66
Fish cakes	UK	7 oz. can	3.39	1.67
<u>Salt Fish</u>				
	UK	1b.	4.09	2.01
	Venezuela	1b. can	3.39	1.69

Canadian sales prospects in the Trinidad and Tobago market to 1985 are good because Trinidad is one of the few nations in the Caribbean where growth in real per capita incomes should continue and the domestic fisheries will not be able to meet total demand. Also, as pointed out earlier, domestic fish prices are fairly high. Furthermore, some of the countries that now compete with Canada in this market will experience supply problems, e.g. the United Kingdom, and Japan. Given these factors, Canada's industry should at least maintain the volume of its exports to Trinidad and Tobago, and may increase sales of new product forms such as frozen fillets, and prepared fish products.

Barbados

In general, Barbados offers Canadian exporters of fishery products a steady and relatively stable market over the next five years. While there seems to be little prospect of large increases in the quantities of species and products traditionally sold to Barbados, there appears to be some potential for growth in certain items.

Even though Barbados has had the highest rate of real growth among Caribbean countries over the past several years, it is still a relatively low-priced market. Apart from the quite limited specialty trade in certain frozen fish and shellfish, the products Canada has traditionally supplied to Barbados have been the lower priced and lower quality of saltfish (small, third grade) products and cheaper canned fish (sardines and lately mackerel, see Table 23).

The government's system of import licences imposes a retail price ceiling on saltfish products. The maximum retail price for salted cod is established at irregular intervals by the Ministry of Commerce. In May 1980 it was increased by Bd\$0.18 or 11 cents Canadian to Bd\$6.04 or C\$3.64 per kilogram (the first increase in over two years).

The ceiling in effect dictates that only small, third grade salted cod can be imported by Barbados.* There does not appear to be any prospect, at this

*Industry sources on the Island suggest that there is some potential for higher quality saltfish products in the Barbados market but the ceiling price dictates that these products cannot be supplied to that market.

TABLE 23

Average price¹ of selected Canadian fish products exported to Barbados, 1969, 1974 and 1979 (C\$ per kilogram, product weight)

	1969 \$/kg	1974 \$/kg	% change 69-74	1979 \$/kg	% change 74-79	% change 69-79
<u>Smoked</u>						
Herring, bloaters	0.347	0.953	175	1.76	81	407
Salmon	3.85	8.33	116	16.00	92	316
<u>Dried/salted</u>						
Cod, light salted 43% or less m.c.	0.445	1.50	237	1.60	7	260
Cod, heavy salted 43% or less m.c.	0.466	1.24	166	1.59	28	241
Pollock	0.435	1.26	190	1.96	56	351
<u>Canned</u>						
Herring	0.571	1.41	147	2.00	42	250
Salmon, chum	1.17	3.05	161	3.19	5	173
Sardines	0.79	1.25	58	2.06	65	161

¹ Price is stated f.o.b. Canadian plant.

Source: Exports by Commodities, 1969, 1974, 1979, Catalogue No. 65-004, Statistics Canada, Ottawa.

time, for changes in the government's policy which is to keep saltfish prices as low as possible. However, importers on the Island and Canadian exporters have held discussions with the Ministry of Commerce with a view to obtaining some adjustment in the retail maximum price for saltfish and it is hoped that there will be another adjustment within the next few months, and others during the period to 1985.

The government's policy of controlling the marketing and price of chicken, at both the wholesale and retail levels, adds another competitive aspect to the market for meat and fish products. Currently, the Barbados Marketing Corporation's wholesale and retail price maximums for frozen chicken backs are Bd\$4.17 and Bd\$4.52 per kilogram (C\$2.48 and C\$2.71) respectively. Chicken has become a staple product, especially when domestic fish is not in season, due to its relatively low cost and plentiful supply. Saltfish products, once staples, are now regarded almost as luxuries. In a price-sensitive market such as Barbados, Canadian exporters must be aware of the large influence that both domestic fish supplies and chicken have on the market for imported fish products. The outlook by major product form is reviewed below:

(a) Saltfish

Saltfish remains popular but will continue to face competition from domestic fish catches in season and domestic frozen fish supplies (mainly out of season) as more processing, freezing and storage capacities are developed on the Island. Added competition may result from anticipated increases in imports of saltfish products from other CARICOM countries (mainly Guyana) and relatively cheap protein substitutes. The outlook for saltfish products over the next five years is for stable markets but relatively little growth.

(b) Frozen Fish Products

Canadian statistics indicate some growth in exports to Barbados over the past few years, as compared to 10 years ago when virtually none were recorded. In 1979, Canada exported 8 tonnes of frozen fish to Barbados. Because frozen fish tends to be more expensive, the principal factors that will influence the market prospects to 1985 are the overall growth in real per capita incomes, developments in the domestic fishing industry and in freezing capacity, and the expansion of tourist trade. A growth rate of 4% per annum to 1985 is anticipated for frozen fish sales.

(c) Smoked and Pickled Fish

Smoked and pickled fish, mainly herring bloaters, are traditional foods in Barbados but the quantities consumed are quite small and demand has been relatively stable for some years. Herring bloaters are by far the most important of these items, but they have experienced some overall decline over the past 10 years (75 tonnes in Canadian exports to Barbados in 1969 compared with 46 tonnes in 1979). The prospects are for stable demand but relatively little growth over the next five years.

(d) Canned Fish

Canned fish accounted for over half of Barbados' imports of fish products in 1977. Sardines accounted for over 40% of canned imports and Canada had almost 90% of the market. Canned mackerel has become a significant product and in 1977 accounted for almost half of the canned

fish products imported to the Island, and almost one-quarter of all imported fish products. Japan supplied over 90% of these imports, followed by Poland and the U.S.. There would appear to be some prospects for Canadian exporters to expand in this area, subject to the Canadian industry's ability to meet fairly stiff price competition.

(e) Shellfish

Exports of frozen shellfish to Barbados have fallen from 9 tonnes in 1967 to 2 tonnes in 1979. The relative high cost, combined with competition from spiny lobsters and shrimp from the regional fisheries, and the relatively high tariff (30% on fresh or frozen shellfish and 35% on canned shellfish) have served to reduce demand for these Canadian products. The prospects are that although these products will continue to appeal to the more affluent segments of the domestic and tourist markets, there is little likelihood of growth over the next several years.

In conclusion, the potential for the traditional forms of Canadian fish products imported by Barbados (saltfish, pickled, smoked) is for stable demand with, at best, modest growth over the next five years. There appears to be a prospect for some growth in sales of frozen fish, but only to a small and relatively affluent segment of the Barbados domestic and tourist markets. An examination of the relatively large (in Barbados terms) market for canned fish products indicates there could be opportunities in canned mackerel for Canadian exporters. The latter possibility is, however, subject to Canadian processors' ability to sell at competitive prices.

Puerto Rico

As shown in Table 17, imports of fishery products to Puerto Rico are expected to grow substantially, from 60 300 tonnes in 1980 to 68 200 tones by 1985. The major growth area will probably be frozen and convenience items.

For a number of years Puerto Rico has been a significant importer of Canadian fish products. In 1979, the Island accounted for C\$14 million or 36% of the value of our fish exports to the Caribbean, Central and South America. The principal product imported by Puerto Rico was saltfish, and the Island accounted for over 50% of our saltfish exports to the region in 1979. In spite of the relatively large market for this product, however, the long-term trend for saltfish exports from Canada appears to have been downward. In 1974, for example, the volume of salted cod shipped to Puerto Rico from Newfoundland was 10 500 tonnes (product weight), about two and one-half times the quantity of salted cod imported from Canada in 1979. This decline occurred in spite of a substantial increase in the Island's population during the same period.

The decline in saltfish consumption in Puerto Rico has been due to the substitution of other food and fish products rather than direct competition from other countries. Canada remains the dominant supplier of saltfish, with approximately 90% of the market share in 1979.

TABLE 24

Canadian exports of fishery products to
Puerto Rico, 1969, 1974, 1978 and 1979
(quantities in tonnes, product weight; values in C\$000)

	1969		1974		1978		1979	
	Q	V	Q	V	Q	V	Q	V
<u>Whole or dressed</u> (fresh, frozen)								
Sub-total	42	16	7	7	72	163	246	367
<u>Fillets</u> (fresh, frozen)								
Sub-total	42	31	34	108	76	173	226	557
<u>Blocks & slabs</u>								
Sub-total	-	-	-	-	-	-	24	53
<u>Smoked herring</u>								
Sub-total	.5	-	190	192	186	259	99	159
<u>Salted or dried</u>								
Cod, boneless, salted	364	311	38	78	287	632	112	253
Cod, lt. salted, 43% or less m.c.	1894	979	134	253	475	1252	264	769
Cod, hvy salted 46- 50% m.c.	20	13	127	226	435	1030	758	1928
Cod, hvy salted 43% or less m.c.	42	20	15	25	430	1052	189	511
Cod, hvy salted, 43% or less m.c.	2681	1550	2354	3811	3600	8799	2609	6851
Cod, other salted products	836	629	0	0	141	355	87	305
Haddock & cusk	124	91	66	108	93	256	110	281
Hake	33	19	276	436	300	769	102	306
Pollock	530	261	607	743	709	1774	619	1599
Fish salted or dried NES	0	0	30	32	1	1	57	131
Sub-total	6474	3873	3647	5712	6471	15920	4907	12934
<u>Pickled</u>								
Sub-total	26	5	96	61	52	44	18	15
<u>Canned</u>								
Sardines	16	13	9	9	-	-	-	-
Salmon	-	-	248	782	-	-	-	-
Fish n.e.s.	-	-	24	21	53	207	-	-
Sub-total	16	13	281	812	53	207	-	-
Grand total	6601	3938	4255	6892	6910	16766	5520	14085

TABLE 25

Average price¹ of selected Canadian fish products
exported to Puerto Rico, 1969, 1974 and 1979
(C\$ per kilogram, product weight)

	1969 \$ kg	1974 \$ kg	% change 69-74	1979 \$ kg	% change 74-79	% change 69-79
<u>Whole or dressed</u> (fresh, frozen)						
Haddock, Hake	.38	1.00	163	2.25	125	492
<u>Salted/dried</u>						
Cod, boneles	.85	2.05	141	2.26	10	166
Cod, light salted 43% or less m.c.	.53	1.89	257	2.91	54	449
Cod, heavy salted 43% or less m.c.	.58	1.62	179	2.63	62	353
Pollock	.49	1.22	149	2.58	111	331
<u>Smoked</u>						
Herring, bloaters	.30	.99	233	1.58	60	427

¹ Price is f.o.b. Canadian plant.

Source: Exports by Commodities, 1969, 1974, 1979; Catalogue #69-004,
Statistics Canada, Ottawa.

Average prices for selected Canadian products to Puerto Rico are shown in Table 25. A supermarket survey revealed that prices for Canadian products were generally competitive with other countries. However, chicken prices are considerably lower than those of most fish products on the shelves. For example, the comparative retail prices per kilogram between chicken and some fish products were as follows:

	US\$ per kilogram
Frozen chicken legs	1.87
Whole chicken	2.06
Sardines	6.85
Tuna	6.45
Whole chicken, frozen	1.49

A number of developments have resulted in significant changes in the Puerto Rican market during the past few years:

- (i) in the last 20 years the Island's economic base has changed from an agricultural economy to one largely based on light manufacturing and tourism;
- (ii) with these changes has come greater affluence. Within the Caribbean area, Puerto Rico's per capita income of US\$2 720 in 1978 was second only to Trinidad and Tobago;
- (iii) the Island's urban population has grown rapidly at the expense of the rural areas and there has been a significant increase in the number of households with two or more adults in the work force;
- (iv) there has been a substantial growth in freezer holding and storage capacity and home refrigeration in recent years;
- (v) there has been an increase in the consumption of chicken;
- (vi) consumers increasingly prefer North American frozen and convenience food products; and
- (vii) the U.S. food stamp program was phased into Puerto Rico in the mid-1970's and is now fully operational. Because of the Island's lower per capita incomes relative to the United States, it is estimated that the food stamp program applies to a majority of the Island's households. It is also estimated that the program provided about US\$1 billion in food stamps to Puerto Rico last year.

As is the case in a number of Caribbean countries, there is some government intervention aimed at controlling the price of certain staple foods in Puerto Rico. For saltfish, there is a maximum percentage markup allowed at various levels of the distribution chain rather than the direct imposition of a retail price ceiling. Currently the maximum markup permitted on imported saltfish is 8.5% at the importer/broker level and 18.5% at the retail level. While these controls do influence the retail price of saltfish and might result in making the price more competitive with other foods, they may well create certain disincentives for wholesalers and retailers who are allowed greater spreads in the distribution of other foods. The outlook by major product forms is discussed below:

(a) Saltfish

Salted cod remains a very popular dish and the Puerto Ricans have evolved a number of recipes unique to the Island. Because it is relatively high-priced and time-consuming to prepare, it is unlikely that per capita saltfish consumption will increase in Puerto Rico during the next five years. The longer-term trend (the last 30 years) indicates consumption both in absolute and per capita terms has fallen significantly in Puerto Rico. The outlook for saltfish products over the next five years is for relatively stable markets, but with little if any growth.

(b) Frozen Fish Products

The market for frozen fish is the most promising area for growth. Canadian exports of frozen fish to Puerto Rico have increased in value from

C\$47 000 in 1969 to C\$977 000 in 1979 (see Table 24). Freezing and refrigeration capacity were extremely limited on the Island until fairly recently but are now developing rapidly at all levels of the distribution chain, especially in the larger population centres. The modern supermarket chains in the larger centres feature displays of frozen fish and other products which would rival most supermarkets in Canada and the U.S..

The frozen fish and convenience food market is served heavily through the U.S. with substantial refrigerated containership traffic originating from Miami, New York and Port Elizabeth, New Jersey. Home refrigeration is now extensive, especially in the larger population centres. This development, coupled with the rising number of households with two or more adults in the work force, suggests that frozen fish and convenience products should increase their share of the market during the next five years.

(c) Smoked and Pickled Fish

Canadian exports of smoked and pickled fish to Puerto Rico increased steadily throughout the first part of the last decade, then levelled off during the last five years. Sales of herring bloaters, the most important product of this group, have declined somewhat during the last several years. The prospects for Canadian exports would appear to be stable at best with perhaps some small decline possible over the next five years.

(d) Canned Fish

Puerto Rico imports large quantities of canned fish, with shrimp, sardines and salmon accounting for the largest volume. Spain holds a large share of the market for miscellaneous canned varieties, while the U.S. dominates the market for canned salmon and shrimp. Japan, followed by Peru and Spain, share most of the market for canned sardines. From very small quantities 10 years ago, imports of canned fish (mostly salmon) from Canada increased significantly until 1974 when sales declined again to previous levels.

Since free trade exists between the U.S. and Puerto Rico, Canadian producers of canned salmon are at a disadvantage, relative to U.S. suppliers. There is, however, some prospect for entry into the canned sardine market, if Canadian producers can meet stiff price competition from Japan, Peru and Spain.

(e) Shellfish

Canned and frozen shrimp constitute the principal shellfish species imported by Puerto Rico with U.S. products dominating the market. Frozen spiny lobster (langouste), much of it originating from nearby Caribbean sources, is the second most popular shellfish species. Currently, Puerto Rico's domestic fishery produces about 40% of the spiny lobster consumed on the Island. While spiny lobster is a highly desired product, it is possible that a small specialty market, probably oriented to the tourist trade, might be developed for Canadian lobster.

In conclusion, there will be an increasing demand for imported fishery products in Puerto Rico. The potential for the traditional forms of Canadian fish products imported by Puerto Rico (saltfish, pickled and smoked) is for stable demand over the next five years. The market for frozen fish products offers good prospects for Canadian producers, although there will be strong U.S. competition. The market for canned sardines and the specialty market for lobster offer relatively modest prospects for development.

2. Market Entry Requirements and Barriers to Trade

The major barriers to Canada's trade in fisheries products are tariffs and institutional factors.

Institutional factors are shown in Table 26. Of the countries studied, Guyana was the only one with price controls for domestic landings.* While in Trinidad and Tobago, and Barbados, there are restrictions on markups of staple fisheries imports so that prices to consumers are kept as low as possible. The effect of these restrictions is to discourage imports of fish by reducing profit levels.

From a tariff standpoint, the territories do not restrict inter-regional trade in fisheries products. However, there are external rates of duty applicable to the CARICOM region. These are shown in Table 27.

*There are price controls for domestic species in effect in some of the Windward and Leeward Islands.

TABLE 26

Institutional Factors Affecting Trade

Fish, fresh, chilled or frozen

Import licences are required in Barbados, Belize, Grenada, Guyana, Jamaica, St. Kitts-Nevis-Anguilla, St. Lucia, St. Vincent and Trinidad and Tobago.

Fish, dried, salted or in brine, or smoked

Prohibition is applied in Guyana.

Import licences are required on all the items in Belize, Grenada, Jamaica.

In St. Kitts-Nevis-Anguilla, import licences are required for fish, dried or salted.

In Saint Lucia, import licences are required for salted saithe.

In St. Vincent, import licences are required except for cod, mackerel and herring.

Crustaceans and molluscs, fresh, chilled, frozen, salted or in brine, or dried

Import licences are required in Belize, Guyana, Jamaica and Trinidad and Tobago.

Prepared or preserved fish

Prohibition is applied in Guyana.

Import licences are required on all the items in Grenada and Jamaica.

Import licences are required on all the items except sardines in Belize.

Import licences are required on all the items except sardines, salmon and herring in St. Kitts-Nevis-Anguilla.

Crustaceans and molluscs, prepared or preserved

Prohibition is applied in Guyana.

Import licences are required in Belize and Jamaica.

Source: CARICOM H.Q., Georgetown, Guyana.

TABLE 27

Rates of duty applicable in Barbados,
Belize, Guyana, Jamaica and Trinidad and Tobago

Aquarium fish	25%
All other fish, fresh (live or dead), chilled or frozen	15%
Cod, mackerel, herring and alewives, dried, salted or in brine, or smoked	Free
All other fish, dried, salted or in brine or smoked	10%
Crustaceans and molluscs, fresh, chilled, or frozen, salted, in brine or dried	30%
Sardines, herrings, mackerel, prepared and preserved	3%
Caviar and caviar substitutes, prepared or preserved	45%
All other fish, prepared or preserved	25%
Crustaceans and molluscs, prepared or preserved	35%

Rates of duty applicable to the Leeward-Windward Islands*

Fish, fresh or chilled	Free
Frozen fish, in packages for retail sale	15%
Other frozen fish	Free
Cod, mackerel and herring, dried, salted or in brine or smoked	Free
All other fish, dried, salted or in brine, or smoked	10%
Crustaceans and molluscs, fresh, chilled, frozen, salted or in brine or dried	15%
Sardines, herring and mackerel, prepared or preserved	3%
Caviar and caviar substitutes	30%
Other fish, prepared or preserved	5%
Crustaceans and molluscs, prepared or preserved	15%

*With the exception of Montserrat.

Source: CARICOM, Georgetown, Guyana

F. MARKET IMPLICATIONS FOR CANADIAN TRADE OF GUYANESE EXPORTS

As mentioned above, Guyana has been included in this survey because of its role as a potential competitor in the Caribbean market for fish. Since the ban on fisheries imports in 1971, no significant quantities of fish have been exported to Guyana from Canada. This situation is not expected to change.

As was shown in Tables 13 and 14, Guyana expects to have increasingly large quantities of fishery products available for export to 1985. Guyana enjoys tariff protection when selling to the nearby CARICOM countries but, due to foreign currency problems, may prefer to sell to currency markets such as the United States and Japan.

There are good prospects for Canada in joint venture arrangements with Guyana's industrial fishing sector since the main barriers to fisheries development are not resources but lack of capital, modern technology and marketing expertise.

Capital is needed for fleet replacement and new fishing gear and also to create an adequate system, e.g. packer-type vessels, to retain the majority of finfish caught by the industrial fleet. The finfish that are caught and retained by the industrial fleet are often improperly handled and processed, and education is needed.

In all these areas Canadian capital and experience could be profitably employed.

The advantages of joint-venture arrangements to Canadian companies are as follows:

- (i) this is the only way to break into the domestic market in Guyana;
- (ii) joint ventures will enable the companies to share in export markets for Guyanese fish products in the CARICOM region and the European Common Market where they enjoy a preferential tariff;
- (iii) joint ventures could provide Canadian companies with tropical fish species for marketing in Canada and the United States, thereby diversifying their product lines. There is good demand for tropical fish products in large centres in Canada, where they command relatively high prices.

Most of the countries visited had few restrictions on joint-venture arrangements. However in Guyana, a joint venture with any government agency requires that the government hold 51% of the controlling shares or capital.

G. CONCLUSIONS

1. The Caribbean region has been an important and traditional market for Canadian fisheries products, particularly salted cod and other cured and smoked products. Canadian exports to the area are now valued at nearly C\$40 million a year. However in recent years, two major forces have disrupted the traditional market pattern: the increasing prices of Canadian products, and attempts by virtually all Caribbean nations and territories to develop their own fisheries. Exacerbating these forces have been deteriorating economic conditions in the Caribbean area on the whole due to worldwide inflationary pressures, which have adversely affected the balance of payments and economic development. Nonetheless, there are some prospects for Canada's industry in this area.

2. The prospects for Canada's fishing industry in the Commonwealth Caribbean (CARICOM) market to 1985 depend on domestic production and interregional trade in fisheries products, which will determine the magnitude and type of imports required. It was found that there are prospects for fish production in this area to increase significantly to 1985, mainly as a result of expansion in the industrial fisheries in Guyana and in the artisanal fisheries in other nations. Guyana is developing its fisheries, diversifying its products, and planning to market them in the Caribbean and in the United States. It is seen as being a competitor to Canada rather than as a market. This factor coupled with serious attempts at import substitution by virtually all Caribbean nations, indicate that imports of fisheries products from outside the area should decline. There is already evidence of this particularly in the smaller islands, the Windwards, which were not covered in detail in the analysis.

3. For Canada's fishing industry however, there are good prospects for maintaining the level of exports or even increasing this level slightly during the period to 1985. Canadian fisheries products could become more competitive with products from other countries that sell to the area because of fisheries supply problems in these countries. The demand for imported fish in the area will probably change to frozen fillets and more highly processed fish products, which Canada produces. Demand for saltfish could conceivably decrease if the Guyanese product can compete in price.

4. Apart from the market prospects, Canadian industry can also explore possibilities for joint-venture arrangements with Caribbean companies. This would enable them to take greater advantage of market prospects in the area. In Guyana in particular, there are good prospects for mutually advantageous joint-venture arrangements.

5. Of the countries surveyed, Puerto Rico has the largest population and the second highest income level. It has been a major market for Canadian fishery products for many years. Although per capita income and consumption of fish are expected to remain stable, the population is expected to grow, thus expanding the total market for fish. The composition of the market, however, is expected to change.

6. In 1979, the value of Canadian exports of fishery products to Puerto Rico was C\$ 14.1 million, with dried saltfish accounting for 87% of this by value. Canada's dried saltfish exports to Puerto Rico constituted 47% of the value of Canada's dried fish exports to Central and South America. But consumption of saltfish is declining. It is estimated that 30 years ago the volume of Canadian

exports of saltfish to Puerto Rico was approximately double that exported currently. The decline has occurred in spite of a considerable increase in Puerto Rico's population during the same period. While saltfish remains a favourite food on the Island, its popularity is now greatest in rural areas.

7. Puerto Rican consumption of frozen fish and convenience items is expected to rise. There has been a considerable growth in refrigeration, freezing and storage capacity at all levels of the distribution chain. In contrast to the situation 30 years ago, home refrigeration is available to virtually the entire population. A wide variety of frozen and convenience fisheries products have been introduced. Another influence on demand has been an increase in households with two or more adults in the workforce.

8. A factor opposing increases in demand for fish is the relatively low price of chicken which has caused a significant shift from more costly fish products. Chicken is now a major element in Puerto Rican diets.

9. Currently Puerto Rico imports over 90% of the fish consumed on the Island. The domestic fishing industry consists mainly of a small artisanal fleet catching a variety of species around the Island. Various studies of Puerto Rico's waters suggest there are few prospects of the resource supporting any significant increase in domestic fish landings. Industry sources anticipate, therefore, that there is little likelihood that Puerto Rico's dependence on imported fish products will decrease in the foreseeable future.

10. There are good prospects for Canada maintaining its overall share of the Puerto Rican market. However, in terms of product forms, the outlook for

Canadian saltfish products is at best one of a stable and relatively flat demand. The best prospects in this market appear to be in frozen and convenience-packaged products.

APPENDIX I

An Economic Overview of the Caribbean Area

The Eastern Caribbean and Guyana are all members of the Caribbean Common Market (CARICOM) which also includes Jamaica and Belize. Although all the territories within this region were not studied in detail, trading strategies and problems are similar in many respects, particularly in a fisheries context.

The area studied encompasses nations and territories with great differences in their economic conditions and economic growth records (see Table A-1). The population of the market area, including the Windward and Leeward Islands, is about 6.5 million of which 5.3 million or 82% are from the countries selected for study. Excluding Guyana, which is more of a competitive country in fisheries than a market for Canada, the population is therefore 5.7 million of which 4.7 million or 82% are from the selected countries treated in this report.

TABLE A-1
Population and GNP, Caribbean area, 1978
growth rates, 1970-1977

	Population mid-1978(P) (' 000)	GNP at market prices, 1978(P) (US\$ million)	GNP per capita, 1978(P) (US\$)	Growth rate % pop. 1970-77	Growth rate GNP per capita (real) 1970-77
<u>Puerto Rico</u>	3 365	9 150	2 720	2.8	+0.1
<u>Leeward Islands</u>					
Antigua	74	70	950	1.3	-3.7
St. Kitts-Nevis	50	30	660	0.9	+1.6
<u>Windward Islands</u>	408	210	515		
Dominica	77	30	440	1.2	-4.1
St. Lucia	120	80	630	2.3	+0.7
St. Vincent	105	40	380	2.3	-2.2
Grenada	106	60	530	1.8	-3.2
<u>Barbados</u>	250	490	1 940	0.5	+2.6
<u>Trinidad and Tobago</u>	1 137	3 310	2 910	1.2	+1.5
Guyana	836	460	550	2.0	+0.4

P: Preliminary

Source: 1979 World Bank Atlas (World Bank), Washington, D.C.

The GNP per capita was highest for Trinidad and Tobago (US\$2910) followed by Puerto Rico (US\$2720) and Barbados (US\$1940). All the other nations and territories have per capita incomes of under US\$1000. Growth rates of GNP per capita for the period 1970-1977 were generally low: real growth in incomes took place only in Barbados and Trinidad, remained relatively stable in Puerto Rico and Guyana and declined in the Leeward and Windward Islands collectively.

The economies of the nations and territories in the area are similar in that there is a heavy dependence on primary industries for their economic development. Most of the nations relied heavily on agriculture in the past for development, but Guyana and Trinidad and Tobago are rich in other natural resources: Guyana in bauxite and other metals and minerals; Trinidad and Tobago primarily in oil and gas. Puerto Rico has been industrializing rapidly since the 1960's. Barbados now relies mainly on tourism and agriculture.

All the nations are highly dependent on international trade for their economic livelihood. The value of exports and imports for 1976 and 1978 were as follows:*

TABLE A-3

	Exports		(US\$ millions) Imports		Exports - Imports	
	1976	1978	1976	1978	1976	1978
Guyana	323	234	283	326	+40	-92
Trinidad and Tobago	2 415	1 973	2 105	2 022	+310	-49
Barbados	176	250	79	101	+97	+149
Puerto Rico	3 346	4 850	5 432	6 529	-2 086	-1 679

The trade statistics show these nations, with the exception of Puerto Rico, had a favourable balance of payments in 1976 in that the value of their exports exceeded the value of their imports, but in 1978 this had changed, with the nations experiencing adverse balance-of-payments problems. Because of the magnitude and importance of the trade sector in all these economies, this is not only indicative of deteriorating economic conditions since 1976 but also of foreign exchange problems.

A major characteristic of trade is that imports consist of many foodstuffs, since the nations, with the exception of Guyana, are not self-sufficient in food production: domestic agriculture, livestock, dairy and fishing industries have been unable to meet demands. Increasing prices for imported foodstuffs, however, have led to import substitution measures in all nations, the most severe of which are in Guyana, where a ban has been imposed on fish and other food imports since 1971.

*Source: World Trade Statistics.

Another important trading aspect with respect to the Eastern Caribbean nations and Guyana is the CARICOM attempt to encourage interregional trade among member nations and territories. Trade from outside the area is discouraged by tariffs, which now differ between territories but which are being phased into a common external tariff for the region. In spite of this, the CARICOM region, not being self-sufficient in food production, imported food products to the value of EC\$1 billion of which fish and fish products represent EC\$175 million or 17.5% of the total in 1974.

¹Source: Caribbean Development Bank, Bridgetown, Barbados

