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

CANADA

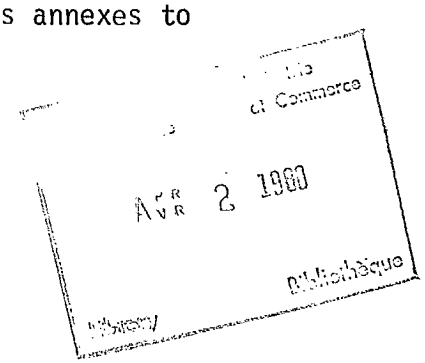
Government of Canada | Gouvernement du Canada

Fisheries and Oceans | Pêches et Océans

Industry, Trade and Commerce | Industrie et Commerce

Canada. Dept. of Fisheries and Oceans. Fisheries Economic Development + Marketing. Marketing Services Branch.

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



D R A F T

Annex to the
Worldwide Fisheries Marketing Study:
Prospects to 1985

CANADA [v. 2]

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December, 1979

*The authors wish to caution readers with regards to some of the statistical information indicated as preliminary in this report. In particular, more recent information on per capita consumption indicates that this figure should be revised somewhat downward. However, the authors believe the basic tenets and trends indicated to be valid. The next draft will of course include such revisions.

ACKNOWLEDGEMENT

The preparation of the Worldwide Fisheries Marketing Study, of which this Report is a part, embodies many hours of work not only by the authors but also and more importantly by those who generously provided us with market information and advice.

Specifically, this Report would not have been possible without the cooperation and assistance of fishermen, processors, brokers, wholesalers, distributors, retailers, consumers and their organizations as well as government officials with whom we visited and interviewed. Though too numerous to mention separately, we would like to extend our sincere gratitude and appreciation.

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

With regard to the overall Study, we would like to acknowledge:

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- the guidance of the Steering Committee: K. Campbell, Fisheries Council of Canada; R. Bulmer, Canadian Association of Fish Exporters; R. Merner, IT&C; and D. Puccini (and J. John) DFO;
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To all of the above, we extend our thanks.

E.W.

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 an 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 potential on a country and species basis.

Specifically, the purpose of the Study is to identify the short (1981) and longer-term (1985) market opportunities for selected traditional and non-traditional species in existing and prospective markets. In this initial phase, 14 country markets and 8 species groups are analysed. It should be noted that while the information contained in the Reports was up-to-date when collected during March-June 1979, some information may now be dated given the speed with which changes are occurring in the marketplace. In this same vein, the market projections to 1981 and 1985 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 the recently concluded GATT-MTN 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.

Thus, the results of the Study should 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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Department of Fisheries and Oceans

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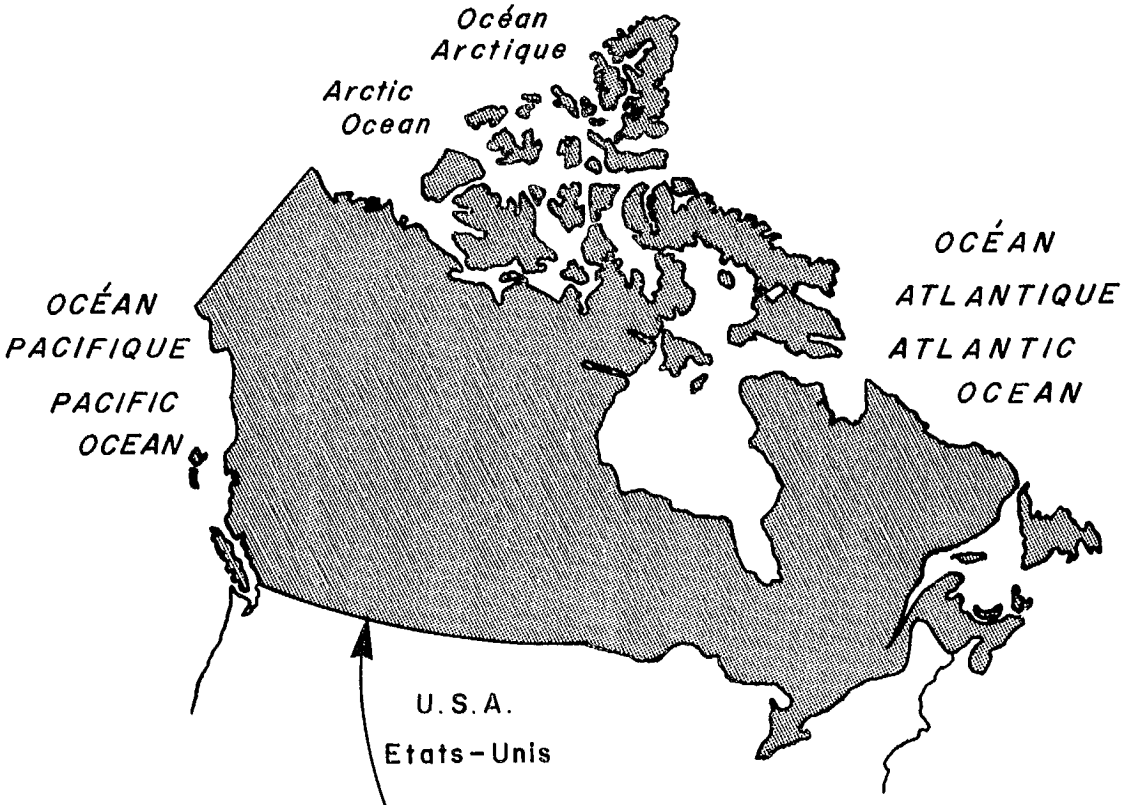

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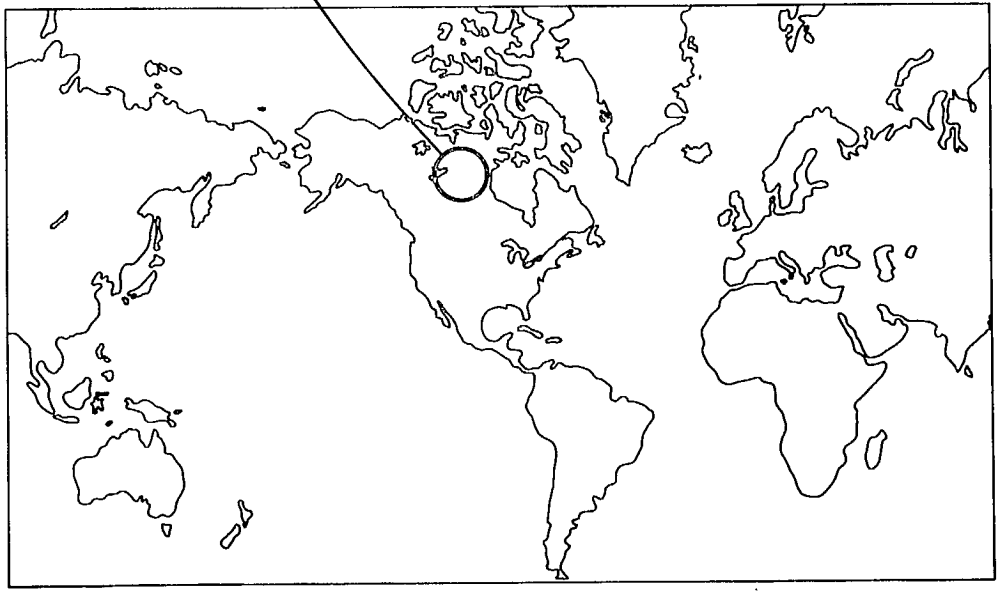

I. Consumption of Fisheries Products in Canada

a) Present Consumption Patterns

The Canadian domestic market for fish products is relatively small with a per capita domestic consumption in 1978 of approximately 8 kilograms (kg). As Table 1 shows, the domestic disappearance of fisheries products in Canada amounted to 281 000 metric tons (t) valued at $615 million. Of this, 112 000 t valued at $253 million were imported fisheries products, which accounted for 40 percent of the volume and 41 percent of the value of the domestic consumption of fish products (including fish meals, oils, etc.).

The high import to domestic fish product consumption ratio is somewhat of an anomaly in a country which has a fisheries resource the dimension of Canada's. It would appear indicative of a significant potential for import substitution if certain industry and marketing constraints could be overcome. The potential for import substitutability will be discussed in this report.

As can be seen in Table 2, Canadians have a long way to go before approaching the levels of consumption of such traditional fish eating countries as for example Japan and those which border the Mediterranean (France, Spain, Portugal, etc.). In this comparative context, there appears to be significant room for growth. It is interesting to note in this connection that specific ethnic communities who have brought with them and retained a tradition of fish consumption play a significant role in the Canadian market.

Table 1. Highlights of Canadian fisheries[1]

		1977	1978 (Prel.)
Total Landings:	tonnes, round weight	1 254 930	1 358 240
	value in $'000	485 263	652 790
Total Production:	tonnes, product weight	602 617	661 925
	value in $'000	1 190 795	1 486 935
Total Exports:	tonnes, product weight	461 914	492 900
	value in $'000	815 721	1 125 800
Total Imports:	tonnes, product weight	106 401	112 250
	value in $'000	220 789	253 480
Domestic Disappearance:	tonnes, product weight	247 104	281 275
	value in $'000	595 863	614 615
Per Capita Consumption:	kilograms, edible weight[2]	7.5	7.9

Table 2. Current and projected per capita consumption of fish products for Canada and selected countries[3] (edible or product weight in kg).

	1977	1981	1985
Japan	65.7	65.0	65.0
Spain	40.0	41.0	42.0
Portugal	35.8	35.0	35.0
France	22.0	23.0	24.0
Belgium	15.2	15.2	15.4
Sweden	16.8	16.7	16.5
Netherlands	12.0	12.1	12.3
Greece	9.2	9.6	10.1
Canada	*7.5*	*8.7*	*10.4*
United Kingdom	7.4	7.9	8.0

[1] *Annual Statistical Review of Canadian Fisheries -- 1977*, Vol. 10. Dept. of Fisheries and Oceans, Ottawa, 1979. Also Dept. of Fisheries and Oceans unpublished preliminary figures for 1978. Numbers include inland commercial fisheries, and exclude recreational catches.

[2] All other production data is in terms of product weight and includes fish meal and oils, which explains the occasional anomaly between per capita consumption and domestic disappearance data.

[3] From selected draft country annexes to the Worldwide Fisheries Marketing Study, Marketing Services Branch, Economic Development Directorate, Dept. of Fisheries and Oceans, Ottawa, 1979.

The domestic market for fisheries products also has significant potential for growth when viewed in the context of alternative consumer goods. Table 3 shows that among competing items, beef is by far the largest seller on a per capita basis in Canada, followed by pork and poultry. Fish consumption in 1977 was only 15% of per capita beef consumption. It appears that there is some "substituting" by consumers depending on the relative prices of these various commodities. Recent rapid price increases for beef have caused sales of the other retail products to increase, but not as greatly as expected. In this respect, it is suspected that many consumers have turned from the retail level to the food service sector where relative prices have not been rising as rapidly. Beef price increases are expected to continue for the next 24 to 36 months, and then stabilize.

Table 3. Canadian consumption of beef, pork, poultry and fish[1] (kg per capita per year)

	1972	1973	1974	1975	1976	1977
Beef	42.0	41.6	43.0	46.3	51.3	49.0
Pork	27.7	26.1	27.0	23.1	24.1	24.3
Poultry	20.6	21.2	20.6	19.1	20.3	20.1
Fish[2]	6.2	6.1	6.5	6.1	6.9	7.5

[1] *Apparent per capita food consumption in Canada, 1977.* Statistics Canada, Catalogue #32-226; Ottawa, 1979.

[2] For a breakdown by fish products refer to Table 4.

In a country as geographically large as Canada, there are significant regional differences in fish consumption patterns. The largest markets are in Ontario and Quebec which is to be expected given the country's population distribution (see Table 5). A retail sales survey carried out in 1974[1] indicated the following estimates for sales of fresh and frozen fish: Atlantic $12.3 million; Quebec $39.6 million; Ontario $62.8 million; Prairies $32.4 million; and British Columbia $34.4 million.

However, while the Central Provinces are the largest market in volume terms, the Atlantic region consumes more fish on a per capita basis. For example, families in St. John's and Halifax spend more on fisheries products than do families in any other major urban center in Canada (see Appendix I). Families in the Prairie Provinces spend the least on fisheries products. This low level of fish consumption, coupled with the anticipated rapid population growth and increasing incomes in the West are indicative of a market which appears ripe for increased exploitation.

The sales of fisheries products in Canada are also related to the level of family income and to the number of people in the family unit. Appendix I shows that families (including unattached individuals) with incomes less than $6000 per annum spend less than $50 per annum on fisheries products. Families in the $6000 to $20 000 income category generally spent from $50 to $60 per annum on fisheries products. Families with incomes over $20 000 spent more than $60 per annum on fisheries products. This appears to

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[1] *Urban family food expenditure - 1974.* Statistics Canada, catalogue #62-542; Ottawa, 1977.

imply that the consumption of fish products can be related to "levels of education". Hence, with the ever increasing level of consumer education and awareness regarding diet and health in general, it can be anticipated that the positive trend in the level of fish consumption will continue to be reinforced by this factor.

As would be expected, expenditures on fish, as with meat, poultry and other products increases with family size. However, it does not increase proportionately in that smaller families (2-3 persons) spend more per person than do larger families (4 persons and more). What remains inconclusive in the absence of further investigation is whether this statistical information implies that 1) smaller families consume more expensive fish products, or 2) a greater quantity of products, or 3) that larger families incur economies of scale in consuming fish products. The anticipated impact on per capita fish consumption resulting from changing family sizes is therefore difficult to determine.

b) Anticipated Trends in Per Capita Consumption

Fish consumption in Canada has been growing more noticably over the past half decade. Up until the mid 1980's, per capita consumption had been relatively static. Table 4 shows the per capita consumption of various forms of fisheries products in Canada from 1971 to 1977 with projections for 1981 and 1985. Total per capita consumption is expected to grow from 7.5 kg in 1977 to 10.4 kg per capita by 1985, amounting to an increase of approximately 4% per year over that period. The most rapid growth category will be frozen fillets and blocks with consumption increasing by approximately 10% per annum; by 1985 it is anticipated that people will be eating more than twice the per capita volumes consumed in this latter form during 1976.

Table 4. Per capita consumption of fish products in Canada[1] (kg, edible weight)

	Fresh & Frozen Round/Dressed	Fresh & Frozen Fillets/Blocks[2]	Shellfish	Cured	Canned	Total kg/cap	Total lbs/cap
1971	2.0	1.3	0.5	0.3	1.7	5.8	12.75
1972	1.8	1.5	0.5	0.3	2.1	6.2	13.64
1973	1.9	1.4	0.7	0.2	1.9	6.1	13.42
1974	1.7	1.8	0.8	0.2	2.0	6.5	14.30
1975	1.7	1.7	0.7	0.3	1.7	6.1	13.42
1976	1.5	2.1	1.1	0.2	1.9	6.9	15.18
1977	1.5	3.1	0.8	0.2	1.9	7.5	16.50
1981	1.6	3.7	1.1	0.3	2.0	8.7	19.14
1985	2.1	4.7	1.2	0.3	2.1	10.4	22.88

[1] *Apparent per capita food consumption in Canada, 1977.* Statistics Canada, catalogue # 32-226; Ottawa, 1979. The years 1981 and 1985 are projections.

[2] Most rapid growth is in fresh and frozen fillets/blocks at approximately 10% per annum from 1976 to 1985.

This projected growth trend is based firstly on continued increase in numbers of working women, and consequently an ever increasing demand for a variety of convenience foods at home (e.g. battered fish portions, frozen fish and chip dinners, etc). Secondly, there will be a continuing increase in food consumption away from home. This is the most rapidly growing dimension of the "food industry". The publication *Food in Canada* (April, 1979) estimates that approximately 35% of the food dollar is now spent away from home, with most of it being spent on meals. The resultant implications and opportunities in this area, particularly in high volume fast foods and intermediate restaurant trade are very significant respecting potential levels of fish consumption. Third, there will be an ever increasing health consciousness and level of interest in all aspects of nutrition, not only for the so termed "health foods", but increasingly for all food products and particularly those with low cholesterol/high protein qualities. In this regard, fish is a very competitive product.

c) Total Demand for Seafood in Canada 1981-1985

The preceding section outlined per capita consumption trends for the 1981-85 period. These figures, along with population projections are used below to estimate the total market demand for fish and fish products in Canada. The Canadian population is expected to increase significantly by 1985. Statistics Canada has made a number of different population projections to the year 2001. Table 5 is based on their projection number 2, in which migration

shifts away from central Canada to Alberta and British Columbia. Under this scenario the population of Canada will grow from 23.6 million in 1977 to 25.7 million by 1985.

Based on the preceding estimates, it is projected that total demand for fisheries products in Canada will grow rapidly. Table 6 indicates that by 1981 the potential total domestic demand could be 212 000 t, an increase of 19.9% over the 1977 tonnage of 177 000 t. The market could further be expected to grow to 267 000 t by 1985.

Table 5. Population projections ('000): Canada and regions[1]

	1977	1981	1985
Atlantic	2231.5	2306.5	2403.3
Quebec	6297.4	6412.1	6600.1
Ontario	8468.9	8782.4	9202.1
Prairies	3946.0	4207.4	4574.7
BC/YK/NWT	2603.0	2731.9	2944.0
Canada	23 546.8	24 440.9	25 724.3

Table 6. Anticipated growth in domestic seafood consumption

	1977	1981	1985
Per Capita Consumption (kg, edible weight)	7.5	8.7	10.4
Population (millions)	23.6	24.4	25.7
Domestic Market ('000 metric tons)	177.0	212.3	267.3
Percentage Increase		19.9%	25.9%

[1] *Population projections for Canada and regions, 1976 to 2001: Projection 2.* Statistics Canada, catalogue #91-520; Ottawa 1978.

There is little available information in terms of the empirical investigation of the demand for fish. However, some rudimentary calculations of the elasticity of demand for fish products are available. By elasticity of demand we mean the degree of responsiveness of the quantity of fish products demanded as a result of a change in variables such as price, income, the price of substitute goods, etc..

Although somewhat dated, Agriculture Canada estimated a fish demand function using various demand parameters within data covering the period 1957-71[1]. Statistical results indicated that the specification of the equation employed was at best moderately successful. Only about fifty percent of the variation in the quantity of fish consumed in the sample period could be explained by price, income and the price of meat.

This study showed an estimated direct price elasticity of demand for fish of -.7929. That is, if the price of fish increases by 10 percent, consumption would decrease by 8 percent. The estimated income elasticity of demand for fish was .3642. That is, should income increase by 10 percent, consumption would increase by approximately 4 percent. The estimated cross elasticity with meat was .2802 which, although not statistically significant at a high level, indicated that fish and meat are substitutes. That is, if the price of meat increased by 10 percent, fish consumption would increase by approximately 3 percent. These figures are collaborated in several other studies, however they remain

[1] Hassan, Zuhair A., and S.R. Johnson, *Consumer Demand for Major Foods in Canada*. Economics Branch Publication No. 76/2, Agriculture Canada, Ottawa, 1976.
See also: Hassan and Johnson, *Urban Food Consumption Patterns in Canada*. Economics Branch Publication No. 77/1, Agriculture Canada, Ottawa, 1977.

generalizations and do little in terms of understanding the responsiveness of specific items within the wide spectrum of fish products. As well, there have been significant structural developments and considerations subsequent to the above study based on data up to 1971. Such considerations which today may be important in explaining the changing domestic demand for fish include the increased levels of production arising from the extension of jurisdiction, domestic promotion, changing attitudes and tastes, foreign exchange and so on. Some of these factors will be examined in more detail below.

II. Traditional Role of Imported Fish Products

a) Source and Volume of Imported Fish Products

The U.S.A. is, by a wide margin, Canada's predominant source of supply for imported fish products. In 1977 it accounted for approximately 64% of the quantity and 54% of the value of total imports. Japan, ranked second, provides an additional 11% of the value of imports, and its significance is largely attributable to canned tuna products.

Tables 7 and 8 provide a more detailed breakdown of imports by country and product. Among the more noteworthy imported products consumed in 1977 in Canada's domestic market are the following: (1) $27 million in fresh or frozen lobster of which 50% was accounted for by Cuba in the form of rock lobster tails destined mainly for restaurant trade; (2) nearly $55 million in fresh or frozen shrimps and prawns of which 58% originated from the U.S.A. (i.e. Gulf of Mexico in particular) and reach the retail, food service, and institutional markets; (3) $23 million in canned tuna, of which Japan accounts for 78%, channelled mainly to the retail market; and (4) $17 million in canned shrimp near totally accounted for by the U.S.A.

b) Potential for Import Replacement

There is difficulty in determining what portion and which segments of Canada's fish product imports are potentially replaceable by domestic products. Although imports account for a

Table 7. Imports by principal countries of origin, 1977[1] (Quantities (Q) in metric tons, product weight Values (V) in thousand dollars)

	Q	V
Total Imports -- All areas	106 401	220 789
United States	68 798	120 544
United Kingdom	773	1 920
Belgium-Luxembourg	16	19
France	302	1 136
Fed. Rep. of Germany	3 709	3 690
Italy	215	384
Netherlands	794	2 833
Denmark	400	585
Norway	2 004	4 133
Portugal	1 874	3 412
Spain	1 023	2 946
Poland	250	514
Greece	210	168
Roumania	28	105
Sweden	12	47
Other European	3 123	295
Caribbean Area	4 037	23 198
Japan	8 130	25 099
Mexico	956	8 296
Hong Kong	938	4 158
Korea, South	1 120	3 367
Panama	2 783	2 746
Ivory Coast	1 275	1 459
All Others	3 631	9 735

[1] *Annual Statistical Review of Canadian Fisheries -- 1977*, Vol. 10, Dept. of Fisheries and Oceans, Ottawa, 1979.

Table 8. Imports by fish product group, 1977[1] (Quantities (Q) in metric tons, product weight Values (V) in thousand dollars)

	Q	V
Total Imports -- All groups	106 401	220 789
Fish and Shellfish, fresh or frozen	66 246	150 314
Cod	2 076	3 287
Haddock and Hake	3 014	2 974
Halibut	403	1 670
Salmon	3 578	6 615
Tuna	8 270	7 617
Trout	987	3 084
Seafish, n.e.s.	20 209	15 196
Freshwater fish, n.e.s.	2 201	2 037
Fish steaks, blocks, etc.	8 889	13 591
Crab	1 375	6 471
Lobster	2 982	27 240
Shrimp and Prawn	8 924	54 537
Oyster	490	1 072
Shellfish, n.e.s.	2 848	4 923
Cured Fish	1 735	3 713
Canned Fish & Shellfish	20 082	64 213
Anchovy	534	1 976
Herring	373	592
Salmon	2 651	3 471
Sardine	1 461	3 405
Tuna (all types canned)	7 138	23 332
Clam	2 063	3 902
Shrimp and Prawn	2 212	17 258
Oyster	1 287	4 681
Shellfish and products, n.e.s.	1 046	3 445
Fish and fish products, n.e.s.	1 317	2 151
Fish Oil	410	630
Miscellaneous Products	17 928	1 919

[1] *Annual Statistical Review of Canadian Fisheries -- 1977*, Vol. 10. Dept. of Fisheries and Oceans, Ottawa, 1979.

significant 40% of domestic food fish consumption (i.e. on a product weight basis in 1977), the potential for reducing this level appears somewhat limited and predetermined by several factors.

For example, there are numerous specialty product markets often appealing to a small ethnic trade (both at the retail and food service levels) which cannot be economically competed with because of variety, domestic market size, production techniques, and so on. Opportunities for import substitution appear in most instances limited. Secondly, there are structural differences between fisheries (e.g. by season) which often dictate the availability of certain fresh fish species for the food service and certain segments of the retail sector. Although there is potential for some substitution in this respect, it appears that structural differences will always exist thereby necessitating imports to shoulder domestic fishing seasons.

Also thirdly, Canadians enjoy relatively high levels of income and are renown for their propensity to travel. As a result, the food service sector (i.e. the "white tablecloth" trade in particular) appears ready to cater and capitalize on different tastes for seafood acquired by Canadians while travelling. Illustrative of this tie-in of travel patterns with tastes is the ever increasing appearance of Florida type species such as red snapper, pompano and kingfish on Toronto-Ottawa-Montreal restaurant menus. Such products which consumers often identify with another (presumably pleasurable) "time and place" are difficult to displace.

In fact, although this is a relatively small portion of the market, it could continue to grow.

In summary, although the above points are not intended as a complete listing of all considerations which limit import substitutability, they are indicative of the types of resistance faced in the marketplace. Two factors would appear to play a pre-eminent role in terms of potential for displacement. First, increasing the consciousness and awareness of Canadian consumers to Canadian products which could act as substitutes, for example, canned salmon versus canned tuna. In this instance, the two products appear highly substitutable by consumers and yet the market is divided in half between the two items with salmon of course, being the domestic and tuna the imported product. Second, it is believed that demand is generally price elastic (i.e. the rate of change in prices does affect demand). As standards of living continue to rise in other countries (a phenomena often coupled with exchange rates increasingly less favourable to Canadians), one can anticipate significant economic pressure on domestic consumers to substitute for imports.

c) Impact of Multilateral Trade Negotiations (MTN)

In July, 1979, the Government of Canada authorized signature, subject to ratification, of the 1979 GATT Tariff Protocol confirming the tariff outcome of the Multilateral Trade Negotiations.

Insofar as fish products are concerned, it should be

noted that these have traditionally been imported by Canada at a relatively low rate of duty. In fact, the actual "applied rate" on dutiable items was often "free". As can be seen in Appendix II, changes which have occurred in the import duty rates applied to fish products have been minimal.

It is anticipated that no significant adjustments will occur in the domestic marketplace as a result of the new rates. This will be primarily attributable to the marginal nature of the changed rates, as well as the often specific use (i.e. limited substitutability) and/or limited market for many of these items.

III. Domestic Market Potential for Canadian Fisheries Products

a) Profile of the Canadian Fishery

In 1978, Canada's primary fisheries sector landed 1358 thousand t of fish valued at $653 millions. The Atlantic coast accounted for 60% of the total landed value, the Pacific coast for 35%, and the inland fisheries for 5%. The fish processing industry produced from the landings a total of 662 thousand t of fish products valued at $1.5 billion. Of this, the Atlantic fisheries accounted for 78% of the volume and 66% of the value of fisheries products produced, while the Pacific fishery accounted for 16 and 30 percent respectively.

In 1978, there were an estimated 61 500 fishermen engaged in Canada's primary fisheries of which 4000 were in the Atlantic, 12 000 in the Pacific, and 8500 in the inland fisheries. These

fishermen operated from about 37 000 vessels worth an estimated value of $588 million. The average gross value of output per fisherman ranged from $3500 in the inland to $9600 in the Atlantic and $19 000 in the Pacific fisheries. Average net fishing incomes were estimated to be $2700, $5400 and $11 000 respectively.

In the secondary or processing sector of the industry, there are about 1100 plants in operation employing about 20 000 workers. Of these, fixed capital in plants and equipment are estimated to be around $512 million with an annual investment of $46 million in 1978. It is estimated that 61 percent of total capital stock is in Atlantic plants, while 32 percent is in Pacific plants and 6 percent is in inland plants. In 1976, the structure of the industry indicated that 27.7% of the number of plants had shipments (of goods of own manufacture) exceeding $50 000. These plants accounted for 78% of the total value of production.

b) Projected Landings: Canada's Own-Source Supply

A foregoing section outlined the anticipated size and make-up of the Canadian market for fisheries products in the 1981-85 period. The question arises as to how much of this market can be supplied from Canada's own fishery. This section outlines both current and projected harvests by species to be caught off Canada's shores (see Table 9).

Current resource forecasts for Canada's fisheries sector

Table 9. Canadian (1977) catch, and projected (1981 and 1985) total (ie. all countries) potential landings.[1]

(thousand metric tons, round weight)

	ATLANTIC COAST			PACIFIC COAST			FRESHWATER			TOTAL		
	1977	1981	1985	1977	1981	1985	1977	1981	1985	1977	1981	1985
FISH & SHELLFISH TOTAL	1003	2001	2198	205	400	429	47	42	42	1255	2443	2669
GROUNDFISH TOTAL	515	1120	1284	30	102	112	N.A.			545	1222	1396
Cod	238	530	660	10	16	20				248	546	680
Haddock	27	35	35	-	-	-				27	35	35
Redfish	67	134	138	8	18	23				75	152	161
Halibut	1	1	1	5	5	6				6	6	7
Turbot	23	30	30	2	2	2				25	32	32
Pollock	26	32	40	1	20	20				27	52	60
American Plaice	77	85	90	-	-	-				77	85	90
Witch	17	28	30	-	-	-				17	28	30
Yellowtail	13	20	23	-	-	-				13	20	23
Grenadier	Ø	35	35	-	-	-				Ø	35	35
Other flatfish	4	10	12	4	8	8				8	18	20
Hake	12	90	95	-	25	25				12	115	120
Other groundfish	10	90	95	Ø	8	9				10	98	103
PELAGIC & ESTUARIAL TOTAL	287	655	674	166	280	295	N.A.			453	935	969
Herring	229	240	270	97	200	200				326	440	470
Mackerel	23	98	122	-	-	-				23	98	122
Salmon	2	2	2	66	75	90				68	77	92
Capelin	14	270	230	-	-	-				14	270	230
Argentine	Ø	20	20	-	-	-				Ø	20	20
Others	19	25	30	3	5	5				22	30	35
MOLLUSCS & CRUSTACEANS	201	226	240	9	18	22	N.A.			210	244	262
Clams	3	4	5	2	4	5				5	8	10
Oysters	1	3	5	3	5	5				4	8	10
Scallops	117	55	55	-	-	-				117	55	55
Squid	39	100	100	-	-	2				39	100	102
Lobster	18	20	25	-	-	-				18	20	25
Crab	15	25	25	1	3	4				16	28	29
Shrimps and prawns	8	17	20	3	4	4				11	21	24
Other shellfish	Ø	2	5	Ø	2	2				Ø	4	7
FRESHWATER FISH TOTAL	N.A.			N.A.			47	42	42	47	42	42
Yellow pickerel							6	5	6	6	5	6
Pike							4	4	4	4	4	4
Sauger							2	2	1	2	2	1
Trout							1	1	1	1	1	1
Whitefish							9	8	8	9	8	8
Other freshwater fish							25	22	22	25	22	22

[1]SOURCE: Fisheries Research Branch, Resource Services Directorate, Dept. of Fisheries and Oceans, Ottawa, July, 1979.

project a growth in nominal catch levels from an overall 1977 catch level of 1255 thousand t, to an estimated potential total catch in excess of 2500 thousand t by 1985. However, this latter figure must be carefully considered. It includes the anticipated total amount of fish which will be available to all nations which will be fishing off Canada's East and West Coasts. Although there will be much room for increased Canadian catches, portions of this total will have to be devoted to a variety of other ends, the extent of which are not currently known. Examples of what has to be accounted for include: fulfilling in whole or a negotiated part of the 1972 Canada/France Agreement; stocks which either overlap or are beyond the 200-mile limit and are thereby not directly susceptible to Canadian control; the fishing activities of St. Pierre and Miquelon; the eventual outcome of Canada/USA boundary questions and so on. As well, a significant amount of the projected increased availability of fish are for species for which there is currently little economic interest on the part of domestic fishermen. Examples would include hake on both coasts, capelin, mackerel, grenadier, and so on. Yet another key variable, which cannot be overlooked, is the necessity of an adequate fishing fleet to harvest stock increases. It appears that movement toward increasing the portion of Canadian catch will have to be complemented with some change in the nature, composition and size of the current fleet.

The predicted doubling in resource availability reflects anticipated strong stock recoveries within several species

groups, as well as increased levels of exploitation of some non-traditional stocks. However, the above points indicate that the precise extent to which Canada will participate in these increased harvest levels is yet determined.

Attention is drawn to East Coast cod, where resource recovery coupled with improved Canadian "ice condition" fishing technology should provide significantly higher Canadian catch levels of "northern cod" (i.e. ICNAF areas 2J3KL). On the other hand, Canadian interest in such developments as the doubling of redfish and a fivefold increase in potential mackerel catches is much more tempered by the location (i.e. especially competition with foreign fishing vessels beyond 200 miles), harvesting economics and limited marketability (particularly mackerel) of certain stocks.

It is also anticipated that harvesting levels will double in Pacific Canada fisheries by 1985, although many of the caveats mentioned for Atlantic fisheries have analogous situations on the West Coast. Noteworthy in this context will be a three-fold increase in groundfish from 30 thousand t to 112 thousand t (which essentially includes Pacific hake and pollock), and a possible doubling in herring catches (97 thousand t to 200 thousand t). As well, salmon catches resulting in large part from the investment made in the Salmonid Enhancement Program, will potentially increase dramatically from 66 000 t in 1977 to 90 000 t by 1985. However, it should be noted that salmon catch figures vary markedly from year to year.

The overall contribution of the freshwater component of the fisheries sector is expected to decline marginally. In this instance, limiting factors would appear to include strong competition for the same resource by recreational fishermen, as well as the more rigid physical constraints of our freshwater systems.

Further detail of projections by species is provided in Table 9. As the reader can appreciate, the estimation of future catches is not an exact science. Not only are scientists subjected to the vagueries of highly sensitive ecosystems, they must often hold a number of real socioeconomic/political perogatives and variables as "constants" in their equations. The estimates, nevertheless, do provide general guidelines, limits, and an overall framework within which to work.

c) Detailed Market Potential by Species and Product Form

Cod

As the resource projections showed, cod is expected to be the most abundant species by 1985. The demand for cod will be mainly dependent on the amount of promotion and new products developed. Because of the anticipated volumes which will become available, it is believed that product prices will remain very competitive. Consumption of frozen fillets and blocks could increase to 27 800 t by 1985, more than double the 13 000 t of fillets and blocks consumed in 1977. While growth in individually quick frozen (i.q.f.) fillets can be good, the most rapid growth is projected for the processed breaded and battered products, particulary the latter. There may be a new market for some "fish in sauce" products

that are currently showing a degree of success in other western countries. Unlike other more consumer desirable species such as sole, cod products will be marketed most successfully on a basis of price competition. The fresh fish trade may show a resurgence over the next half decade. Cod, to compete in this market, will have to upgrade a quality image which has appeared to deteriorate over the past few years.

Haddock, Halibut and Flatfishes

The major concerns with these species will not be the inadequacy of demand but rather shortages of supply. The general world demand for these species in various product forms will cause domestic prices to remain relatively high if the consumer wishes to continue seeing these species in the Canadian marketplace. Halibut, previously a favourite in the fish and chip trade is now being displaced by less expensive species such as cod and pollock. Sole is the most preferred species by consumers; in this regard demand will continue strong and prices will remain relatively high. The predicted market growth for the consumption of these species is relatively low based on supply constraints and resultant increasing prices.

Redfish and Pollock

The Total Allowable Catches (TAC's) for these species are predicted to double by 1985 over 1977 levels. However, the catches will still be relatively small compared to the increases

anticipated for cod. The real competitive threat for cod will come from the vast Alaska pollock fishery reserves which the U.S. will probably attempt to develop by the middle 1980's.

Herring and Mackerel

While large increases are predicted for the TAC's of both mackerel and herring, the Canadian market for these products is relatively conservative. Growth in demand will occur as consumers become more familiar with these species, and will depend heavily on new attractive and tasty products being developed.

Salmon and Tuna

Growth in the domestic market for salmon will primarily be in the frozen steak form at the retail level. The market for canned salmon will remain stable or grow slightly depending on price rises relative to competing items. The large 1978 demand for frozen salmon by the Japanese bid up landed values to a level where it was feared the canning industry would require significant price increases to cover their increased raw material input costs. However, the 1979 Japanese market for frozen Canadian salmon appears to have subsided, and the domestic market for canned salmon has been retained.

Tuna will continue to be a significant import to the Canadian market. As the domestic market is near evenly divided between canned salmon and tuna, it is believed that consumers consider the products as near substitutes, and would show little reluctance

in switching should significant relative price changes occur.

Other Seafish

The general demand for all varieties of seafish will increase as Canadian consumers become more familiar with the eating of fish. This will primarily be achieved through increased promotion and consumer education. As well, the large ethnic population base in many urban centres will continue to demand a broad array of species in many product forms. A significant amount of product from species not found in Canadian waters will be imported in the future. But some potential also exists to replace imported items with more innovative products of Canadian origin, particularly at the retail trade level. For example squid products, cod tongues and lumpfish caviar are items and markets which can be supplied from Canadian sources. It becomes a question of creating an acceptable economic context (i.e. demand) for the production and introduction of such new products. This would probably mean coat-tailing the Canadian market on developing export markets for the same new products.

Freshwater Fish

Market growth for freshwater products can be consistent if supplies are further available in fresh and frozen fillets. The most significant factors which appear to limit growth in availability are the marginal increases in costs associated with increased production from lakes (although it appears that biological criteria would permit increased landings in many cases), transportation and other energy related costs which are associated with the exploitation of commercial fisheries in more often than not remote northern locations, and in many instances the apparent significance of

opportunity costs involved in landing "game" fish commercially which could otherwise be caught by sport fishermen. It is anticipated that significant amounts of trout will continue to be imported from Japan and the U.S. for both the retail and food service sectors.

Some damage appears to have been caused to the domestic market through consumer association of freshwater fish with the toxic pollutant scares of the mid 1970's (e.g. PCB's and mercury). It would appear that further potential for a much improved market exists should an effective consumer education campaign be conducted in this regard.

Lobster

The domestic demand for canned (hot and cold pack) lobster will show little growth over the next half decade. Prices are reaching a level where consumer resistance is being experienced at the retail level. Retailers cannot merchandise cans effectively because of pilferage of the high value product. The real potential for growth is in new lobster products such as frozen lobster in brine, vacuum-packed or "casket". The fresh or live market for lobster will grow as the food service industry expands, particularly in the "white tablecloth" seafood restaurants. Seasonality of supply will be the major constraint to the latter market. There will continue to be a significant import of frozen lobster tails from Cuba and other suppliers for the restaurant trade, mainly because of their competitive price. The market for lobster paste is forecast to grow only marginally, if at all.

Scallops

The domestic market for Canadian scallops will be extremely constrained by cutbacks in supply predicted for the early 1980's. If current consumption levels are maintained, a large volume will have to be imported. It is expected however that prices will rise to significantly dampen demand, and that consumers will turn to other less expensive alternative shellfish species.

Shrimp

Presently, the Canadian market for frozen and canned shrimp is supplied primarily by imports. Prices have risen to a level where consumers are beginning to show resistance. While there may be some growth in demand, there is very little potential for significant Canadian supplies.

Other Shellfish

There is a large market for other shellfish products in Canada including clams, mussels and oysters. There could be considerable expansion in the market for these products through promotion and product development and with some guarantees of supply continuity. The aquaculture development projects in the Maritimes will have ready markets if they meet these criteria. It is likely that a large portion of this market will continue to be supplied through imports. Indicative of the market and the lengths gone to meet and satisfy perceived consumer demand for selected high quality products in this regard, is a 1979-80 pilot undertaking to have live/fresh oysters shipped by air from France on a continuing basis for use in the Montreal white tablecloth trade.

Table 10. Domestic market potential for Canadian fish products (metric tons, product weight)

	1977		1981			1985		
	Total Market	Imports	Potential Market	Imports	Canadian Supply Potential	Potential Market	Imports	Canadian Supply Potential
SEAFISH								
1. Cod								
round/dressed	4 303	2 076	9 800		9 800	14 900		14 900
fillets	8 065	-	13 700	-	13 700	18 500	-	18 500
blocks	4 845	-	6 800	-	6 800	9 300	-	9 300
smoked	346	-	500	-	500	500	-	500
2. Haddock								
round/dressed	4 232	3 014	3 200	1 000	2 200	5 100	3 000	2 100
fillets	2 482	-	3 400	-	3 400	4 100	-	4 100
blocks	2 018	-	2 200	-	2 200	2 300	-	2 300
smoked	20	-	-	-		-	-	
3. Redfish								
round/dressed	681	-	1 000	-	1 000	2 300		2 300
fillets	6 864	-	8 800	-	8 800	11 800	-	11 800
blocks	441	-	500	-	500	500	-	500
4. Halibut								
round/dressed	2 951	403	3 000	500	2 500	3 000	500	2 500
5. Pollock, Hake								
round/dressed	*	-	2 700	-	2 700	3 300	-	3 300
fillets	4 800	-	2 000	-	2 000	3 600	-	3 600
blocks	7 076	-	8 800	-	8 800	10 600	-	10 600
cured	-	-	-	-	-	300	-	300
6. Flatfish								
round/dressed	-	-	1 000	-	1 000	2 300	-	2 300
fillets	7 296	-	9 300	-	9 300	11 300	-	11 300
blocks	832	-	700	-	700	1 000	-	1 000

* included with Haddock in 1977 Statistics.

(continued on next page)

Table 10. Domestic market potential for Canadian fish products (metric tons, product weight)

SEAFISH (cont'd)	1977 Total Market	1977 Imports	1981 Potential Market	1981 Imports	1981 Canadian Supply Potential	1985 Potential Market	1985 Imports	1985 Canadian Supply Potential
7. Other Groundfish								
fillets	1 624	-	-	-	-	-	-	-
blocks	356	-	-	-	-	-	-	-
canned	227	-	200	-	200	300		300
8. Herring								
round/dressed	80	-	-	-	-	-	-	-
blocks	54	-	-	-	-	-	-	-
cured	3 871	-	5 100	-	5 100	6 900	-	6 900
canned	2 213	1 834	2 400	-	2 400	2 600	-	2 600
9. Mackerel								
round/dressed	3 505	-	5 400	-	5 400	7 700		7 700
fillets	-	-	-	-	-	300	-	300
pickled	557	-	500	-	500	800	-	800
10. Salmon								
round/dressed	7 407	3 578	8 500	-	8 500	12 300	-	12 300
cured (smoked)	300	-	200	-	200	300	-	300
canned	16 304	2 651	18 100	1 000	17 100	20 500	2 500	18 000
11. Tuna								
round/dressed	8 304	8 270	8 000	7 500	500	9 000	8 500	500
canned	13 569	7 138	15 000	7 500	7 500	17 000	8 500	8 500
12. Other Seafish								
round/dressed	18 936	20 209	23 200	20 000	3 200	29 600	20 000	9 600
fillets	16 351	4 444	21 000	5 000	16 000	27 200	5 000	22 200
blocks	4 970	4 445	5 900	2 000	3 900	8 700	2 000	6 700
pickled	1 260	75	4 900	-	4 900	6 200	-	6 200
canned	2 655	1 851	2 100	1 000	1 100	2 000	1 000	1 000
smoked	875	266	1 000	-	1 000	1 000	-	1 000

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Table 10. Domestic market potential for Canadian fish products (metric tons, product weight)

	1977		1981			1985		
	Total Market	Imports	Potential Market	Imports	Canadian Supply Potential	Potential Market	Imports	Canadian Supply Potential
FRESHWATER FISH								
13. Whitefish								
round/dressed	2 398	-	2 500	-	2 500	2 500	-	2 500
fillets, blocks	801	-	1 000	-	1 000	1 000	-	1 000
14. Pike								
round/dressed	476	-	500	-	500	500	-	500
fillets, blocks	628	-	1 000	-	"	1 000	-	1 000
15. Pickerel (yellow)								
round/dressed	1 659	-	2 000	-	2 000	2 000	-	2 000
fillets, blocks	675	-	1 000	-	1 000	1 000	-	1 000
16. Freshwater smelt								
round/dressed	5 156	-	5 000	-	5 000	5 000	-	7 000
17. Other Freshwater								
round/dressed	4 543	3 188	11 500	10 000	1 500	14 400	12 400	2 000
fillets, blocks	1 728	-	2 900	-	2 900	2 100	-	2 100
SHELLFISH								
18. Squid	-	-	-	"	"	100	-	100
19. Lobster								
in shell	4 378	2 982	4 900	3 000	1 900	5 700	3 000	1 700
canned	1 760	-	2 000	-	2 000	2 100	-	2 100
20. Crab								
in shell	939	1 375						
meat	1 780		2 400	1 000	1 400	2 800	1 400	1 400
canned	390	206	500	200	300	800	400	400
21. Scallops								
shucked meat	3859	-	5 100	2 000	3 100	5 900	2 500	3 400

(continued on next page)

Table 10. Domestic market potential for Canadian fish products (metric tons, product weight)

	1977		1981			1985		
	Total Market	Imports	Potential Market	Imports	Canadian Supply Potential	Potential Market	Imports	Canadian Supply Potential
SHELLFISH (cont'd)								
22. Shrimp								
in shell	323	8 924						
meat	8 588		11 200	9 000	2 200	12 900	9 000	3 900
canned	2 414	2 212	3 200	3 000	200	3 900	3 000	900
23. Other Shellfish								
fresh, frozen	12 174	3 338	5 900	1 000	4 900	7 200	1 000	6 200
canned	4 801	4 190	5 900	4 000	1 900	7 200	4 000	3 200

IV. Determinants of Market Growth

a) Price Competition

Price is, of course, a primary consideration among the many factors that will lead to changes in the level of fish consumption. Traditional economic theory dictates that, for most goods, as product prices decrease, more is consumed. As price increases, consumers cut back purchases and presumably buy alternative goods. Although there has been little empirical work done on "elasticities" or "cross elasticities" for fish products (i.e. the rate of change in demand for a good as a result of the rate of change in prices, incomes, etc.) there appears to be a relationship between relative prices of beef, pork, poultry, and fish in the Canadian market. However, the price sensitivity of fish consumption is probably less than might be expected, despite Agriculture Canada's crude quantitative estimates cited on page 9 of this report. Table 11 below shows that the increase in the general price of fish 1972-1978 was more rapid than for beef, poultry or pork. Yet, over the same period the consumption of fish has been increasing faster than consumption of these other commodities (see Table 3).

Table 11. Consumer price index: 1971 = 100

	Fish	Beef	Poultry	Pork
January 1972	107	107	105	104
January 1973	127	117	122	134
January 1974	170	143	166	163
January 1975	177	142	163	168
January 1976	193	141	201	219
January 1977	207	123	185	190
January 1978	241	163	201	219

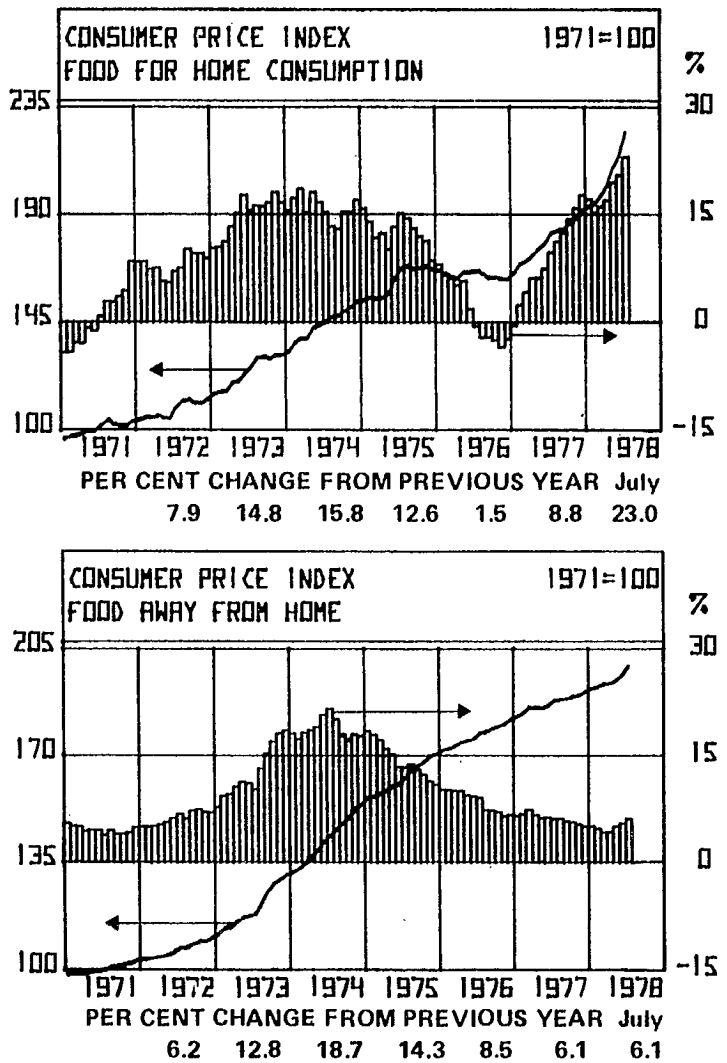
The recent rapid increases in the price of beef further substantiates this argument. Many chain stores have registered declines in retail beef sales of 20-30% due to higher prices, but they note that the increased sales of pork, poultry and fish has only been marginal. The retailers maintain that consumers are not buying these other substitutes but instead are turning to the food service sector, where prices have not been increasing as rapidly (see Figure 1). More people are eating at fast food chains as home food prices increase. In turn this may increase the demand for fish products in the food service sector. Recent attempts have been made by retail chains to introduce "generic" products to become more price competitive. In their fish marketing, this has led to the use of comminuted (ground up) products and to some extent down-grading the quality of fish products. Cod fish sticks cannot compete in terms of price with a comminuted stick.

When analysed in more detail on a species or product basis, prices can be an important factor in influencing volumes sold. Certain commodities will sell primarily on a price competitive basis and cod could be one. If the large catches predicted do materialize, cod supplies will be large and price would probably be driven down to clear markets. At the other end of the spectrum, it has been recognized that as some items become too expensive, consumers cut back. Canned salmon appears to have reached an interim price plateau for which the consumer will require a "breathing spell" to adjust. It appears that, in

the case of canned salmon, the money increases in prices impacted more quickly and directly on consumers, and that consumers' understanding of the real and relative prices for the product (i.e. with inflation factors removed and a look at substitute product prices such as tuna, etc) are minimal. The demand for "luxury" products such as canned lobster and crab appear to be price inelastic (insensitive) over a wide range, with substantial consumer resistance occurring only at high price levels.

The price situation is not solely dependent on domestic supply and demand factors. Recently, there has been a strong demand for certain products in many of Canada's export markets because of increased incomes in these countries, shortages of supplies, foreign exchange rates, the Multilateral Trade Negotiations (MTN), and other factors. This in turn increases the demand for and prices of Canadian supplies. Canadian consumers have to pay competitive prices or loose out to export markets. Examples include frozen salmon going to Japan, freshwater fish to Poland, and herring to the European Economic Community (EEC). However, some processors have maintained a longer term view of export activities by not being carried away with the significant annual price fluctuations from market to market. Rather, they ensure as much as possible the satisfaction of those more traditional and stable markets at home and abroad. For example, despite the escalating price for frozen salmon on the Japanese market in 1978, national brand firms protected their canning lines and Canadian market.

Figure I. Consumer price index: food for home consumption and food away from home.



Source: Statistics Canada, Consumer Prices and Price Indexes

b) Distribution

In Canada there are a number of functions performed in the distribution process for fish products. The chart below indicates these functions in a general way. The first category is products available for sale including those domestically produced and imported. The second category is composed of brokers, dealers and traders who sell on behalf of processors, or who buy and sell domestic and imported seafood products. The next category is made up of wholesalers/distributors who sell to the fourth category, that is, the retail and food service sector. These categories provide a broad view of the distribution system. There are many variations in which some steps are combined and others are omitted entirely.

- Canadian produced
- Imported products

→ - Brokers, - Traders, - Dealers → - Wholesalers, - Distributors → - Retailers, - Food service → Consumers

In Canada there are many hundred processors, but the largest 20 companies account for over 70% of the value of production. While much of this production is destined for export markets, primarily the U.S., most companies supply the domestic market as well.

There are a large number of brokers, traders and dealers in the market place handling a large variety of species and product forms, some of which they import. These firms range from large well established companies with offices in major Canadian centres to many smaller operations which service specific clients and markets.

Fishermen → Assemblers, Buyer → Agents, Brokers → Primary Processors, Secondary Processors → consumers

There are also a number of "gypsies" who enter and leave the business depending on supplies, market conditions and other more opportunistic motives.

The wholesalers/distributors are set up to physically distribute the product to clients. There are many firms in this group usually specializing in servicing either the retail or food service sectors or both. They often supply other products in addition to fish.

The retail and food service industries deal directly with the final consumers of fish. Over the past decade the food service industry has grown rapidly and this trend is expected to continue. Many major retail chains regard the food service sector as a more competitive threat than competition among themselves.

The growing consumption of fish products in the food service category has primarily come from the fast food outlets (i.e. Treacher's, H. Salt, McDonald's, Burger King). These outlets demand primarily frozen fillets according to strict product specifications on quality, size, and allowable additives. Traditionally there had been an emphasis on halibut in the fish and chip trade but price increases have led to the use of more economical species such as pollock and cod.

There are some predictions that the rapid expansion in the fast food sector will slow over the next half decade and the major growth for fish products will be in the middle to expensive

restaurant trade. These restaurants are looking for a wide array of species and product forms rather than the common "battered" variety fillets used in fast food stores. Many specialty products will have to be imported, for example trout from the United States, shrimp from Mexico, and lobster tails from Cuba. It is unlikely that significantly increased volumes of cod can be absorbed in this sector. There could, however, be some increased potential for various Canadian shellfish products including lobster and oysters.

Other elements of the food service sector such as institutions (hospitals, schools, etc.) may have some growth potential, but it is a very price sensitive industry looking for good nutritional value for its money. Generally, the more conventional species and product forms are consumed. This will not be a rapidly growing component of the industry, however if certain species like cod are in abundance and prices relatively low, significant sales could ensue.

The retailing of fish products is carried out primarily in grocery stores dominated by the large chains (e.g. Loblaws, Dominion, Steinbergs, Safeway), and an increasing number of specialty fish stores, usually individually/owner operated in major urban centres.

Grocery retailers in Canada have not traditionally merchandized fisheries products as effectively as meat and poultry items. Before 1976, sales of fresh fish were static. Fish

continues to be included within the meat counter, and store personnel are more familiar with the merchandizing of meat products.

However recently, some chains are beginning to show more interest in fresh fish. Steinbergs has introduced "Fish Boutiques" in a number of Montreal stores and, with good point-of-sale promotion, are seeing rapid increases in sales. There is a higher markup on fish products yielding better profit margins. (However, fish sales only amount to a small percentage of meat sales - 15%). As well, retailers are looking for alternative products to expensive beef. The major constraint to increasing sales of fresh fish is continuity of supply. Many Canadian species are available only in certain seasons and often not in the quantities required.

The major growth of fish product sales in retail grocery stores has been and will continue to be in the frozen product categories. Consumers are looking for more convenient as well as nutritious foods. Much of the growth in recent years has been in the breaded and battered categories with the latter becoming more predominant. Frozen fillets, blocks and particularly iqf's will continue to be strong sellers. New products will account for much of the increased growth over the next 5-6 years. It is expected that products successfully introduced to other markets (boil-in-bag, fish-in-sauces show promising results in the U.K.) based on their convenience, variety, and nutritional value, will also be introduced to the Canadian market in the near future, leading to further increases in consumption.

Specialty fish retail stores generally deal in a wide array of fresh, frozen, canned, smoked, and pickled fish products both domestically obtained and imported. Many of these stores in large urban centres cater to various ethnic populations supplying various species and products not normally eaten by the greater Canadian population. However, these stores are finding a general increase in business due to the rising consciousness of the Canadian consumer in general. There will be good potential for increased sales of traditional Canadian species through these outlets.

c) Quality

Canadian fisheries products in export markets have a poor reputation for quality. Other exporting countries such as Iceland and Norway can claim a premium for their superior quality groundfish fillets and blocks. The same complaints about quality are not apparent in the domestic market with the possible exception of worm infested cod. A number of reasons have been given for this. Canadians in the past may not have been as discerning as other buyers. Companies may have better quality products on the domestic market. Products are more highly processed, and claims have been made that once fish is breaded or battered the quality, unless it is very poor, is often hard to determine by the average consumer.

There has been some improvement in recent years. The food service industry, particularly fast food chains like McDonald's have demanded rigid quality specifications from their suppliers.

New product forms, such as iqf's have improved home preparation in that the consumer only has to thaw as many fillets as he/she wants to use. Consumers are becoming more demanding as they become more familiar with good quality fish served in restaurants. As well, there has been a growing trend to frozen rather than fresh products and the quality has improved correspondingly. The frozen product is being treated better at the retail level with less refreezing and freezer burn.

d) Product Development

The array of fisheries products available to the consumer will also be a significant factor in increasing consumption. Traditionally, Canadian consumers have been conservative fish eaters preferring the more bland species, usually the filleted form. Fish was eaten once a week only to meet certain religious guidelines. But this pattern appears to be changing as the per capita consumption figures indicate over the past few years (i.e. from the 6 kg level in the early 1970's to approximately 7.7 kg in 1978). A new generation of fish eaters, with a different perspective, is now looking for fish as a desirable consumer product. Table 12 based on a survey in 1976 shows that 45% of consumers are eating fish once a week or more.

Table 12. Frequency of fish consumption[1]

	% of those who use
More than once a week	15%
Once a week	30%
1-3 times per month	44%
less often	12%

[1] North Atlantic Seafood Association, presentation to major Canadian Retail Grocery chains during 1978.

Consumers, particularly in urban centres, are now eating a wider array of products and species. This is in part due to the larger ethnic populations. An increased general consciousness about nutrition is also an important factor. As well, the increased number of meals eaten away from home has familiarized consumers with more fish products which are subsequently tried at home. Much more promotional material and recipes are now available to assist consumers with food preparation.

In future, the Canadian consumer will continue to look for new convenience foods that are quickly prepared, "not messy", nutritious, tasty, visually attractive and price competitive. Canadian fish processors are becoming more aggressive in the area of product development. Many new products will be introduced in the domestic market over the next few years similar to those recently introduced in other countries. These would include fillets in cheese sauces, smoked fillets in poaches, new battered products, and some new canned products. Recent success of some Canadian firms with the frozen in brine lobster has indicated the untapped market potential that awaits innovative product development.

As well as new products, the fishing industry should be introducing some exciting packaging concepts. The two piece can has entered the Canadian fish products market (Oceanmaid tuna). Serious consideration is being given to new processing/packaging systems such as the retortable pouch (crab meat, lobster, salmon steaks including sauces) and aseptically-processed products.

Packaging will also be developed to meet the demands of new consumer technologies such as microwave and convection ovens. It has been projected that by 1985 annual sales of microwaves will be 4.26 million ovens, up 150% from 1977 sales[1].

e) Continuity of Supply

Continuity of supply is an important consideration for retail grocery stores. Their stated policy is to assure customers products that will be continuously available. Some chain stores have re-opened fresh fish counters or boutiques and realized a rapid growth in demand for products. The constraint is supply. Certain Canadian species are only available seasonally, and even then they are not always available in the quantities required to service large retail chain operations.

It is important for processors to maintain supply levels to the domestic market for all fisheries product forms. In recent years there have been large exports of many products which left domestic markets stranded. The complaints most often referred to in this regard concerned the lack of freshwater fish species. However, there was also concern that Canadian processors were primarily concerned with export markets and only secondarily with the Canadian market thereby shorting the domestic buyers when more lucrative export markets become available for certain products. This problem is being corrected by many of the larger companies who realize that a long run marketing strategy must be based on continuity of supply to traditional markets whenever possible.

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[1] *Food in Canada*, April 1979, p. 90.

The problem of supply continuity can also be alleviated through "substitutability" among species. The increased awareness among consumers about different species means that they will buy some species in place of another in certain product forms and at differing times of the year. When the prices of fish in short supply rise, consumers can switch to more available or price competitive species. As well, brokers and dealers in general are becoming better equipped to supply the market with imported products from around the world when domestic supplies are short.

f) Promotion/Merchandising

Promotion and merchandizing of fish in Canada is considered to be the key to increasing the domestic consumption of fisheries products. The image of fish has been changing over the past few years, and much more needs to be done to promote its positive attributes as a fun food ("eat oysters love longer"), as a low calorie diet food ("disco diet"), as a nutritious health food, and more generally as a good value for the consumers dollar (more edible weight). There has been more promotion of fish in recent years by individual firms, the industry as a whole (through associations) and by governments.

Some of the larger individual processors have been promoting their own individual brands of fisheries products in a multimedia approach, and this advertising has not only improved sales of their own products but has also increased the interest of consumers in fisheries products in general. Many processors

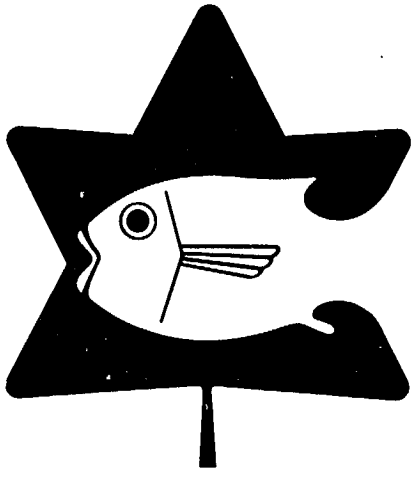
also offer a merchandizing program to large retail customers in the form of percentage discounts on large volume sales, cost sharing on media campaigns, providing point of sale material, and so on.

The industry as a whole has been jointly promoting fish consumption. For instance the North Atlantic Seafood Association (NASA) was formed to promote the consumption of North Atlantic fish in North America. The organization was only recently formed and is made up of groundfish producers and processors and the Governments of four nations -- Canada, Denmark, Iceland and Norway. The major activities of NASA have been recipe and information services, media campaigns and market testing and research. On the Pacific Coast, the Fisheries Association of British Columbia (made up of a number of B.C. processors) is also promoting fish products through recipes, information, and media services.

Governments, both federal and provincial, have been promoting fish consumption through various methods for a number of years. The most recent initiative is the Canada Fish and Seafood Month campaign which was undertaken by the Department of Fisheries and Oceans with the industry (particularly at the retail level). A principal objective of the program is to increase the per capita fish consumption in Canada. A preliminary evaluation of the program estimated that sales of frozen fish and seafood in October-November 1978 were up nearly 15% over the same period in 1977. It was estimated that total Canadian consumption had increased by 13.6 million kg, and this increase was

attributable in large part to the Fish and Seafood Month promotional campaign held during the month of November.

The program also attempts to create an increased awareness of fish products among consumers. Recipe booklets are widely distributed. Various forms of media advertisements are used, trade and media people are informed in detail of the program. As well a new symbol was developed in the 1979 campaign to identify and promote "generically" all Canadian fish.



Suggestions for improving the program in future included the need for more lead time for implementation, changing the month from November to another month perhaps after the Christmas/New Year period and increased provincial participation.

Besides promotion, a better job of merchandizing is also required. The retail food chains have traditionally emphasized their meat trade. Very little shelf or counter space is provided for fish. Quality, in many cases, is not closely attended to i.e. frozen fish thaws and refreezes with the defrost cycle of the freezer display units, or it is not disposed of when it deteriorates.

However, there are signs of positive change. Retailers are recognizing, as a result of the work of NASA' that frozen fish and seafood products yield better profit margins (approximately 30% as compared to less than 15% on beef). Some stores are reinstalling fresh fish counters and "boutiques".

NASA representatives made presentations to the major retail food chains across Canada during 1978 to encourage more effective merchandizing of fish products in the stores. In this context they made the following proposals:

(i) Promote a minimum of 4 fish items/week,

(ii) Promote one block buster fish item/month,

(iii) Promote a special Seafood Week in September/October, and one during Lent.

The essence of NASA's message was that better promotion and merchandizing will increase seafood consumption dramatically.

V. Summary and Conclusions

Over the past few years, the annual consumption of fisheries products in Canada is beginning to approach 8 kg per person. In 1978, this amounted to a total domestic consumption of 175 000 t (edible weight).

Per capita consumption of fish products is expected to increase to nearly 10.5 kg by 1985. This trend, combined with an increase in population implies a total potential demand in 1985 of 267 000 t (edible weight).

Nearly 40% of fish products presently consumed in Canada are imported, which is something of an anomaly given Canada's vast fisheries resources. There exists some potential for substituting imports with Canadian products (e.g. canned salmon for tuna). Together, the growth in demand anticipated for the next half decade, along with possibilities for import replacement indicates that there will be a significant opportunity for increased sales of Canadian fish products in the domestic market.

The most rapid growth in consumption will be for fresh and frozen fish in dressed, fillet and block form. Growth in cured and canned categories will be much slower. In terms of species, cod shows the greatest potential for growth based primarily on price competition with species in short supply (haddock, halibut and sole) and other competing goods such as beef, pork and poultry. Some potential exists for more herring and mackerel consumption as people become more familiar

with fish generally, and are willing to experiment. Growth will be heavily dependent on product development, promotion, and merchandising.

With the exception of scallops, overall supplies of shellfish will increase and domestic demand will increase correspondingly. Freshwater trout will increasingly be a restaurant item, particularly in the white tablecloth trade, thereby necessitating the need for increased imports to meet demand. Development opportunities in Canada seem apparent in this respect.

The Canadian market for canned salmon will grow moderately, while the market for frozen salmon is forecast to increase rapidly. With many of the above products, a major constraint to Canadian market expansion will be growing demand in export markets which could further push up prices, thus dampening domestic demand.

Overall, it is not believed that price will be the most important determinant in increasing market share for fish products. Surprisingly, the past six years have seen fish prices increase faster than competing meat and poultry, and yet sales of fish have increased more rapidly than the latter. The substitutability among these goods may be weaker than originally thought. Recent evidence indicates that high beef prices have encouraged people to eat out more often rather than switch to other home prepared alternatives.

The food service sector demand for fish products will continue to expand. There will be more rapid percentage growth

in the "white table cloth" restaurant trade rather than in the fast food sector. As a result, there will be a demand for a larger array of fish and seafood products. Battered fillets will continue to enjoy a growing demand. Quality and product standards are improving to meet the rigid specifications imposed by the food service sector.

Retail sales of fish are also expected to grow rapidly over the next half decade. While some of this may be attributable to broadened experience from eating out more often, the consumer is also becoming more conscious of nutritional aspects, the good value for money, the ease of preparation, and dietary aspects of fish products.

Retail chains are beginning to merchandise fresh and frozen fish products more effectively through fresh fish "boutiques" and counters. They are becoming more aware of the higher profit margins in fish products. Over and above certain seasonal shortages, continuity of supply is a problem as processors often "short" the domestic market to take advantage of more lucrative immediate export markets.

The real key to increasing sales in the domestic market is product development, promotion, and merchandising. With agressive action in these areas, consumption could reach as high as 12 kg per person by 1985, rather than 10.4 kg predicted.

Consumers are buying more convenient, time saving, "mess-less" food products. New fish products and packaging should be developed to exploit this trend (i.e. retortable pouches, fish in sauces, canned flaked mackerel) as well as to meet the demands of new technology

(i.e. microwave and convection home ovens).

In terms of promotion, the larger individual processing companies have been advertising their own brands through a multi-media approach. The industry, as a whole, has been promoting fish products through the North Atlantic Seafood Association (NASA). This Association has effectively used media campaigns, recipe and information programs and market testing. Similar activities are carried out by a promotion committee formulated under the auspices of the Fisheries Association of B.C. However, the budgets for industry-wide promotions are extremely small when contrasted to other industries.

Government assistance in promoting fish products has primarily focused on Canada Fish and Seafood Month, carried out jointly with industry. In 1978, the campaign included T.V. commercials, magazine ads, point of sale material (booklets, posters). Retail stores had "specials", and generally improved their merchandising approach. A similar campaign was carried out in 1979.

These government/industry campaigns appear to have had a very good impact, but enthusiasm dwindles once the initial thrust is over. A sustained and aggressive effort by government and industry is required over the long run to fully exploit the potential of the Canadian market for fish products.

What will appear evident to the reader of this particular report is that it only generally identifies and discusses the many issues and concerns inherent in the Canadian market. For governments,

with their interests in the successful development of the fisheries sector as well as responsibilities and interests regarding the consumer, much remains to be done in terms of more detailed analysis. For example, candidates for further research are increased information and understanding of prices at the retail level and of consumer attitudes, behaviour and consumption patterns.

APPENDIX I

Average weekly family expenditures on fisheries products by major Canadian cities, family incomes, and family sizes.

Table A. Average weekly family expenditures on fisheries products in eight major Canadian cities, 1976(all families and unattached individuals)[1]

	All	St.John's	Halifax	Montreal	Ottawa	Toronto	Winnipeg	Edmonton	Vancouver
Cod, fresh, frozen, smoked	.08	.39	.14	.06	.04	.07	.02	.05	.16
Halibut, fresh, frozen	.02	.03	.03	.01	-	-	-	-	.10
Salmon, fresh, frozen, smoked	.07	.19	.07	.06	.08	.04	.05	.04	.14
Other fish, fresh, frozen, smoked	.31	.39	.36	.34	.25	.37	.40	.13	.16
Seafood, fresh, frozen, smoked	.10	.01	.21	.12	.11	.06	.09	.05	.12
Canned salmon	.13	.05	.09	.11	.21	.14	.15	.15	.12
Canned tuna	.15	.14	.15	.11	.16	.19	.08	.16	.15
Other canned fish	.05	.06	.04	.04	.05	.06	.05	.05	.03
Canned seafood	.06	.05	.10	.07	.07	.04	.07	.09	.06
Frozen fish dinners	.09	.12	.10	.08	.10	.10	.08	.10	.08
Unspecified fish	.08	.01	.02	.17	.11	.05	.03	.01	.01
Weekly Total ($)	1.14	1.44	1.31	1.17	1.18	1.12	1.02	.83	1.13
Annual Total ($)	59.28	74.88	68.12	60.84	61.36	58.24	53.04	43.16	58.76

[1] *Urban family food expenditures, 1976*. Statistics Canada, Catalogue #62-545; Ottawa, 1979.

Table B. Average weekly and annual expenditures on fisheries products by family income, 1976 (all families and unattached individuals).[1]

	All Classes	under $4000	$4000-$4999	$5000-$5999	$6000-$7999	$8000-$9999	10 000-11 999	12 000-13 999	14 000-16 999	17 000-19 999	20 000-24 999	25 000 and over
Cod, fresh, frozen, smoked	.08	.04	.03	.06	.09	.07	.09	.11	.04	.10	.09	.08
Halibut, fresh, frozen	.02	-	-	-	-	.02	-	-	.01	.01	.01	-
Salmon, fresh, frozen, smoked	.07	.05	.03	.08	.07	.03	.04	.04	.08	.08	.06	.09
Other fish, fresh, frozen, smoked	.31	.23	.28	.28	.38	.23	.24	.36	.24	.26	.33	.44
Seafood, fresh, frozen, smoked	.10	.02	.02	-	.02	.01	.08	.10	.08	.04	.19	.18
Canned salmon	.13	.11	.18	.06	.10	.11	.09	.09	.15	.14	.14	.16
Canned tuna	.15	.06	.09	.08	.09	.15	.10	.14	.15	.14	.17	.21
Other canned fish	.05	.05	.07	.04	.03	.02	.03	.06	.07	.04	.05	.05
Canned seafood	.06	.02	.02	.04	.05	.10	.04	.04	.05	.05	.10	.10
Frozen fish dinners	.09	.09	.06	.05	.08	.09	.05	.12	.11	.12	.06	.10
Unspecified fish	.08	.01	.06	.07	.06	.16	.07	.10	.06	.06	.10	.07
Total Weekly ($)	1.14	.68	.84	.76	.97	.99	.83	1.15	1.04	1.04	1.30	1.48
Total Annual ($)	59.28	35.36	43.68	39.52	50.44	51.48	43.16	59.80	54.08	54.08	67.60	76.96
Annual $ Category		Under $50			Generally $50-$60 per year						Over $60	

[1] *Ibid.*

Table C. Average weekly expenditure on fisheries products by family size, 1976 (all families and unattached individuals).[1]

	All classes	1 person	2 persons	3 persons	4 persons	5 persons	6 persons	7 persons or more
Cod, fresh, frozen, smoked	.08	.03	.07	.09	.08	.13	.20	.07
Halibut, fresh, frozen	.02	-	.06	.01	-	-	-	-
Salmon, fresh, frozen, smoked	.07	.05	.06	.06	.09	.10	.05	.08
Other fish, fresh, frozen, smoked	.31	.14	.34	.27	.37	.32	.50	.71
Seafood, fresh, frozen, smoked	.10	.06	.08	.09	.10	.15	.29	.03
Canned salmon	.13	.09	.13	.13	.15	.16	.13	.13
Canned tuna	.15	.04	.12	.16	.18	.22	.33	.31
Other canned fish	.05	.05	.04	.05	.04	.08	.03	.14
Canned seafood	.06	.04	.06	.07	.08	.05	.14	.07
Frozen fish dinners	.09	.05	.08	.09	.11	.12	.16	.17
Unspecified fish	.08	.01	.06	.06	.08	.13	.04	.56
Total Weekly $	1.14	.56	1.10	1.08	1.28	1.46	1.87	2.27
Total Annual $ per Family	59.28	29.12	57.20	56.16	66.56	75.92	97.24	118.04
Annual $ per person in Family		29.12	28.60	18.72	16.64	15.18	16.20	16.86

[1] *Ibid.*

APPENDIX II

Canadian MTN tariff concessions schedule: fisheries products.

CANADIAN TARIFF CONCESSIONS SCHEDULE--FISH PRODUCTS*

*source: Tariff concessions agreed by Canada in the Multilateral Trade Negotiations under the General Agreement on Tariffs and Trade. Dept. of Finance, June 1979, Ottawa, Canada.

CANADIAN TARIFF CONCESSIONS SCHEDULE – INTRODUCTORY NOTES

1. This is a schedule of concessions made under the Most-Favoured-Nation Tariff by Canada in the Multilateral Trade Negotiations (MTN). The rates of duty in the column entitled "Base Rate of Duty" are, in most cases, the rates which Canada "bound" in previous GATT negotiations. Canada is free to apply rates lower than its "bound" rates. Where the present applied rates of duty are lower than the "bound" rates this is indicated in brackets in the base rate column. The rates in the column entitled "Concession Rate of Duty" are the new "bound" rates.

2. The rates of duty set out in the "concession rate" column have been agreed by Canada on the understanding that its concession rates and those of its trading partners will, as a general rule, be fully implemented in eight equal annual stages beginning January 1, 1980. Canada reserves the right to modify or suspend its concessions should any of its trading partners suspend the application of this general rule.

Extract from SCHEDULE V (CANADA)

Tariff Item Number	Description of Products	Base Rate of Duty (Applied Rate)	Concession Rate of Duty
	Sardines, sprats or pilchards, packed in oil or otherwise, in sealed tin containers, the weight of the tin container to be included in the weight for duty:		
11901-1	When weighing over twenty ounces and not over thirty-six ounces each per box	1¾ cts.	1.25 cts.

SCHEDULE V – (CANADA)

Tariff Item Number	Description of Products	Base Rate of Duty (Applied Rate)	Concession Rate of Duty
	Sardines, sprats or pilchards, packed in oil or otherwise, in sealed tin containers, the weight of the tin container to be included in the weight for duty:		
11902-1	When weighing over twelve ounces and not over twenty ounces each per box	1½ cts.	1 ct.
11903-1	When weighing over eight ounces and not over twelve ounces each per box	1 ct.	2/3 ct.
11904-1	When weighing eight ounces each or less . . . . . per box	¾ ct.	0.5 ct.
	Anchovies, packed in oil or otherwise, in sealed tin containers, the weight of the tin container to be included in the weight for duty:		
12001-1	When weighing over twenty ounces and not over thirty-six ounces each per box	1½ cts.	1 ct.
12002-1	When weighing over twelve ounces and not over twenty ounces each per box	1¼ cts.	0.75 ct.
12003-1	When weighing over eight ounces and not over twelve ounces each per box	¾ ct.	0.5 ct.
12004-1	When weighing eight ounces each or less . . . . . per box	½ ct.	0.25 ct.
12100-1	Fish preserved in oil, n.o.p.	20 p.c. *(15 p.c.)*	14 p.c.
12105-1	Bonito preserved in oil	10 p.c.	7 p.c.
12200-1	Herring (not including kippered herring in sealed containers) packed in oil or otherwise, in sealed containers	12½ p.c. *(10 p.c.)*	8 p.c.
	Fish, prepared or preserved, n.o.p.:		
12301-1	Kippered herring in sealed containers	8 p.c.	6 p.c.
12302-1	Salmon	7½ p.c.	3 p.c.

SCHEDULE V - (CANADA)

Tariff Item Number	Description of Products	Base Rate of Duty (Applied Rate)	Concession Rate of Duty
12310-1	Frozen tuna loins for use in the manufacture of canned tuna	11 p.c. *(Free)*	Free
12405-1	Shellfish, prepared or preserved, n.o.p.	11 p.c.	6 p.c.
12410-1	Squid, octopus and cuttlefish	† Free 17½ p.c. *(Free)*	Free Free
12505-1	Oysters, prepared or preserved; oysters in the shell	7½ p.c.	5 p.c.
12505-2	Oysters, smoked	7½ p.c.	3 p.c.
12600-1	Clams in sealed containers	20 p.c. *(10 p.c.)*	10 p.c.
Ex.12800-1	Lobster meat, fresh or boiled; lobsters, boiled	22½ p.c. *(Free)*	Free
12805-1	Lobsters, prepared or preserved	11 p.c.	6 p.c.
12900-1	Crabs in sealed containers	15 p.c. *(10 p.c.)*	11 p.c.
13200-1	Oysters, seed and breeding, imported for the purpose of being planted in Canadian waters; live fish and fish eggs, for propagating purposes	† Free	Free
13300-1	All other articles the produce of the fisheries, n.o.p.	8 p.c.	5 p.c.
13305-1	Trout, live, imported by commercial trout farms	† Free	Free

† **Base rate not bound under GATT.**