

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

# GROUND FISH



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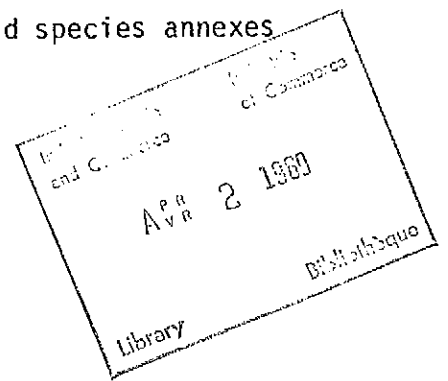
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Canada, Dept. of Fisheries and Oceans, Fisheries Economic Development & Marketing, Marketing Services Branch.

(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

GROUND FISH [U.15]

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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.W.  
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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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1. WORLD CATCH OF GROUND FISH

The world catch of major groundfish species, shown on the table below, declined from 9.9 million metric tons in 1974 to 8.3 million tonnes in 1977. It is of particular interest that in 1971 the world landings of cod amounted to over 3 million tonnes, while the similar figure was down to 2.4 million tonnes in 1977.

Table 1 - WORLD CATCH OF SELECTED GROUND FISH SPECIES, 1971-77  
(thousand metric tons, round weight)

Year	Cod	Haddock	Halibut	Pollock <sup>1/</sup>	Redfish	Turbot	World Total
1971	3,056	506	46	4,276	582	158	8,624
1972	2,886	549	39	4,873	563	141	9,051
1973	2,692	625	32	5,284	559	115	9,307
1974	2,977	582	22	5,668	538	142	9,929
1975	2,594	529	25	5,732	695	138	9,713
1976	2,543	515	24	5,825	770	110	9,787
1977	2,421	403	20	4,870	478	103	8,295

<sup>1/</sup> Includes Atlantic and Alaska pollock



2. THE RELATIVE IMPORTANCE OF GROUND FISH IN CANADIAN FISHERIES

The latest Canadian landing figures refer to 1977. The following table demonstrates that groundfish accounted for 43 percent of the total tonnage harvested and for 29 percent of the landed value of the Canadian catch in 1977.

Table 2 - CANADIAN GROUND FISH LANDINGS, 1977

(Quantities (Q) in thousand metric tons, round weight - Values (V) in millions of dollars)

Species	ATLANTIC COAST		PACIFIC COAST		CANADA	
	Q	V	Q	V	Q	V
Cod	237.6	61.7	10.1 <sup>1/</sup>	3.9	247.7	65.7
Haddock	26.8	11.4	-	-	26.8	11.4
Ocean perch	66.6	9.8	7.9	1.6	74.5	11.4
Halibut	1.5	2.3	5.3	11.2	6.8	13.5
Flatfishes (incl. Turbot) <sup>2/</sup>	134.0	27.9	5.5	1.5	139.4	29.3
Pollock	25.9	4.0	1.1	0.1	27.0	4.2
Hake	11.6	2.0	-	-	11.6	2.0
Cusk	3.4	0.8	-	-	3.4	0.8
Catfish	3.9	0.6	-	-	3.9	0.6
Other groundfish	3.9	0.4	-	-	3.9	0.4
<u>TOTAL GROUND FISH</u>	<u>515.2</u>	<u>120.9</u>	<u>29.9</u>	<u>18.3</u>	<u>545.0</u>	<u>139.3</u>
<u>TOTAL SEA FISHERIES</u>	1,003.1	288.3	204.8	167.9	1,207.9	456.2
<u>INLAND FISHERIES</u>					<u>47.0</u>	<u>29.1</u>
<u>GRAND TOTAL - CANADA</u>					1,254.9	485.3
Share of groundfish in total catch	51%	42%	15%	11%	43%	29%

<sup>1/</sup> Includes 1.9 ling cod, 7.4 grey cod and 0.9 black cod.

<sup>2/</sup> For breakdown see Text Table 3.

In 1978 Canada exported a total of 422,000 tonnes of fishery products, 31 percent (132,000 tonnes) of which was groundfish. Some 89 percent of groundfish products were exported to the U.S. while the remaining 11 percent - consisting mainly of saltfish - was shipped to a wide range of countries (Appendix Table 1).

### 3. PROJECTED CANADIAN POTENTIAL CATCHES FOR GROUND FISH, 1981 AND 1985

Total potential catch figures have been developed for Canada, for 1981 and 1985. It should be pointed out that these figures represent maximum potential catches and are based on a number of major assumptions which are unlikely to be met fully. These catch levels could be attained only if:

- a) Canada could deploy unlimited harvesting capability, irrespective of economic considerations;
- b) Sufficient and suitably deployed processing capacity was available;
- c) Canada obtained the most favourable allocations possible for fishing in the areas beyond the 200 mile zone;
- d) Foreign nations were not allowed to fish in Canadian waters; and
- e) The present management strategy is maintained.

The projected landings figures indicate that, as compared to a total groundfish catch of 545,000 tonnes in 1977, the potential Canadian harvest by 1985 is about 1.4 million tonnes.

Table 3 - PROJECTED POTENTIAL GROUND FISH CATCHES, 1981 AND 1985<sup>1/</sup>

(thousand metric tons, round weight)

	ATLANTIC COAST			PACIFIC COAST			TOTAL		
	1977	1981	1985	1977	1981	1985	1977	1981	1985
FISH AND SHELLFISH TOTAL	1,003	2,001	2,198	205	400	429	1,255	2,443	2,669
GROUND FISH TOTAL	515	1,120	1,284	30	102	112	545	1,222	1,396
Cod	238	530	660	10	16	20	248	546	680
Haddock	27	35	35	-	-	-	27	35	35
Ocean Perch	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	0	35	35	-	-	-	0	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	0	8	9	10	98	103
Share of groundfish in total potential catch							43%	50%	53%

The above table suggests that the quantitative share of groundfish in the total Canadian fish catch could increase from 43 percent in 1977 to 53 percent in 1985.

<sup>1/</sup> Source: Resource Services Directorate, Department of Fisheries and Oceans.

4. CANADIAN GROUND FISH CONSUMPTION

It is estimated that Canadian groundfish consumption will grow by a compound annual rate of 7 percent during the coming years, from 2.08 kg in 1977 to 3.57 kg in 1985. A particularly strong growth in the per capita consumption is foreseen for cod as a popular species in ample supply, backed by expected large scale promotional campaigns.

Table 4 - CANADIAN CONSUMPTION OF GROUND FISH, 1977 AND 1985 ✓

	<u>PER CAPITA CONSUMPTION</u> (kilogram, edible weight)		<u>TOTAL CONSUMPTION</u> (thousand tons, product weight)
	<u>1977</u>	<u>1985</u>	<u>1985</u>
Cod	0.65	1.36	43.2
Ocean Perch	0.33	0.52	14.6
Haddock	0.21	0.34	11.5
Pollock	} 0.38	0.43	11.6
Hake		0.19	6.2
Flatfish	0.34	0.52	14.6
Halibut	0.08	0.10	3.4
Turbot	0.08	0.10	2.4
Others	<u>0.01</u>	<u>0.01</u>	<u>0.3</u>
TOTAL	2.08	3.57	107.8

These figures indicate that Canada could consume 43,000 tonnes of cod out of a total of 108,000 tonnes of groundfish in 1985. When developing these figures, it was assumed that Canada's population would increase from 23.3 million in 1977 to 25.7 million in 1985.

✓ See also Appendix Tables 2 to 4.

5. CANADIAN GROUND FISH EXPORT FORECAST, 1985

Since it is presumed that Canada will not import groundfish in 1985, the volume of Canadian groundfish available for exports can be calculated by deducting estimated Canadian consumption from the quantity of groundfish produced. Such a calculation suggests that, as compared to 132,000 tonnes of groundfish exported by Canada in 1978, the maximum volume of 1985 exports may be about 313,000 tonnes.

Table 5 - CANADIAN GROUND FISH EXPORTS 1978 AND 1985  
(thousand metric tons, product weight)

	<u>1978</u>	<u>P r o d u c t i o n</u>			<u>1985</u>	
	<u>Exports</u>	<u>Atlantic</u>	<u>Pacific</u>	<u>Total</u>	<u>Domestic Retention</u>	<u>Export Availability</u>
Cod	65.8	210	6	216	43.2	173
Haddock	19.2	14	-	14	11.5	2
Hake		28	11	39	6.2	33
Pollock		13	7	20	11.6	8
Ocean Perch	16.4	36	6	42	14.6	27
Halibut	1.9	1	4	5	3.4	2
Flatfish	20.8	43	3	46	14.6	31
Turbot	7.4	9	1	10	2.4	7
Other	0.8	27	3	30	0.3	30
	<u>132.8</u>	<u>381</u>	<u>41</u>	<u>422</u>	<u>107.8</u>	<u>313</u>

6. FUTURE DEVELOPMENTS IN U.S. FISHERIES

Since the United States is, and is likely to remain, the primary market for Canadian groundfish in the foreseeable future, the expansion of its own fisheries will be a major determinant of the level of Canadian groundfish exports to that country in the years ahead.

The U.S. government announced the principles of the "first-ever national fisheries policy" on May 23, 1979. The policy reaffirms the determination of the U.S. administration to take maximum advantage of the extended fisheries jurisdiction and to expand the harvesting and processing potential of the domestic fishing industry. In 1978, the U.S. imported \$3.1 billion worth of fishery products, but the value of its fish exports was only \$900 million, resulting in a commodity trade deficit of \$2.2 billion. It is the aim of the announced policy to decrease this deficit in fishery products to at least \$700 million by 1990.

In order to quantify expected U.S. developments for groundfish species, unofficial estimates have been obtained for expected catch levels in 1985. According to these forecasts, U.S. groundfish fisheries will expand on the Atlantic and Pacific coasts and also in Alaska. On the Atlantic coast the landings of selected groundfish species may increase from 173,000 tonnes in 1978 to 268,000 tonnes in 1985. The forecasted expansion covers a wide range of species (Appendix Table 5). The growth of the Pacific groundfish fisheries is centered on hake: for other species the possibility of increased harvests is limited. The Pacific groundfish catch of selected species is projected to grow from 39,000 tonnes in 1978 to 127,000 tonnes in 1985. (Appendix Table 6).

The most substantial U.S. groundfish resources are in Alaska. The Maximum Sustainable Yield of the five major groundfish species exceeds 2.1 million tonnes, of which 1.5 million tonnes is Alaska pollock. It has been estimated that before 1990 the U.S. will be able to harvest close to 0.7 million tonnes of the five major groundfish species in Alaska. By 1985, the U.S. may be able to take about 75 percent of this latter tonnage, that is over 0.5 million tonnes (Appendix Table 7). This is considered, however, an optimistic forecast in view of the vast development work needed to realize such a catch level in Alaska. It is also questionable whether Alaskan caught and processed groundfish will be price competitive in the Eastern parts of the U.S. where Canada has the advantage of being closer to the market. For this reason it is conceivable that part of the U.S. catch will have to be exported to other countries.

Taking the Atlantic, Pacific and the Alaska fisheries together, total U.S. groundfish landings of selected species are projected to increase from 221,000 tonnes in 1978 to 916,000 tonnes in 1985. This increase is based on the assumption that 75 percent of the 1990 catch target will be achieved in Alaska. Taking 50 percent of the 1990 target for Alaska, the 1985 total U.S. catch is reduced to 745,000 tonnes (Appendix Table 8).

7. COD

The Canadian cod catch is projected to increase from 248,000 tonnes in 1977 to a possible maximum of 680,000 tonnes in 1985 (Text Table 3). 20,000 tonnes of this total is expected to be harvested in B.C.

7.1 CANADIAN COD EXPORT FORECAST

The per capita cod consumption in Canada is expected to grow from 0.65 kg in 1977 to 1.36 kg in 1985 (Appendix Tables 2 to 4). This forecast is based on the fact that cod is already the most popular groundfish species in Canada coupled with the expectation that because of its abundant supply, it will be widely promoted to the consumer. The projected level of consumption is equivalent to a total domestic market of 43,200 tonnes.

After the deduction of Canadian domestic cod consumption, 173,000 tonnes of cod products could be available for exports in 1985. This compares with 65,800 tonnes of cod exported by Canada last year (Appendix Table 1).

Table 6 - CANADIAN COD BALANCE, 1985  
(thousand metric tons, product weight)

	<u>LANDINGS</u> (round weight)	<u>FACTOR</u> (round to product weight)	<u>PRODUCTION</u>	<u>DOMESTIC</u> <u>RETENTION</u>	<u>EXPORTS</u>
Dressed	25.2	1.2	21.0	14.9	6.1
Fillets	214.5	3.2	67.0	18.5	48.5
Blocks	279.3	3.2	87.3	9.3	78.0
Cured	<u>160.3</u>	3.9	<u>41.1</u>	<u>0.5</u>	<u>40.6</u>
<u>TOTAL</u>	<u>680.0</u>		216.4 <sup>1/</sup>	43.2	173.2

<sup>1/</sup> Atlantic Coast: 210.4, Pacific Coast: 6.



7.2 U.S. MARKET PROJECTION FOR COD

Apart from the general economic conditions, the Canadian cod export possibilities to the United States in 1985 will depend on the expected level of consumption in that market, developments in U.S. fisheries, and the competitive force of other supplying countries vis-à-vis Canada.

7.21 U.S. COD CONSUMPTION

The following table shows the growth of the U.S. demand for cod fillets and blocks between 1975 and 1978, and the projected consumption for 1985.

Table 7 - U.S. COD FILLET AND BLOCK CONSUMPTION, 1975-1985

(thousand metric tons, product weight)

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1985</u>
Fillets	47.4	64.4	62.0	76.3	111.3
Blocks	<u>69.2</u>	<u>89.3</u>	<u>83.8</u>	<u>93.6</u>	<u>131.5</u>
TOTAL	116.6	153.7	145.8	169.9	242.8
Percentage change on previous year		32	-5	17	

Between 1975 and 1978 the U.S. groundfish fillet and block market grew from 311,000 tonnes to 373,000 tonnes, that is by 20 percent. During the same period, cod consumption expanded by 45 percent, from 117,000 tonnes to 170,000 tonnes. As a result of these changes the market share of cod fillets and blocks increased from 37 percent in 1975 to 46 percent in 1978 as against other groundfish species.

It is assumed that U.S. demand conditions will be able to sustain a 5.5 percent compound annual growth rate for cod fillets and a 5 percent growth rate for cod blocks between 1978 and 1985. Based on this assumption, the size of the U.S. cod fillet market will grow to 111,000 tonnes and the block market to 132,000 tonnes by 1985. No large scale substitution is foreseen between cod on the one hand and pollock and hake on the other in the years ahead. Recent market trends have demonstrated that there is a fair degree of consumer insistence on cod in the U.S.

In addition to the above fillet and block consumptions, the U.S. also consumed 4,500 tonnes of cod<sup>1/</sup> in the dressed form in 1978. It is estimated that demand for cod in this product form will reach 6,800 tonnes by 1985.

It is difficult to assess the U.S. demand for salted cod since official import statistics do not break it out as a separate item. In 1978, the U.S. imported 17,700 tonnes of salted cod, haddock and hake. It is projected that in 1985 the U.S. will consume about 8,000 tonnes salted cod.

When developing demand forecasts for cod, a 0.9 percent of annual population growth was taken into account. This means that as compared to a population of 218.5 million in 1978, the U.S. population will increase to 232.9 million by 1985 (official estimate).

The foregoing projections are set out in the following table.

---

<sup>1/</sup> Includes haddock, hake, pollock, etc.

Table 8 - U.S. COD CONSUMPTION, 1978 AND 1985

(thousand metric tons, product weight)

	<u>1978</u>	<u>1985</u>	<u>Percentage Increase</u>
Dressed	4.5 <sup>1/</sup>	6.8	n.a.
Fillets	76.3	111.3	46
Blocks	93.6	131.5	40
Salted	<u>17.7</u> <sup>2/</sup>	<u>8.0</u>	<u>n.a.</u>
TOTAL	192.1	257.6	n.a.

<sup>1/</sup>Includes haddock, hake, pollock, etc.

<sup>2/</sup>Includes haddock and hake.

7.22 U.S. COD LANDINGS

In 1978 the U.S. landed 44,000 tonnes of cod; 39,000 tonnes of which was harvested on the Atlantic coast and 5,000 tonnes in the Pacific region. It is foreseen that by 1985 the U.S. Atlantic cod catch will reach 50,000 tonnes, the Maximum Sustainable Yield level. The Pacific catch is not expected to increase in the near future. The U.S. intends to develop, however, a cod fishery in Alaska and the Alaskan cod catch may amount to 54,000 tonnes by 1985 (Appendix Tables 5 to 7).

The foregoing figures indicate that, taking the three regions together, the U.S. domestic cod catch may increase from 44,000 tonnes in 1978 to 109,000 tonnes in 1985 (Appendix Table 8).

7.23 U.S. COD BALANCE

When calculating the U.S. cod balance, it is projected that the U.S. cod catch may amount to 109,000 tonnes in 1985 (round weight). It is assumed, however, that half of the Alaskan cod catch will be exported to Japan and will not enter the U.S. domestic market. This assumption is justified by the fact that Japan is likely to have a cod import requirement of 100,000 tonnes (product weight) in 1985 and its geographic proximity will make Alaska a convenient source of supply.

Based on this assumption, out of a total potential 1985 U.S. cod catch of 109,000 tonnes only 82,000 tonnes (round weight) will be available for the domestic market. By using appropriate conversion factors (1.2 for dressed and 3.2 for fillets and blocks) the projected U.S. domestic production of cod is estimated at 29,300 tonnes in terms of product weight.

The following table suggests that, despite increased domestic production, the U.S. import requirements for cod products could expand from 176,000 tonnes in 1978 to 228,000 tonnes in 1985, an increase of about 30 percent.

Table 9 - U.S. COD BALANCE 1978 AND 1985  
(thousand metric tons, product weight)

	DEMAND		DOMESTIC PRODUCTION		IMPORT REQUIREMENT	
	1978	1985	1978	1985	1978	1985
Dressed	4.5 <sup>1/</sup>	6.8	3.0 <sup>3/</sup>	6.8	4.5 <sup>1/</sup>	-
Fillets	76.3	111.3	12.6	18.0	61.0	93.0
Blocks	96.6 <sup>2/</sup>	131.5	0.3	4.5	93.0	127.0
Salted	17.7 <sup>2/</sup>	8.0	-	-	17.7 <sup>2/</sup>	8.0
<b>TOTAL</b>	<b>192.1</b>	<b>257.6</b>	<b>15.9</b>	<b>29.3</b>	<b>176.2</b>	<b>228.0</b>

<sup>1/</sup> Includes haddock, hake, pollock, etc.  
<sup>2/</sup> Includes haddock and hake.  
<sup>3/</sup> Estimated.

7.24 THE U.S. COD IMPORT MARKET

The U.S. imported 93,000 tonnes of cod blocks and 61,000 tonnes of cod fillets in 1978. The main block supplier was Canada, followed by Denmark and Iceland. The dominant fillet supplying country was Iceland with Canada being in second place.

It is estimated that the cod catch of Norway and Denmark will not increase between now and 1985; therefore, these countries will not be able to export more cod products to the U.S. than they did in 1978. Iceland, on the other hand, expects a cod catch of about 470,000 tonnes in 1985, as compared to 318,000 tonnes in 1978 and perhaps 290,000 tonnes in 1979. Thus Canada and Iceland are likely to supply the additional cod import requirements of the U.S. in 1985.

TABLE 10 - U.S. COD IMPORTS, BY COUNTRY, 1978 AND 1985

(thousand metric tons, product weight)

	<u>BLOCKS</u>		<u>FILLETS</u>	
	<u>1978</u>	<u>1985</u>	<u>1978</u>	<u>1985</u>
Canada	30	57	18	34
Iceland	18	31	30	47
Norway	15	14	7	7
Denmark	26	25	5	5
Other	4	-	2	-
TOTAL	93	127	61	93

7.3 E.E.C. MARKET PROJECTION FOR COD

The E.E.C. countries landed 538,000 tonnes of cod in 1977 and imported 270,000 tonnes of cod products from third countries (in terms of round weight). It is important to point out that 220,000 tonnes of the total imports were supplied by Iceland, Norway and the Faroes, that is by countries enjoying preferential entry to the E.E.C. The E.E.C. cod consumption is calculated as follows:

Table 11 E.E.C. APPARENT DOMESTIC CONSUMPTION OF COD 1976 AND 1977  
(thousand metric tons, round weight)

	<u>1976</u>	<u>1977</u>
E.E.C. Landings of cod	641.2	538.0
Imports from third countries	256.2	270.5
Exports to third countries	<u>147.3</u>	<u>120.0</u>
Apparent E.E.C. Consumption	750.1	688.5

If one assumes stable supplies of cod to the E.E.C. from Iceland, Norway and the Faroes, the E.E.C. cod import requirements from other countries may amount to between 80,000 tonnes and 120,000 tonnes (in terms of round weight) in 1985.

It is projected that Germany will import 16,000 tonnes of cod products from Canada in 1985 (product weight). This total may consist of 10,000 tonnes of blocks, 4,500 tonnes of fillets and 1,500 tonnes of cod in the dressed form.

The United Kingdom is the other major potential cod market for Canada within the E.E.C. Canadian cod exports to the U.K. in 1985 are forecasted to amount to 10,000 tonnes of fillets and 8,000 tonnes of blocks (product weight).

France may also buy Canadian cod in 1985. It is estimated that 2,500 tonnes of cod blocks will be sold by Canada to France in that year (product weight).

7.4. COD MARKET PROJECTION FOR SPAIN

Spain's landings of cod declined from 255,000 tonnes in 1971 to 80,000 tonnes in 1977. Spanish cod import requirements may amount to 50,000 tonnes (round weight) in 1985, one-third of which may be supplied by Canada. It is projected, that - in terms of product weight - Canada will export to Spain 1,000 tonnes of cod in the dressed form, 500 tonnes of cod blocks and 4,000 tonnes of salted cod in 1985.

7.5 COD MARKET PROJECTION FOR PORTUGAL

Between 1971 and 1977 Portugal's cod landings declined from 171,000 tonnes to 32,000 tonnes and are expected to decline further. In 1977, Portugal imported 25,000 tonnes of salted cod, primarily wet salt and dry salt cod from Iceland and Norway (quantity expressed in dry salt cod equivalent). It is expected that Canada will ship 7,000 tonnes of dry salt cod (product weight) and 2,300 tonnes of dressed cod to Portugal in 1985.

7.6 COD MARKET PROJECTIONS FOR SOUTH AND CENTRAL AMERICA, AND CARIBBEAN.

Though study teams have not visited these areas, an assessment of cod import markets has been made for South and Central America and for the West Indies. Twenty-one countries have been identified as actual and potential importers of cod products, but some of them with only marginal import volumes. The size of the total potential cod import market in these countries may amount to about 41,000 tonnes in 1985. The most important markets are Jamaica, Brazil, Puerto Rico, Mexico, Trinidad and Venezuela. (Appendix Table 10 ).

Table 12 - FORECAST OF COD IMPORTS BY SOUTH AND CENTRAL AMERICA AND CARIBBEAN COUNTRIES, 1985

(metric tons, product weight)

	Dressed	Filletts	Dry Salted	Wet Salted	Boneless Salted	TOTAL
Jamaica	500		2,500			3,000
Brazil			15,000	7,000		22,000
Puerto Rico	60	60	5,800	35	450	6,405
Mexico	1,000		2,000			3,000
Trinidad	15		2,000	30	60	2,105
Venezuela	1,000		1,000			2,000
Others	120	39	2,019		224	2,402
TOTAL	2,695	99	30,319	7,065	734	40,912



It is believed that Canada would be able to increase its cod sales substantially to these parts of the world and to ship 20,000 tonnes of salted cod and 1,300 tonnes of dressed cod by 1985 (product weight).

#### 7.7 MARKET POTENTIAL FOR CANADIAN COD

The following table sets out the forecasted Canadian cod consumption in 1985 and the export opportunities identified in various countries. The total tonnage of cod products to be sold in Canada and abroad matches the forecasted maximum catch, thus no cod surplus is foreseen for 1985.

It should be noted that, in addition to the identified market opportunities for Canadian cod in different countries, further opportunities exist that cannot be quantified at present. The following are estimated 1985 total cod import requirements in terms of product weight:

- a) Japan 100,000 tonnes,
- b) Other Asian countries 20,000 tonnes,
- c) European countries other than EEC, Spain and Portugal: 6,000, to 16,000 tonnes,
- d) Unknown quantity in Eastern Europe.

Table 13 - MARKET POTENTIAL FOR CANADIAN COD, 1985  
(thousand metric tons, product weight)

	<u>FRESH/FROZEN DRESSED</u>	<u>FRESH/FROZEN FILLETS</u>	<u>FROZEN BLOCKS</u>	<u>CURED</u>	<u>TOTAL</u>
Canada	14.9	18.5	9.3	0.5	43.2
U.S.A.	-	34.0	57.0	8.0	99.0
Germany	1.5	4.5	10.0	-	16.0
U.K.	-	10.0	8.0	-	18.0
France	-	-	2.5	-	2.5
Spain	1.0	-	0.5	4.0	5.5
Portugal	2.3	-	-	7.0	9.3
Italy	-	-	-	1.6	1.6
Central, South America and Caribbean Area	1.3	-	-	20.0	21.3
Total (Product weight)	21.0	67.0	87.3	41.1	216.4
Factor	1.2	3.2	3.2	3.9	
Total (Round weight )	25.2	214.4	279.3	160.3	679.2
Maximum Catch Projection					680.0
Surplus:					0

8. HADDOCK

The Canadian haddock catch is projected to increase from 27,000 tonnes in 1977 to a maximum of 35,000 tonnes in 1985 (Text Table 3).

8.1 CANADIAN HADDOCK EXPORT FORECAST

Since Canadian per capita domestic haddock consumption is expected to increase from 0.21 kg in 1977 to 0.34 kg (edible weight) in 1985 (Text Table 4), Canada will retain 11,500 tonnes of haddock (product weight), with 2,700 tonnes of fillets available for exports. This compares with an estimated export of 6,000 tonnes in 1978<sup>1/</sup>.

Table 14 - CANADIAN HADDOCK BALANCE, 1985  
(thousand metric tons, product weight)

	<u>LANDINGS</u> (round weight)	<u>FACTOR</u> (round to product weight)	<u>PRODUCTION</u>	<u>DOMESTIC RETENTION</u>	<u>EXPORTS</u>
Dressed	6.1	1.2	5.1	5.1	-
Fillets	21.7	3.2	6.8	4.1	2.7
Blocks	<u>7.4</u>	3.2	<u>2.3</u>	<u>2.3</u>	-
TOTAL	35.2		14.2	11.5	2.7

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1/  
Canadian export statistics show a combined 1978 export of haddock, hake, pollock and cusk of 19,187 tonnes. This estimate is based on U.S. import statistics.

8.2 U.S. MARKET PROJECTION FOR HADDOCK

The U.S. haddock catch is foreseen to expand from 18,000 tonnes in 1978 to 29,000 tonnes in 1985 (Appendix Tables 5 and 8). During the same period U.S. haddock fillet consumption is calculated to grow from 22,500 to 32,000 tonnes and that of haddock block consumption from 13,500 tonnes to 18,000 tonnes (Appendix Table 9). In addition, there is a demand for haddock in the dressed form which amounted to 2,400 tonnes in 1978 and may increase to 3,600 tonnes by 1985. The following table demonstrates that in 1985 the U.S. import requirements for haddock fillets and blocks will be over 26,000 tonnes and 15,000 tonnes respectively.

Table 15- U.S. IMPORT REQUIREMENTS FOR HADDOCK, 1978 and 1985  
(thousand metric tons, product weight)

	DEMAND		DOMESTIC PRODUCTION		IMPORT REQUIREMENTS	
	<u>1978</u>	<u>1985</u>	<u>1978</u>	<u>1985</u>	<u>1978</u>	<u>1985</u>
Dressed	2.4	3.6	} 7.8	3.6	n.a.	-
Fillets	21.3	31.8		5.4	17.1	26.3
Blocks	13.5	18.1		2.7	12.2	15.4
TOTAL	37.2	53.5	7.8	11.7	n.a.	41.7

Since it is projected that Canada will be able to sell only 3,000 tonnes of haddock fillets to the U.S., the balance will have to be supplied by other traditional supplying countries, such as Iceland, Norway and Denmark.

8.3 MARKET POTENTIAL FOR CANADIAN HADDOCK

Since no export market potential for haddock has been identified outside the U.S., the table below identifies only Canada and the U.S. as potential markets. This calculation shows that if Canada had a larger haddock catch, it could export to the U.S. 14,000 tonnes of haddock fillets and blocks as compared to the forecasted 2,700 tonnes.

TABLE 16- MARKET POTENTIAL FOR CANADIAN HADDOCK 1985  
(thousand metric tons, product weight)

	<u>DRESSED</u>	<u>FILLETS</u>	<u>BLOCKS</u>	<u>TOTAL</u>
Canada	5.1	4.1	2.3	11.5
U.S.A.	-	11.0	3.0	14.0
Total (product weight)	5.1	15.1	5.3	25.5
Factor	1.2	3.2	3.2	
Total (round weight)	6.1	48.3	17.0	71.4
Maximum Catch Projection (round weight)				35.0
Deficiency (round weight)				36.4

9. OCEAN PERCH

As shown on Text Table 3, The Canadian ocean perch catch is projected to grow from 75,000 tonnes in 1977 to a maximum of 161,000 tonnes in 1985. Of this total, 23,000 tonnes are expected to be landed in B.C.

9.1 CANADIAN OCEAN PERCH EXPORT FORECAST

The per capita consumption of ocean perch is projected to expand in Canada from 0.33 kg in 1977 to 0.52 kg (edible weight) in 1985. Based on this projection, the size of the Canadian domestic market will be 14,600 tonnes (product weight) in 1985 (Text Table 4), while 27,400 tonnes will be available for exports.

Table 17- CANADIAN OCEAN PERCH BALANCE, 1985  
(thousand metric tons, product weight)

	<u>LANDINGS</u> (round weight)	<u>FACTOR</u> (round to product weight)	<u>PRODUCTION</u>	<u>DOMESTIC RETENTION</u>	<u>EXPORTS</u>
Round/ dressed	2.3	1.0	2.3	2.3	-
Fillets	156.7	4.0	39.2	11.8	27.4
Blocks	<u>2.0</u>	4.0	<u>0.5</u>	<u>0.5</u>	<u>-</u>
TOTAL	161.0		42.0 <sup>1/</sup>	14.6	27.4

<sup>1/</sup> Atlantic Coast: 36, Pacific Coast: 6.

9.2 U.S. MARKET PROJECTION FOR OCEAN PERCH

Between 1978 and 1985 the U.S. is expected to increase its ocean perch catch both on the Atlantic coast and in Alaska. Based on the assumption that 75 percent of the 1990 catch target will be achieved in Alaska by 1985, the U.S. would land 119,000 tonnes of ocean perch in that year as compared to 18,000 tonnes in 1978 (Appendix Tables 5 to 8). For the purpose of the current exercise, we presume that the 1985 Alaskan catch will reach only 50 percent of the 1990 target figure and therefore the total U.S. ocean perch catch will be 87,000 tonnes, instead of 119,000 tonnes.

It is projected that as against a total U.S. consumption of 25,400 tonnes of ocean perch fillets in 1978, in 1985 the size of the domestic market will be 36,300 tonnes (Appendix Table 9).

The following calculation shows that the volume of ocean perch imports by the U.S. will drop from 23,000 tonnes in 1978 to 15,700 tonnes in 1985:

Table 18- U.S. IMPORT REQUIREMENTS FOR OCEAN PERCH, 1978 AND 1985

(thousand metric tons, product weight)

	DEMAND		DOMESTIC PRODUCTION		IMPORT REQUIREMENTS	
	1978	1985	1978	1985	1978	1985
Fillets	25.4	36.3	4.7	20.6	21.6	15.7
Blocks	1.4	1.4	0	1.4	1.4	-
TOTAL	26.8	37.7	4.7	22.0	23.0	15.7

In 1978, Canada exported 19,200 tonnes of ocean perch fillets and 220 tonnes of blocks to the U.S. It is estimated that out of a total U.S. import requirement of 15,700 tonnes of fillets Canada will supply 14,000 tonnes in 1985.

### 9.3 EXPORT OPPORTUNITIES OUTSIDE THE U.S.

Export opportunities for Canadian ocean perch have been identified in Germany, Portugal and Sweden by the visiting teams. It is foreseen that Germany will buy 1,000 tonnes of ocean perch in the round/dressed form and 500 tonnes of fillets in 1985. Portugal starts importing Canadian ocean perch this year. It is hoped that consumer reaction will be favourable and Portugal becomes a permanent export market for this species. In 1985, an estimated 1,500 tonnes of ocean perch could be sold to Portugal in the frozen dressed form. Swedish importers have expressed interest in buying ocean perch fillets from Canada. Such purchases are estimated to amount to 200 tonnes in 1985.

### 9.4 MARKET POTENTIAL FOR CANADIAN OCEAN PERCH

The following table demonstrates that, after having taken into account expected domestic consumption and identified export opportunities, Canada will have a surplus catch of about 48,000 tonnes of ocean perch (round weight) in 1985. This poses a challenge to develop export markets for surplus ocean perch.



Table 19 - MARKET POTENTIAL FOR CANADIAN OCEAN PERCH, 1985  
(thousand metric tons, product weight)

	<u>ROUND/DRESSED</u>	<u>FILLETS</u>	<u>BLOCKS</u>	<u>CURED</u>	<u>TOTAL</u>
Canada	2.3	11.8	0.5	-	14.6
U.S.A.	-	14.0	-	-	14.0
Germany	1.0	0.5	-	-	1.5
Portugal	1.5	-	-	-	1.5
Sweden	-	0.2	-	-	0.2
<hr/>					
TOTAL (product weight)	4.8	26.5	0.5	-	31.8
FACTOR	1.0	4.0	4.0		
TOTAL (round weight)	4.8	106.0	2.0	-	112.8
MAXIMUM CATCH PROJECTION (round weight)					161.0
<hr/>					
SURPLUS (round weight)					48.2

10. FLATFISH

As compared to 115,000 tonnes in 1977, maximum Canadian flatfish landings may amount to 163,000 tonnes in 1985 (Text Table 3). These figures include American plaice, witch, yellowtail flounder and "other" flatfish, but exclude turbot and halibut landings. B.C. flatfish landings (included in the total) may amount to 8,000 tonnes in 1985.

10.1 CANADIAN FLATFISH: EXPORT FORECAST

The Canadian per capita consumption of flatfish products is projected to grow from 0.34 kg in 1977 to 0.52 kg in 1985 (edible weight). This consumption level means that Canada will retain 14,600 tonnes of flatfish (product weight) in 1985 (Text Table 4) and about 31,000 tonnes will be available for exports as fillets and blocks.

Table 20- CANADIAN FLATFISH BALANCE, 1985  
(thousand metric tons, product weight)

	<u>LANDINGS</u> (round weight)	<u>FACTOR</u> (round to product weight)	<u>PRODUCTION</u>	<u>DOMESTIC RETENTION</u>	<u>EXPORTS</u>
Round/dressed	2.3	1.0	2.3	2.3	-
Fillets	} 160.7	3.7	} 43.4	11.3	} 31.1
Blocks		3.7		1.0	
TOTAL	163.0		45.7 <sup>1/</sup>	14.6	31.1

<sup>1/</sup> Atlantic Coast: 42.7, Pacific Coast: 3.

## 10.2 U.S. MARKET PROJECTION FOR FLATFISH

Between 1978 and 1985, the U.S. flatfish catch is forecasted to grow from 80,000 tonnes to 158,000 tonnes. This projection presumes a fast development of Alaskan fisheries and the realization of 75 percent of the 1990 catch target by 1985. If one scales down the expected Alaskan flatfish catch to 50 percent, the 1985 U.S. total catch decreases to 134,000 tonnes. For the purpose of our calculations we used the latter assumption (Appendix Tables 5 to 8).

As shown on Appendix Table 9, the U.S. consumption of flatfish fillets is envisaged to increase from 41,000 tonnes in 1978 to 57,700 tonnes in 1985. The corresponding figures for flatfish blocks are 5,600 tonnes and 6,800 tonnes.

The following table shows that the increased U.S. flatfish consumption will be primarily met by larger domestic production, and import requirements will be only marginally above the 1978 level of 27,000 tonnes in 1985.

Table 21 - U.S. IMPORT REQUIREMENTS FOR FLATFISH, 1978 and 1985  
(thousand metric tons, product weight)

	DEMAND		DOMESTIC PRODUCTION		IMPORT REQUIREMENT	
	<u>1978</u>	<u>1985</u>	<u>1978</u>	<u>1985</u>	<u>1978</u>	<u>1985</u>
Fillets	32.3	57.7	19.0	32.8	22.0	25.0
Blocks	5.6	6.8	0.1	4.0	5.0	3.0
TOTAL	37.9	64.5	19.1	36.8	27.0	28.0

In 1978, out of the total 27,000 tonnes of U.S. flatfish imports, 22,000 tonnes were supplied by Canada. It is presumed that in 1985 Canada will be supplying the total U.S. import requirement of 28,000 tonnes.

10.3 EXPORT OPPORTUNITIES OUTSIDE U.S.

Out of the 12 countries surveyed outside the U.S., only Sweden has been identified where minor possibilities may exist for selling Canadian flatfish. It has been estimated that Sweden may import 5,000 tonnes of flatfish fillets in 1985, 300 tonnes of which may originate in Canada.

10.4 MARKET POTENTIAL FOR CANADIAN FLATFISH

The comparison of Canadian domestic consumption and identified export opportunities on the one hand, and potential 1985 catch on the other, shows that Canada will have a surplus of 10-11,000 tonnes of flatfish (in terms of round weight). This provides an opportunity for Canada to develop overseas markets for flatfish.

Table 22 - MARKET POTENTIAL FOR CANADIAN FLATFISH, 1985

(thousand metric tons, product weight)

	<u>ROUND/DRESSED</u>	<u>FILLETS</u>	<u>BLOCKS</u>	<u>CURED</u>	<u>TOTAL</u>
Canada	2.3	11.3	1.0	-	14.6
U.S.A.	-	25.0	3.0	-	28.0
Sweden	-	0.3	-	-	0.3
TOTAL (product weight)	2.3	36.6	4.0		42.9
FACTOR	1.0	3.7	3.7		
TOTAL (round weight)	2.3	135.4	14.8		152.5
MAXIMUM CATCH PROJECTION (Round weight)					163.0
SURPLUS (round weight)					10.5

11. POLLOCK

Between 1977 and 1985 Canadian pollock landings may grow from 27,000 to 60,000 tonnes (Text Table 3), of which 20,000 tonnes of this total may be landed in British Columbia.

11.1 CANADIAN POLLOCK EXPORT FORECAST

The combined pollock-hake per capita consumption was 0.38 kg in Canada in 1977. It is estimated that the consumption of the pollock component will increase to 0.43 kg (edible weight) and the size of the domestic market will be 11,600 tonnes (product weight) by 1985 (Text Table 4). This would make 8,000 tonnes of fillets or blocks available for exports.

Table 23 - CANADIAN POLLOCK BALANCE, 1985  
(thousand metric tons, product weight)

	<u>LANDINGS</u> (round weight)	<u>FACTOR</u> (round to product weight)	<u>PRODUCTION</u>	<u>DOMESTIC RETENTION</u>	<u>EXPORTS</u>
Dressed	1.2	1.2	1.0	1.0	
Fillets	} 59.4	3.2	} 18.6	2.6	} 8.0
Blocks		3.2		8.0	
TOTAL	60.6		19.6 <sup>1/</sup>	11.6	8.0

11.2 U.S. MARKET PROJECTION FOR POLLOCK

The U.S. has relatively small pollock resources on the Atlantic and Pacific coasts but a vast pollock stock in Alaska. The Maximum Sustainable Yield of the latter is close to 1.5 million tonnes. In the case where one presumes that 75 percent of the 1990 catch target will be reached in Alaska by 1985, the total U.S. pollock catch would amount to 327,000 tonnes as compared to 20,000 tonnes in 1978 (Appendix Tables 5 to 8). By assuming a 50 percent development

<sup>1/</sup> Atlantic Coast: 12.6, Pacific Coast: 7.

rate in Alaska, the 1985 U.S. catch estimates are reduced to 220,000 tonnes. It is likely that the Alaska pollock resource will be developed with the Japanese market in mind and pollock-based products for Japan may be processed in Alaska in the future.

The U.S. domestic consumption of pollock fillets is projected to increase from 13,400 tonnes in 1978 to 18,900 tonnes in 1985, and that of pollock blocks from 34,800 tonnes to 45,400 tonnes (Appendix Table 9). We believe that it is unlikely that any large scale substitution of pollock for cod will take place in the U.S. market.

The following table shows that the U.S. imported nearly 43,000 tonnes of pollock fillets and blocks in 1978. It is presumed that Canada will be able to supply 5,000 tonnes of Atlantic pollock fillets to the U.S. while, taking into account a 50 percent rate of development in Alaska, America will be exporting 10,000 tonnes of Alaska pollock products to Japan in 1985.

Table 24- U.S. IMPORT REQUIREMENTS FOR POLLOCK, 1978 AND 1985  
(thousand metric tons, product weight)

	<u>DEMAND</u>		<u>DOMESTIC PRODUCTION</u>		<u>IMPORT REQUIREMENTS</u>		<u>EXPORT POTENTIAL</u>	
	<u>1978</u>	<u>1985</u>	<u>1978</u>	<u>1985</u>	<u>1978</u>	<u>1985</u>	<u>1978</u>	<u>1985</u>
Fillets	13.4	18.9	5.4	13.9	5.9	5.0	-	-
Blocks	34.8	45.4	0.4	45.4	36.9	-	-	10.0
TOTAL	48.2	64.3	5.8	69.3	42.8	5.0	-	10.0

11.3 EXPORT OPPORTUNITIES OUTSIDE U.S.

Phase I of the Worldwide Marketing Study has identified only Sweden as a potential buyer of Canadian pollock outside the U.S. Sweden's total pollock import requirement is estimated to be 3,000 tonnes in 1985 and 200 tonnes is foreseen to be supplied by Canada.

11.4 MARKET POTENTIAL FOR CANADIAN POLLOCK

According to the following table, Canadian domestic consumption, and projected exports to the U.S. and Sweden, are calculated to be below the level of the expected 1985 Canadian catch. In terms of round weight, the Canadian surplus is calculated at 4,200 tonnes.

Table 25- MARKET POTENTIAL FOR CANADIAN POLLOCK, 1985  
(thousand metric tons, product weight)

	<u>DRESSED</u>	<u>FILLETS</u>	<u>BLOCKS</u>	<u>CURED</u>	<u>TOTAL</u>
Canada	1.0	2.6	8.0	-	11.6
U.S.A.	-	5.0	-	1.0	6.0
Sweden	-	0.2	-	-	0.2
TOTAL (product weight)	1.0	7.8	8.0	1.0	17.8
FACTOR	1.2	3.2	3.2	4.0	
TOTAL (round weight)	1.2	25.0	25.6	4.0	55.8
MAXIMUM CATCH PROJECTION (round weight)					60.0
SURPLUS (round weight)					4.2

12. HAKE

The Canadian hake catch is foreseen to expand from 12,000 tonnes in 1977 to a maximum of 120,000 tonnes in 1985 (Text Table 3), of which 25,000 tonnes of this total may be landed in British Columbia.

12.1 CANADIAN HAKE EXPORT FORECAST

It is estimated that the average Canadian will be consuming 0.19 kg of hake (edible weight) in 1985, thus in terms of product weight the size of the Canadian market will be 6,200 tonnes (Text Table 4). Having satisfied domestic market demand, Canada would have available 32,800 tonnes of hake for exports.

Table 26 - CANADIAN HAKE BALANCE, 1985  
(thousand metric tons, product weight)

	<u>LANDINGS</u> (round weight)	<u>FACTOR</u> (round to product weight)	<u>PRODUCTION</u>	<u>DOMESTIC RETENTION</u>	<u>EXPORTS</u>
Dressed	2.8	1.2	2.3	2.3	--
Fillets	} 116.6	3.2	} 36.4	1.0	} 32.8
Blocks		3.2		2.6	
Cured	<u>0.6</u>	2.0	<u>0.3</u>	<u>0.3</u>	<u>--</u>
TOTAL	120.0		39.0 <sup>1/</sup>	6.2	32.8

12.2 U.S. MARKET PROJECTION FOR HAKE

The U.S. expects a substantial expansion of its hake fisheries, both on the Atlantic and Pacific coasts. As compared to an actual total landing of 33,000 tonnes in 1978, the 1985 catch may amount to around 166,000 tonnes. (Appendix Tables 5, 6 and 8).

<sup>1/</sup> Atlantic Coast: 28, Pacific Coast: 11.



In 1978, the U.S. consumed 17,500 tonnes of silver hake (whiting) blocks. No statistical information is available on the volume of dressed, filleted and cured hake consumed in the U.S. It is known that 986 tonnes of hake fillets were produced in the U.S. last year, but the volume of imports cannot be obtained. It is estimated that the U.S. hake block consumption will grow to 27,200 tonnes by 1985. If one expresses the total volume of hake production in terms of blocks, the U.S. will be able to produce 52,000 tonnes of blocks.

Table 27- U.S. HAKE BALANCE, 1978 AND 1985  
(thousand metric tons, product weight)

	DEMAND		DOMESTIC PRODUCTION		IMPORT REQUIREMENTS		EXPORTS
	<u>1978</u>	<u>1985</u>	<u>1978</u>	<u>1985</u>	<u>1978</u>	<u>1985</u>	<u>1985</u>
Blocks	17.5	27.2	n.a.	52.0	18.0	-	24.8 <sup>1/</sup>

### 12.3 MARKET POTENTIAL FOR CANADIAN HAKE

The previous section has shown that it is highly unlikely that the U.S. will import any hake products in 1985. Among 12 other countries outside the U.S. surveyed recently, no prospects for the export of Canadian hake have been immediately identified. This means that after the deduction of domestic consumption, Canada could have a surplus catch of over 105,000 tonnes of hake (round weight) in 1985. Apart from the expanding U.S. hake production, Latin American countries are also developing their hake fisheries. Further attention must be paid to considering development of future overseas markets for Canadian hake.

<sup>1/</sup> This tonnage will be reduced by U.S. domestic consumption of dressed, filleted and cured hake.

Table 28 - MARKET POTENTIAL FOR CANADIAN HAKE 1985  
(thousand metric tons, product weight)

	<u>DRESSED</u>	<u>FILLETS</u>	<u>BLOCKS</u>	<u>CURED</u>	<u>TOTAL</u>
Canada	2.3	1.0	2.6	0.3	6.2
<hr/>					
TOTAL (product weight)	2.3	1.0	2.6	0.3	6.2
FACTOR	1.2	3.2	3.2	2.0	
TOTAL (round weight)	2.8	3.2	8.3	0.6	14.9
MAXIMUM CATCH (round weight)					<u>120.0</u>
SURPLUS (round weight)					105.1

13. TURBOT

Total Canadian turbot landings are expected to increase from 25,000 tonnes in 1977 to a maximum of 32,000 tonnes in 1985 (Text Table 3). Of this total 2,000 tonnes may be landed in British Columbia.

13.1 CANADIAN TURBOT EXPORT FORECAST

It is estimated that the per capita Canadian consumption of turbot products will increase from 0.08 kg. in 1977 to 0.10 kg in 1985 (edible weight). In terms of product weight, the size of the domestic turbot market is calculated to be 2,400 tonnes in 1985 (Text Table 4), while 7,400 tonnes of fillets and blocks will be exported.

Table 29 - CANADIAN TURBOT BALANCE, 1985  
(thousand metric tons, product weight)

	<u>LANDINGS</u> (round weight)	<u>FACTOR</u> (round to product weight)	<u>PRODUCTION</u>	<u>DOMESTIC RETENTION</u>	<u>EXPORTS</u>
Fillets	25.0	3.5	7.8	2.0	5.8
Blocks	<u>7.0</u>	3.5	<u>2.0</u>	<u>0.4</u>	<u>1.6</u>
TOTAL	32.0		9.8 <sup>1/</sup>	2.4	7.4

13.2 U.S. MARKET PROJECTION FOR TURBOT

The U.S. does not land turbot in meaningful quantities and, therefore, its total turbot requirement was imported in the past. In 1978 they consumed 2,200 tonnes of turbot blocks and 18,600 tonnes of turbot fillets. While demand for such blocks may not increase, turbot fillet consumption may expand to over 26,000 tonnes by 1985 (Appendix Table 9).

<sup>1/</sup> Atlantic Coast: 8.8, Pacific Coast: 1.

In 1978, Canada exported about 2,000 tonnes of turbot blocks and 6,000 tonnes of turbot fillets to the U.S. It is estimated that Canada could be able to sell 1,000 tonnes of turbot blocks and 9,000 tonnes of fillets to the U.S. in 1985.

Table 30- U.S. IMPORT REQUIREMENTS FOR TURBOT, 1978 AND 1985  
(thousand metric tons, product weight)

	DEMAND		DOMESTIC PRODUCTION		IMPORT REQUIREMENTS	
	1978	1985	1978	1985	1978	1985
Fillets	18.6	26.2	Ø	Ø	18.6	26.2
Blocks	<u>2.2</u>	<u>2.3</u>	<u>Ø</u>	<u>Ø</u>	<u>2.2</u>	<u>2.3</u>
TOTAL	20.8	28.5	Ø	Ø	20.8	28.5

13.3 MARKET POTENTIAL FOR CANADIAN TURBOT

The study teams have not been able to locate markets for Canadian turbot outside the United States. However, the estimated U.S. demand and the domestic consumption are larger than the expected Canadian turbot harvest in 1985. In order to satisfy these demands, Canada would need a 11,400 tonnes larger catch than forecasted.

Table 31- MARKET POTENTIAL FOR CANADIAN TURBOT  
(thousand metric tons, product weight)

	<u>DRESSED</u>	<u>FILLETS</u>	<u>BLOCKS</u>	<u>CURED</u>	<u>TOTAL</u>
Canada	-	2.0	0.4	-	2.4
U.S.A.	-	9.0	1.0	-	10.0
TOTAL (product weight)	-	11.0	1.4	-	12.4
FACTOR		3.5	3.5		
TOTAL (round weight)		38.5	4.9		43.4
MAXIMUM CATCH PROJECTION (round weight)					32.0
DEFICIENCY (round weight)					11.4

14. HALIBUT

Between 1977, and 1985 the total Canadian halibut catch is expected to increase from 6,000 tonnes to only 7,000 tonnes (Text Table 3). Of this total 6,000 tonnes may be landed in British Columbia.

14.1 CANADIAN HALIBUT EXPORT FORECAST

It is estimated that the Canadian per capita halibut consumption will grow from 0.08 kg in 1977 to 0.10 kg in 1985 (edible weight), and the size of the domestic market will be 4,000 tonnes (product weight) in 1985 (Text Table 4). This level of domestic consumption would leave 1,800 tonnes of halibut for export as compared to 1,905 tonnes exported by Canada in 1978 (Appendix Table 1).

Table 32 -CANADIAN HALIBUT BALANCE, 1985  
(thousand metric tons, product weight)

	<u>LANDINGS</u> (round weight)	<u>FACTOR</u> (round to product weight)	<u>PRODUCTION</u>	<u>DOMESTIC RETENTION</u>	<u>EXPORTS</u>
Dressed	7.0	1.35	5.2 <sup>1/2</sup>	3.4	1.8

14.2 U.S. MARKET PROJECTION FOR HALIBUT

The U.S. lands a very small volume of halibut on the Atlantic coast and more substantial quantities in Alaska. Both of these resources are, however, static and the total U.S. halibut catch is not expected to exceed the 1978 level of 8,000 tonnes in 1985 (Appendix Table 8).

In 1978, the U.S. consumed about 11,000 tonnes of halibut in the dressed and filleted forms. It is estimated that by 1985 consumption will grow to 13,600 tonnes and import requirements would amount to 7,600 tonnes, mainly in the dressed form.

<sup>1/2</sup> Pacific Coast: 4.2, Atlantic Coast: 1.

Table 33- U.S. IMPORT REQUIREMENTS FOR HALIBUT, 1978 AND 1985

(thousand metric tons, product weight)

	DEMAND		DOMESTIC PRODUCTION		IMPORT REQUIREMENTS	
	1978	1985	1978	1985	1978	1985
Dressed	} 10.9 <sup>1/</sup>	} 13.6	} 6.0 <sup>1/</sup>	} 6.0	3.2	} 7.6
Filletts					0.7	
TOTAL	10.9	13.6	6.0	6.0	3.9	7.6

14.3 MARKET POTENTIAL FOR CANADIAN HALIBUT

The expected volume of Canadian halibut consumption in 1985, and the U.S. import requirements, will exceed the available supplies in Canada. The table below estimates that if Canada wanted to supply the total U.S. import requirements, it would need more than double its halibut catch.

Table 34 - MARKET POTENTIAL FOR CANADIAN HALIBUT, 1985

(thousand metric tons, product weight)

	<u>DRESSED</u>	<u>FILLETS</u>	<u>BLOCKS</u>	<u>CURED</u>	<u>TOTAL</u>
Canada	3.4	-	-	-	3.4
U.S.A.	7.6	-	-	-	7.6
TOTAL (product weight)	11.0	-	-	-	11.0
FACTOR	1.35				
TOTAL (round weight)	14.9				14.9
MAXIMUM CATCH PROJECTION (round weight)					7.0
DEFICIENCY (round weight)					7.9

<sup>1/</sup> Estimated

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## CANADIAN GROUND FISH EXPORTS - 1978

(metric tons, product weight)

COUNTRY	FRESH/ FROZEN, ROUND/ DRESSED	FRESH/ FROZEN FILLETS	FROZEN BLOCKS	CURED	TOTAL
COD	2,749	16,030	31,696	15,344	65,819
U.S.	2,403	15,732	31,204	6,165	55,504
U.K.	43	114	25	-	182
France	50	63	348	2	463
West Germany	12	-	14	-	26
Italy	18	18	-	1,457	1,493
Portugal	89	-	-	44	133
Sweden	1	11	-	2	14
So. Africa	4	1	-	-	5
Japan	21	-	36	∅	57
Bermuda	4	22	-	88	114
Jamaica	43	-	-	500	543
Trinidad-Tobago	10	7	-	831	848
Puerto Rico	41	57	-	5,373	5,471
St. Pierre-Miq.	10	-	67	∅	77
Bahamas	-	3	-	-	3
Panama	-	2	-	-	2
Hong Kong	-	-	2	-	2
Australia	-	-	-	15	15
Leew.-Wind. Is.	-	-	-	116	116
Dominican Rep.	-	-	-	105	105
Haiti	-	-	-	11	11
Barbados	-	-	-	84	84
Spain	-	-	-	91	91
Cameroon	-	-	-	10	10
Greece	-	-	-	51	51
Brazil	-	-	-	381	381
Fr. West Indies	-	-	-	18	18
HADDOCK, HAKE POLLOCK & CUSK	3,560	8,178	1,977	5,472	19,187
Bulgaria	253	-	-	-	253
Japan	87	-	-	-	87
Australia	118	-	-	-	118
U.S.	3,049	8,150	1,977	2,798	15,974
Puerto Rico	31	19	-	1,102	1,152
Other	22	9	-	1,572	1,603



## CANADIAN GROUND FISH EXPORTS - 1978

(metric tons, product weight)

COUNTRY	FRESH/ FROZEN, ROUND/ DRESSED	FRESH/ FROZEN FILLETS	FROZEN BLOCKS	CURED	TOTAL
<u>HALIBUT</u>	1,904	-	1	-	1,905
U.S.	1,678	-	1	-	1,679
Other	226	-	-	-	226
<u>FLATFISH</u>	-	16,538	4,269	-	20,807
U.S.	-	16,111	4,269	-	20,380
Other	-	427	-	-	427
<u>OCEAN CATFISH</u>	-	792	-	-	792
U.S.	-	791	-	-	791
Other	-	1	-	-	1
<u>OCEAN PERCH</u>	-	15,858	571	-	16,429
U.S.	-	15,853	571	-	16,424
Other	-	5	-	-	5
<u>TURBOT</u>	-	5,854	1,590	-	7,444
U.S.	-	5,428	1,553	-	6,981
Other	-	426	37	-	463
TOTAL GROUND FISH <sup>1</sup> EXPORTS	8,213	63,280	40,104	20,816	132,413
TOTAL EXPORTS <sup>2</sup>	191,708	107,381	44,745	56,800	422,326 <sup>3</sup>
% GRESH/TOTAL	4%	59%	90%	37%	31%

<sup>1</sup> EXCLUDES "SEAFISH NES"

<sup>2</sup> EXCLUDES: ROES, MEAL, OIL, FOODS & FEEDS, SEAL SKINS

<sup>3</sup> INCLUDES 21,692 TONS OF CANNED PRODUCTS

## CANADIAN PER CAPITA GROUND FISH CONSUMPTION, 1985

(Kilogram, edible weight)

	FRESH/ FROZEN, ROUND/ DRESSED	FRESH/ FROZEN FILLETS	FROZEN BLOCKS	CURED	CANNED	TOTAL
Cod	0.26	0.72	0.36	0.02		1.36
Ocean Perch	0.04	0.46	0.02			0.52
Haddock	0.09	0.16	0.09			0.34
Pollock	0.02	0.10	0.31			0.43
Hake	0.04	0.04	0.10	0.01		0.19
Flatfish	0.04	0.44	0.04			0.52
Halibut	0.10					0.10
Turbot		0.08	0.02			0.10
Others					0.01	0.01
TOTAL	0.59	2.00	0.94	0.03	0.01	3.57

CANADIAN PER CAPITA GROUND FISH CONSUMPTION, 1985

(Kilogram, product weight)

	FRESH/ FROZEN, ROUND/ DRESSED	FRESH/ FROZEN FILLETS	FROZEN BLOCKS	CURED	CANNED	TOTAL
Cod	0.58	0.72	0.36	0.02		1.68
Ocean Perch	0.09	0.46	0.02			0.57
Haddock	0.20	0.16	0.09			0.45
Pollock	0.04	0.10	0.31			0.45
Hake	0.09	0.04	0.10	0.01		0.24
Flatfish	0.09	0.44	0.04			0.57
Halibut	0.13					0.13
Turbot		0.08	0.02			0.10
Others					0.1	0.1
TOTAL	1.22	2.00	0.94	0.03	0.1	4.20

CANADIAN GROUND FISH CONSUMPTION, 1985

(thousand tons, product weight)

	FRESH/ FROZEN, ROUND/ DRESSED	FRESH/ FROZEN FILLETS	FROZEN BLOCKS	CURED	CANNED	TOTAL
Cod	14.9	18.5	9.3	0.5	-	43.2
Ocean Perch	2.3	11.8	0.5			14.6
Haddock	5.1	4.1	2.3			11.5
Pollock	1.0	2.6	8.0			11.6
Hake	2.3	1.0	2.6	0.3		6.2
Flatfish	2.3	11.3	1.0			14.6
Halibut	3.4					3.4
Turbot		2.0	0.4			2.4
Others					0.3	0.3
TOTAL	31.3	51.3	24.1	0.8	0.3	107.8

U.S. ATLANTIC COAST GROUND FISH LANDING PROJECTIONS, 1985

(thousand metric tons, live weight)

	<u>Maximum Sustainable Yield</u>	<u>1978</u>	<u>1985</u>
Cod	50	39	50
Haddock	47	18	29
Flatfish	N.A.	52	55
Pollock	54	18	36
Ocean Perch	N.A.	16	23
Hake: White	N.A.	5	5
Red	40	2	30-40
Whiting (Silver hake)	98	23	23-45
		<hr/>	<hr/>
		173	268

U.S. PACIFIC COAST GROUND FISH LANDING PROJECTIONS, 1985

(thousand metric tons, live weight)

	<u>1978</u>	<u>1985</u>
Cod	5	5
Flatfish	28	28
Hake	3	91
Ocean Perch	2	2
Pollock	<u>1</u>	<u>1</u>
	39	127

U.S. ALASKA GROUND FISH LANDING PROJECTIONS, 1985 AND 1990  
 (thousand metric tons, live weight)

	Maximum Sustainable Yield	1978	1985		1990
			(1)	(2)	
Cod	150	0	54	37	75
Ocean Perch	250	-	94	63	125
Alaska Pollock	1,450	0	290	191	383
Flatfish	276	0	75	51	102
Halibut	8	8	8	8	8
	<u>2,134</u>	<u>8</u>	<u>521</u>	<u>350</u>	<u>693</u>

(1) Assuming that 75 percent of the 1990 landing target will be achieved.

(2) Assuming that 50 percent of the 1990 landing target will be achieved.

U.S. GROUND FISH LANDING PROJECTIONS, 1985

(thousand metric tons, live weight)

	1 9 7 8				1 9 8 5			
	<u>Atlantic</u>	<u>Pacific</u>	<u>Alaska</u>	<u>Total</u>	<u>Atlantic</u>	<u>Pacific</u>	<u>Alaska</u> <sup>1/</sup>	<u>Total</u> <sup>1/</sup>
Cod	39	5	0	44	50	5	54	109
Flatfish	52	28	0	80	55	28	75	158
Haddock	18	-	-	18	29	-	-	29
Hake	30	3	-	33	75	91	-	166
Halibut	0	-	8	8	0	-	8	8
Ocean Perch	16	2	-	18	23	2	94	119
Pollock	18	1	0	20	36	1	290	327
	<u>173</u>	<u>39</u>	<u>8</u>	<u>221</u>	<u>268</u>	<u>127</u>	<u>521</u>	<u>916</u>

<sup>1/</sup> Assuming that 75 percent of the 1990 landing target will be achieved. In case of a 50 percent catch level in the Alaskan fisheries the Alaska catch total would be 350,000 tonnes and the U.S. total 745,000 tonnes.



## PROJECTED U.S. GROUND FISH CONSUMPTION, 1985

(thousand metric tons, product weight)

	<u>1978</u>	<u>1985</u>
<u>FILLETS</u>		
Cod	76.3	111.3
Haddock	22.5	31.8
Flatfish	41.0	57.7
Turbot	18.6	26.2
Pollock	13.4	18.9
Ocean Perch	25.4	36.3
TOTAL	<u>197.2</u>	<u>282.2</u>
<u>BLOCKS</u>		
Cod	93.6	131.5
Haddock	13.5	18.1
Flatfish	5.6	6.8
Turbot	2.2	2.3
Pollock	34.8	45.4
Whiting	17.5	27.2
Other	<u>18.6</u>	<u>22.7</u>
TOTAL	185.8	254.0
TOTAL GROUND FISH	<u>383.0</u>	<u>536.2</u>

FORECAST OF TOTAL COD IMPORT REQUIREMENTS IN THE CARIBBEAN, SOUTH AND CENTRAL AMERICA

Country & Product	Average 1976 & 1977 metric tonnes	Forecast 1985 metric tonnes	Rationale
Argentina			
- dried salted	202	50	Decline from 385 m.t. in 1974 due substitute domestic salted ling. Argentina statistics record salted cod imports as 40 and 47 m.t. for 1976 and 1977 compared to an average for 1976/77 from Norwegian statistics of 202 tonnes.
Bahamas			
- frozen, whole, dressed	3	5	Modest outlook.
- frozen fillets	4	6	
Barbados			
- dry salted	150	240	Assumes better servicing but marginal economic growth.
- boneless, salted	10	12	
Bermuda			
- boneless, salted	64	200	11 m.t. imported in 1977. Propects limited. Moderate growth. 99 tonnes imported in 1977, assumes better supply will provide better service by Canadian exporters.
- frozen, whole, dressed	4	15	
- frozen fillets	22	33	
Brazil			
- dried salted	7,233	15,000	Active market promotion for Canadian salted cod and displacement of Norwegian ling which is currently about 3300 m.t. from Norway. Favourable exchange rate, barter deals and/or cooperative arrangements. Alternately in round dressed frozen.
- wet salted	-	7,000	
Colombia			
- dry salted	27	30	Very little prospect.
Costa Rica			
- dry salted	3	3	Small ethnic demand.
Dominican Republic			
- dry salted	178	600	Heavy supply and better servicing by Canadian exporters. There have been shortages of cod in this market since 1976. Market imported over 900 m.t. of salted hake and pollock in 1976 and 1977 probably due to the cod shortage.
- boneless salted	10	12	
El Salvador			
- dry salted	5	6	Modest outlook.

Country & Product	Average 1976 & 1977 metric tonnes	Forecast 1985 metric tonnes - (Productweight)	Rationale
French West Indies - dry salted	111	300	Assumes marketing effort including marginal displacement of salted ling imports, i.e. 439 m.t. in 1977.
Haiti - dry salted - frozen, whole, dressed	196 68	225 100	Assumes better servicing but limited consumer ability to buy.
Honduras - dry salted	75	125	Assumes marketing effort.
Jamaica - dry salted - frozen, dressed, whole	850 43	2,500 500	Improved economic conditions and 1155 m.t. imported in 1977. Also reciprocal trade deals required. Based on capacity for further processing.
Leeward Islands - dry salted	150	350	Assumes better servicing, small fish market and displacement 200 m.t. of hake and pollock.
Mexico - dry salted - frozen, whole, dressed	580	2,000 1,000	In 1978, 1200 m.t. salted fish imported of which 85% was ling and 15% cod. Forecast assumes hard sell by Canadian exporters and promotion. Mexican employment from oil should increase numbers of consumers with capacity to buy. Improved economy and growing demand and better service by Canadian exporters. Mexico imported 139 m.t. stock fish (cod/other) from Norway in 1977. There is a possibility that dried salted cod could substitute for a segment of this demand but this is not considered in the forecast, since it would require a consumer survey to determine the prospect.
Netherlands Antilles - dry salted	5	50	Assumes marketing effort and displacement of salted ling imports, i.e. 171 m.t. in 1977.
Paraguay - dry salted	6	10	Very little prospect.

Country & Product	Average 1976 & 1977 metric tonnes	Forecast 1985 metric tonnes - (Productweight)	Rationale
Puerto Rico			Assumes this market already well serviced and estimates moderate growth in consumption of 4% per year.
- dry salted	4,800	5,800	
- boneless salted	330	450	
- wet salted	20	35	
- frozen, whole, dressed	40	60	
- frozen fillets	40	60	
Surinam			Very little prospect.
- dry salted	25	30	
Trinidad			Heavy supplies and better servicing of market. Imports of hake and pollock about 150 m.t. per year.
- dry salted	850	2,000	Limited demand seen.
- wet salted	20	30	Limited demand seen.
- boneless salted	45	60	Limited demand seen.
- frozen, whole, dressed	10	15	Limited demand seen.
Venezuela			Poor prospect for removal of tariff of 100%.
- dry salted	1,240	1,000	Based on stated interest of importers is cod for further processing and duty of 20%. Domestic salted fish surplus to domestic consumption would be exported to Santo Domingo and Trinidad.
- frozen, dressed, whole	-	1,000	
<u>1985 Total Cod Import Requirements</u> <u>Converted to Round Weight Equivalent and Rounded</u>			
TOTAL - dried salted	16,604	30,319	at 4.0 = 121,000 tonnes
- wet salted	40	7,065	at 2.3 = 16,000 tonnes
- boneless salted	449	734	at 4.3 = 3,000 tonnes
- frozen, whole, dressed	168	2,695	at 1.2 = 3,000 tonnes
- frozen fillets	66	99	at 3.2 = 300 tonnes

143,300 tonnes total round weight requirement  
projected for 1985

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