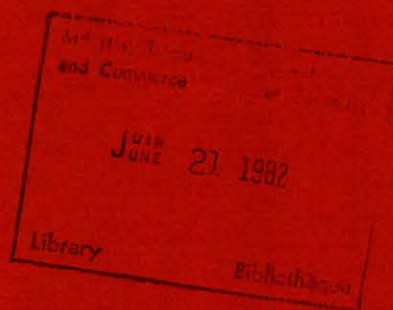


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ANNEX TO THE WORLDWIDE FISHERIES MARKETING STUDY: PROSPECTS TO 1985

DENMARK



Government
of Canada

Gouvernement
du Canada

Fisheries
and Oceans

Pêches
et Océans

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

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D R A F T

Annex to the Worldwide Fisheries Marketing Study:
Prospects to 1985

D E N M A R K

Study team:

P.M. Jangaard, Department of Fisheries & Oceans.
R. Bulmer, Canadian Association of Fish Exporters.
P. Ingvarsson, Caribou International Limited.
Mrs. Jade Neergaard)
E.C.H. Shelly) Canadian Embassy, Copenhagen

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

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E. Wong
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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 a new dynamic equilibrium situation is reached. However, in the midst of this re-adjustment, a new trade pattern is emerging -- some net exporting countries are now importing and vice versa. In the longer term, some countries will experience shortages of supply and others will have a surplus. Fortunately, Canada is amongst the latter group.

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

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

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

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

Ed Wong

Marketing Services Branch.
Marketing Directorate.
Fisheries Economic Development and Marketing.
Department of Fisheries and Oceans.
October, 1981.
Ottawa

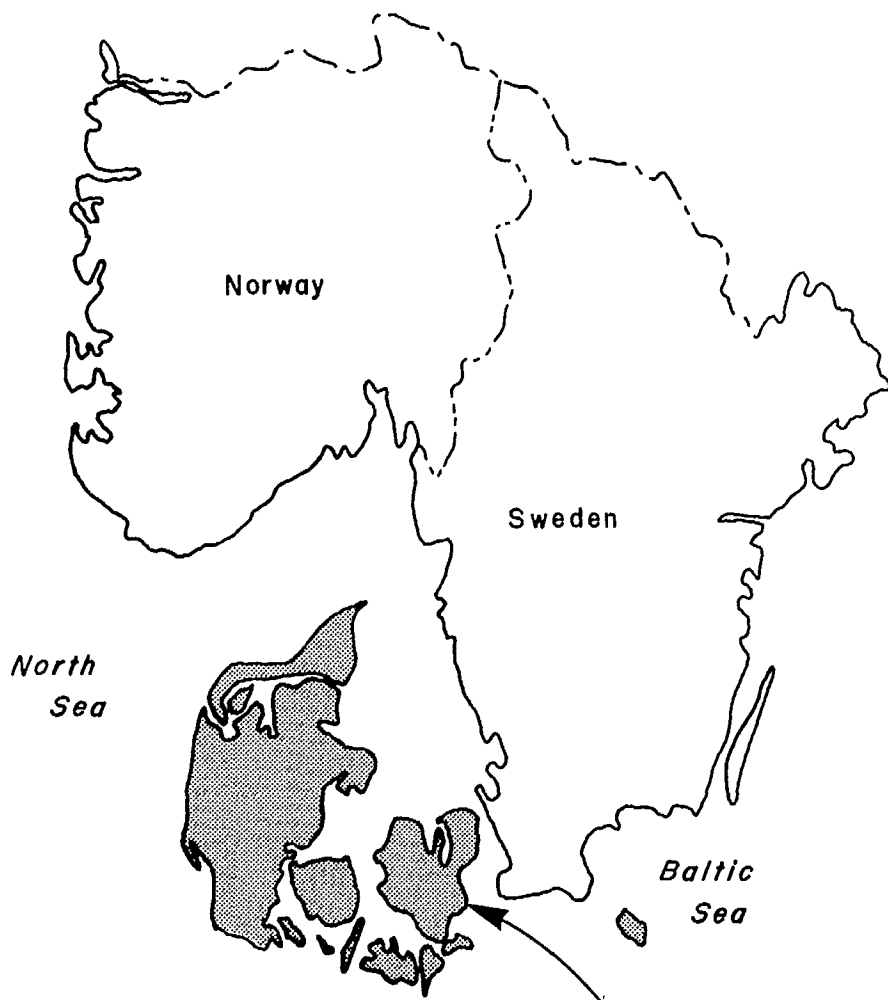
WORLDWIDE FISHERIES MARKETING STUDIES

DENMARK

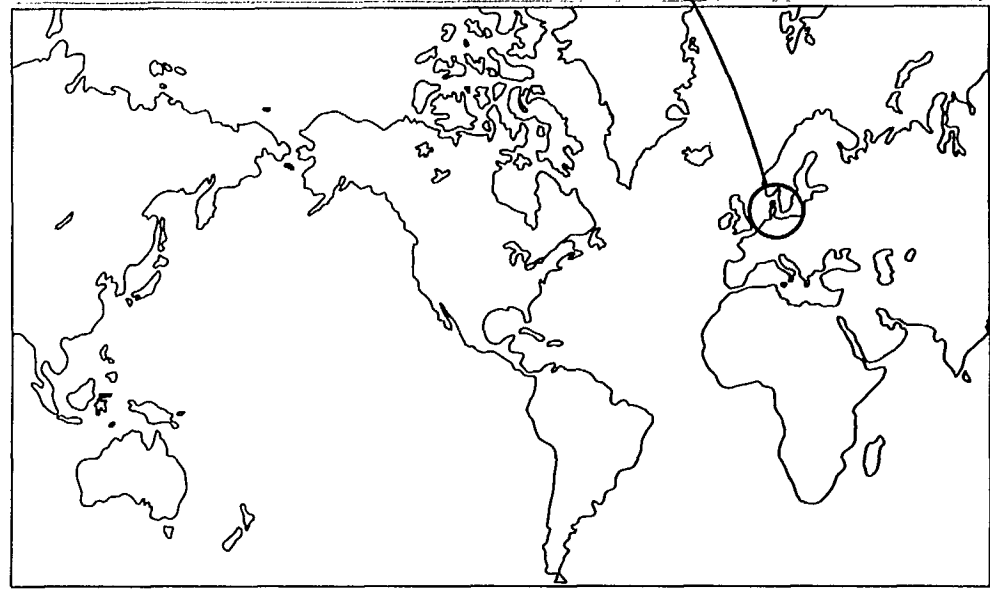
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DENMARK



INDEX MAP



A. INTRODUCTION

Denmark is a small country of some 43 000 square kilometres, including the Jutland Peninsula, the principal islands of Zealand and Funen, and a large number of smaller islands. The country is joined to the continent of Europe by a 69 kilometres frontier with the Federal Republic of Germany (FRG).

Although the country itself is small, the largest island in the world, Greenland, with area of 2.2 million square kilometres and a population of 50 000, is a province of Denmark. So are the Faeroe Islands, with an area of 1 400 square kilometres and a population of 42 000.

Both Greenland and the Faeroe Islands have important fisheries, but since both also have extensive home rule, their catches are not included in Danish landing statistics. Catches landed in Denmark by Faeroese vessels are listed as imports or landings by foreign vessels.

Denmark is a major fishing nation and ranks first in the European Economic Community (EEC) with respect to tonnage landed. The Danes are also important processors and traders, and considerable quantities of fish are landed by foreign vessels or imported into Denmark where they are processed and re-exported. Denmark is the largest fish exporter in the EEC and fourth in the world after Canada, the United States, and Norway. During 1979, nearly 65% of Danish fishery exports went to other EEC countries and about 20% to European Free Trade Area (EFTA) countries. Sweden and Switzerland were the most important markets in this latter group of countries. Denmark is therefore a major competitor of Canada for fishery products, especially in Europe.

Denmark is in a very favourable position geographically, adjacent to important fishing grounds in the North Sea, Kattegat, Skagerrak, and the Baltic Sea, and close to most major markets in Europe. Thanks to a sophisticated market organization and distribution network, the Danes are able to export high-quality fish in the best condition. As fish supplies have declined, prices have increased, keeping the Danish industry viable.

Traditionally, the Danish fishing industry has been sustained by relatively small multi-purpose family-operated vessels, fishing mainly within the northeast

Atlantic. In this respect, the Danish fleet has not been as severely affected by 200-mile jurisdictional closures as those of the UK, FRG, and France, which formerly relied on large, distant-water trawlers for a major share of their landings. Some large Danish shrimp trawlers are having problems, as Greenlanders are taking more and more of the quotas off their own shores. Recently, the increase in fishing costs and decrease in fish stocks, has affected the profitability of a larger number of trawlers.

Financial support to the fishing industry over the past few years has been very limited compared to some other European countries and includes, grants up to 25% of the cost of improving fish handling onboard vessels and some support for new fisheries and processes. Due to declining fish quotas and therefore excess catching capacity, some 25 million Danish kroner (C\$5.25 million)* was made available in 1979 to fishermen willing to tie up their vessels for at least 90 successive days. In 1981, 50 million kroner could be granted for the withdrawal of vessels from fishing. The boats would be scrapped, used outside the industry or sold abroad.

Denmark joined the EEC as a full member on January 1, 1973, after a binding national referendum showed a majority in favor. The other Scandinavian countries, Norway, Sweden, and Finland, chose not to join the EEC but conducted separate negotiations with the Community on trade tariffs. They concluded their negotiations with agreements that secured the duty-free trade principles within EFTA. Therefore Denmark has maintained a good trading position and has been able to preserve very valuable Scandinavian markets.

As a member of the EEC, Denmark receives, and Danish firms have access to, loans and other forms of support from the European Investment Bank, the EC Agricultural Fund, the European Social Fund, and the European Fund for Regional Development.

Denmark has co-operated on foreign exchange policy for number of years with other European nations, particularly the FRG.

The Danish krone has shown stability and has gradually adjusted to the inflation rate in Europe.

* During 1980, on average, 1 Danish krone was equivalent to Canadian \$0.2075.

Although the EEC has brought many advantages to the Danish fishing industry, the lack of a common fisheries policy has adversely affected many Danish fishermen. It is very difficult to get individual countries to agree on quotas and regulations, and many stocks continue to be overfished as a result. Restrictions imposed on Danish fishermen as a result of action by the UK adversely affected an important segment of the fleet. For details about 'the pout box', see Section B.

B. SUPPLY

Current and Expected Domestic Supplies to 1985

Quantities in tonnes and landed values in Danish Kroner of fish landed in Denmark by both Danish and foreign fishermen in 1978 and 1979 are shown in Table 1. In this table the catches utilized for meal or for animal or fish feed ("industrial" landings) are not broken down by species. Table 2 shows Danish landings between 1975 and 1979 by species only. Since this table does not differentiate between industrial and food landings, the tonnages do not always agree with those in Table 1.

The largest declines over the past six years can be found in the herring landings, both for human consumption and for industrial use. This has been partly offset by an increase in the catch of sand eels, but total landings of industrial fish have been declining for several years. This is mainly due to restrictions imposed on Danish fishermen in areas where large industrial catches were traditionally taken. One such restricted area off the Scottish coast, known as the "pout box", has been especially controversial. An area was closed to the Danish industrial fishing fleet in 1977 by the EC Commission on the insistence of Great Britain in order to protect juvenile food fish, especially haddock and whiting. These and other valuable species could at times represent a sizeable bycatch to the main catches of Norway pout sought by the fleet. However, the EC court ruled in July 1980, that Britain did not have enough documented evidence to justify this closure, and Danish fishermen threatened to sue Britain for lost catches. In spite of these developments, a compromise agreement was reached and a modified closed area came into force in November, 1980.

Since the Danish fish meal industry is concentrated in the west coast city of Esbjerg, the impact of declining catches has been more severe here than in the ports of Skagen, Hirtshals and Hanstholm in the north.

The supply situation and biological out-look for the most important species are shown below:

5
TABLE 1

Danish fish landings

1. By Danish fishermen in Danish ports

Species	1978		1979	
	Quantity (tonnes)	Value (000 D.kr.)	Quantity (tonnes)	Value (000 D.kr.)
European plaice	49 010	216 100	50 130	261 590
European flounder	3 320	6 090	2 690	5 460
Common sole	940	31 440	630	24 190
Atlantic cod	125 440	471 520	127 110	488 030
Haddock	7 600	34 530	7 570	37 020
Pollock (saithe)	8 730	32 710	8 410	35 060
Herring	46 030	142 460	53 650	161 910
Mackerel	13 520	21 630	16 580	25 490
Garfish	1 080	1 680	860	1 380
Eel	2 340	75 400	1 830	61 630
Atlantic salmon	790	28 450	740	33 950
Shellfish	4 930	76 860	4 730	87 830
Other Species	17 640	118 180	20 230	143 650
For human consumption:	281 370	1 257 050	295 160	1 367 190
For meal or animal feed:	1 368 400	666 380	1 339 770	574 590
Mussels etc	50 320	6 220	58 300	7 870
Total 1.	1 700 090	1 929 650	1 693 230	1 949 650

2. By Danish fishermen in foreign ports

Species	1978		1979	
	Quantity (tonnes)	Value (000 D.kr.)	Quantity (tonnes)	Value (000 D.kr.)
European plaice	930	5 030	1 370	7 720
Atlantic cod	6 070	27 750	5 810	30 940
Atlantic salmon	70	2 080	50	2 190
Other Species	3 810	43 630	1 740	13 150
Total for human consumption:	10 880	78 490	8 970	54 000
For meal or animal feed	4 250	1 940	1 100	670
Total 2.	15 130	80 430	10 070	54 670
Total landings by Danish fishermen (1 + 2)	1 715 220	2 010 080	1 703 300	2 004 320

3. By foreign fishermen in Danish ports

Herring	20 470	70 270	18 400	59 580
Mackerel	31 730	48 090	24 000	38 410
Other species	17 270	72 850	18 480	83 190
Total for human consumption	69 470	191 210	60 880	181 180
For meal or animal feed	42 360	21 960	53 130	24 150
Total 3.	111 830	213 170	114 010	205 330

Source: Danish Ministry of Fisheries

TABLE 2
DENMARK: Landings By Species

		1975	1976	1977	1978	1979
		TONNES				
FRESHWATER FISHES NEI		161	105	111	108	113
EUROPEAN EEL	ANGUILLA ANGUILLA	3 293	2 926	2 381	2 379	1 860
ATLANTIC SALMON	SALMO SALAR	1 848	1 685	1 214	950	1 049
TROUTS NEI	SALMO SPP	16 294	15 092	14 576	15 964	16 974
EUROPEAN SMELT	OSMERUS EPERLANUS	51	55	47	68	68
ATLANTIC HALIBUT	HIPPOGLOSSUS HIPPOGLOSSUS	62	62	66	64	45
EUROPEAN PLAICE	PLEURONECTES PLATESSA	40 824	47 927	49 060	52 232	54 258
WITCH FLOUNDER	GLYPTOCEPHALUS CYNOGLOSSUS	726	616	536	560	547
COMMON DAB	LIMANDA LIMANDA	4 320	3 712	3 828	4 362	5 551
LEMON SOLE	MICROSTOMUS KITT	784	800	850	1 151	1 592
EUROPEAN FLOUNDER	PLATICHTHYS FLESUS	5 484	4 044	3 719	5 156	4 256
COMMON SOLE	SOLEA SOLEA	1 145	1 001	868	991	699
BRILL	SCOPHTHALMUS RHOMBUS	285	298	429	343	341
TURBOT	PSETTA MAXIMA	632	822	882	1 153	1 539
TUSK (=CUSK)	BROSME BROSME	3	4	20	47	84
ATLANTIC COD	GADUS MORHUA	138 850	164 186	153 508	133 004	136 583
LING	MOLVA MOLVA	696	935	1 022	1 214	1 204
HADDOCK	MELANOGRAMMUS AEGLEFINUS	37 945	54 400	26 978	13 093	12 429
SAITHE (=POLLOCK)	POLLACHIUS VIRENS	37 957	68 816	20 969	10 465	10 964
NORWAY POUT	TRISOPTERUS ESMARKII	267 083	285 352	261 496	189 547	252 129
BLUE WHITING (POUTASSOU)	MICROMESISTIUS POUTASSOU	--	7 560	34 816	78 302	81 679
WHITING	MERLANGIUS MERLANGUS	83 105	138 559	65 051	64 898	62 356
EUROPEAN HAKE	MERLUCCIIUS MERLUCCIIUS	2 302	1 939	1 651	1 789	1 770
DEMERSAL PERCOMORPHS NEI	PERCIFORMES	318	263	336	211	--
ATLANTIC WOLFFISH (=CATFISH)	ANARHICHAS LUPUS	1 243	952	1 073	892	900
SANDEELS (=SANDLANCES)	AMMODYTES SPP	372 041	446 165	680 363	670 779	507 487
LUMPFISH (=LUMPSUCKER)	CYCLOPTERUS LUMPUS	904	733	839	418	654
MONK (=ANGLERFISH)	LOPHIUS PISCATORIUS	459	585	568	473	692
GARFISH	BELONE BELONE	1 370	1 582	1 692	1 736	1 168
ATLANTIC HORSE MACKEREL	TRACHURUS TRACHURUS	--	--	2 330	3 905	5 589
ATLANTIC HERRING	CLUPEA HARENGUS	216 662	107 252	93 589	66 658	63 921
SPRAT	SPRATIUS SPRATIUS	423 926	363 247	259 565	288 906	361 091
ATLANTIC MACKEREL	SCOMBER SCOMBRUS	9 908	27 998	22 536	26 754	28 903
PORBEAGLE	LAMNA NASUS	265	233	289	112	72
PICKED (=SPINY) DOGFISH	SQUALUS ACANTHIAS	2 705	1 758	1 726	2 072	2 249
SKATES AND RAYS NEI	RAJIFORMES	94	102	94	117	125
MARINE FISHES NEI		58 233	111 464	38 245	40 235	52 661
EUROPEAN LOBSTER	HOMARUS GAMMARUS	14	12	14	16	16
NORWAY LOBSTER	NEPHROPS NDRVEGICUS	2 613	1 643	1 265	1 451	1 809
NORTHERN DEEPWATER PRAWN	PANDALUS BOREALIS	3 277	5 443	7 455	5 817	3 329
COMMON PRAWN	PALAEON SERRATUS	204	175	214	159	27
COMMON SHRIMP	CRANGON CRANGON	330	465	720	1 419	1 252
BLUE MUSSEL	MYTILUS EDULIS	27 798	37 871	47 552	46 756	56 680
STARFISH	ASTERIAS RUBENS	823	2 792	1 837	3 568	1 705
TOTAL		1 767 039	1 911 637	1 806 381	1 740 294	1 738 420

Source: FAO, Yearbook of Fishery Statistics, Rome, Italy, various volumes.

2. Demersal Species

- a) Cod - (Torsk) Danish vessels take cod in several areas including the eastern Baltic (the large island of Bornholm belongs to Denmark), the western Baltic, the Belt, Kattegat, Skagerrak, and the North Sea. Landings are expected to remain stable or to increase (127 000 tonnes in 1979) as stocks are in good condition.

In the North Sea, several good year classes have resulted in a biomass higher than for many years. The recommended total allowable catch (TAC) is 200 000 tonnes, which could be revised upward. The Kattegat and Skagerrak stocks are also good, with an excellent 1979 year class that will influence the outlook for future years. The Baltic cod population is considered to consist of two stocks with the dividing line approximately at Bornholm Island. The cod stocks in the Baltic are considered to be in good condition.

- b) Haddock (Kuller) - The Danish haddock fishery for human consumption had a yield of about 8 000 tonnes in 1978 and 1979. The high landings shown in the FAO statistics (Table 2) reflect the catches of juvenile haddock taken in the industrial fishery (54 000 tonnes in 1976). No substantial changes in the availability of haddock to Danish fishermen are anticipated in the near future.
- c) Pollock (Saithe) (Mörksej) - Pollock landings by Danish fishermen were about 9 000 tonnes in 1979, similar to 1978. No substantial changes were expected in 1980-81. The Danish fishery for haddock and pollock is concentrated in the waters off northern Denmark (Skagen).

- d) European plaice (Rödspaette) - Plaice is second only to cod as the most valuable species caught by Danish fishermen, and quantities landed have been increasing since 1974 to more than 50 000 tonnes in 1979. The fishery is concentrated in the North Sea and stocks are considered to be in good condition. Supplies are expected to be good for the next year or two, although the EEC initially proposed considerably lower quotas for Denmark in 1981.

- e) Dover sole (Tunge) - Although relatively small quantities of sole are landed in Denmark (630 tonnes in 1979), the value is considerable due to a high unit price of 38 kroner per kilogram in 1979 (\$3.60 per pound). The stocks are considered to be at a low level, reportedly as a result of heavy fishing by Dutch beam trawlers, and the outlook is uncertain.

- f) Other flatfish - A number of other flatfish species are also landed in Denmark, especially common dab, European flounder, lemon sole and turbot. Catches have increased somewhat, and no large variations in recent trends are expected.

3. Pelagic Species

- a) Herring (Sild) - The North Sea herring stocks are depleted, and even though there has been no fishing for several years, recovery is very slow. There was no fishery in 1980, and the outlook for 1981 was not very good. In spite of a limited opening of the Scottish and Channel herring fisheries, Danish landings from these areas were low.

Although the statistics in Table 2 indicate a dramatic decrease in Danish herring landings between 1973 and 1978, the bulk of this was made up of industrial landings. Food herring landings by Danish fishermen from the areas between Denmark and Norway/Sweden (Skagerrak and Kattegat) and from the Baltic was about 54 000 tonnes in 1979.

The stocks in the Kattegat and Skagerrak are also at a low level, but a fishery was allowed in 1980 with a TAC of 45 000 tonnes. Danish fishermen caught about 18 000 tonnes in Kattegat and about 4 500 tonnes in Skagerrak in 1979. Recent reports indicate that Danish and Swedish

fishermen might have caught as much as 30 000 tonnes over their quotas in 1980.

The increase in Danish herring landings for 1979 compared with 1978 was a result of increased catches in the Baltic and the Belt area. Traditionally, catches by Danish fishermen in these waters have ranged between 20 000 and 30 000 tonnes as compared to the TAC of 380 000 to 400 000 tonnes. The Soviet Union, Poland, and East Germany take about 250 000 tonnes of this; Sweden, 50 000 tonnes, and Finland, 80 000 tonnes.

The shortfall of herring from the North Sea for Danish processing plants has been partly filled by imports, especially from Sweden, which supplied over 77 000 tonnes in 1980. Many of these fish were small compared with those traditionally supplied by Canada, Iceland or Norway. However, German processors have by now adapted their processing equipment and products to smaller fish. It is expected that imports from Sweden will continue at a high level until the North Sea fishery is re-opened.

- b) Mackerel (Makrel) - Total landings of mackerel by Danish fishermen in 1979 were about 17 000 tonnes compared to about 13 000 tonnes in 1978. Danish fishermen increased their mackerel landings as a result of the herring ban in the North Sea, since only 3 900 tonnes were landed in 1974. Landings by foreign vessels in 1979 were about 24 000 tonnes and imports about 7 500 tonnes. By far the largest supplies came from Faeroese vessels landing in Danish ports.

The North Sea mackerel stocks are seriously depleted and biologists recommended a zero TAC for 1981. The other important stock, which is found to the west of the British Isles, is also declining as total landings have been running as high as 507 000 tonnes (1978). Danish fishermen have diverted some effort to this stock since 1977.

4. Anadromous Species

- a) Atlantic Salmon (Laks) - The Danish fishery for Atlantic salmon is chiefly carried out in the eastern Baltic and yielded about 900 tonnes in 1979. In the middle 1970'S, catches were about twice as high as Danish fishermen

also fished the waters off Greenland and Norway. No increase in Danish landings is anticipated over the next few years as the salmon production in the Baltic Sea is largely dependent on stocking in Swedish rivers.

Atlantic salmon is a very high-priced commodity and considerable quantities are imported from Greenland, Norway, and Sweden. Lower-priced Pacific salmon is imported from Canada and the United States.

- b) Trout (Orred) - Denmark has a large pond-trout industry and produced about 16 000 tonnes of rainbow trout in 1978. Fish from the large industrial fish landings is used as feed. The trout are mainly marketed as portion fish, whereas the growing Norwegian trout seawater rearing industry markets much of its fish as "fjord salmon", weighing one to three kilograms.

5. Crustaceans and Molluscs

- a) Shrimp (Rejer) - Danish fishermen landed about 2 800 tonnes of pink shrimp from home waters and about 1 500 tonnes from distant waters in 1979, down from 1978. The shrimp stocks in the Skagerrak off northern Denmark have been fairly stable over the past few years, but most of the demand is covered by imports.
- b) Mussels (Muslinger) - Danish production of mussels has been steadily increasing and was well over 50 000 tonnes in 1979 or double the quantities produced in the early 1970's. Unless hit by disasters such as extreme weather, pollution, or disease, the production is expected to remain high.
- c) Norway lobsters (nephrops) Dybvandshummer) - Danish landings of this high-value shell-fish have been between 1300 and 1800 tonnes in the past three years, with the landed value in 1979 averaging close to 32 kroner per kilogram (C\$3.00 per lb.). Little is known about the factors influencing the stocks, and future catches are difficult to predict.

C. DEMAND

The Danish demand for fish is to a large extent dependent on the export market situation, since a high percentage of Danish catches and imports are processed in Denmark and re-exported. This is especially noticeable for herring, which is imported fresh, mostly from Sweden, filleted and re-exported to the FRG and other EEC countries.

However, the Danes are also large consumers of fishery products, and Danish statistics show that consumption was 21.7 kilograms per capita in 1977, about the same as in 1970, as compared with 6.9 kilograms in Canada. In live-weight terms, consumption of fish and shellfish was 34.6 kilograms per capita in 1975, as compared with 16.6 kilograms for Canada, according to the United Nations Food and Agriculture Organization (FAO). The population was about 5.11 million in 1979, and as much as 110 000 tonnes of fishery products are therefore consumed annually in Denmark. The population is nearly static and is expected to grow only to about 5.2 million by 1985.

Danish consumers are very quality-conscious and willing to pay premium prices, particularly for fresh fish. Thus cheaper frozen imports are more difficult to market. Several Canadian processors over the past few years have experienced difficulties in satisfying the tough quality standards of Danish customers. Although Denmark has gone through a period of economic difficulties over the past two years, consumer disposable income has not declined enough to have an effect of consumption of fishery products.

D. DEMAND-SUPPLY BALANCE

As noted earlier, Denmark is not only an important fishing nation and a heavy consumer of fishery products, but also a major processing and trading country. Since Danish landings of some species have declined over the past few years, fresh fish has been imported from neighbouring countries to keep processing plants going. Imports of frozen and other processed products have also increased.

Tables 3 and 4 show that both exports and imports of fishery products have increased over the past three years in terms of tonnage and especially in terms of value.

1. Exports

An examination of the demand and supply balance for the most important products shows that in many cases almost the total supply is exported. Exports greatly exceed imports, and make Denmark the fourth largest fish exporter in the world. Exports are shown in Table 3.

In terms both of value and tonnage, the most important exports are cod, herring, trout, salmon and shrimp. In terms of value, cod is the leading export valued at over 1 030 million kroner in 1980, and accounting for 30% of the fresh, chilled and frozen category. Herring products were second, valued at about 600 million kroner in 1980. Exports of herring have been maintained in spite of problems in the North Sea herring fishery.

Other important exports are shrimp and salmon. Shrimp exports were valued at 500 million kroner in 1980 and salmon at 248 million kroner.

Many of these species are of considerable importance to Canadian exporters and a detailed demand-supply balance by species is discussed in section E.

2. Imports

Denmark is a large importer of fishery products, although many of these are later re-exported. In 1980, total imports of fishery products were 244 000 tonnes valued at 1 804 million kroner (Table 4).

TABLE 3

Denmark: Exports of fishery products for human consumption by major variety

Variety	1978		1979		1980	
	tonnes	000 kr	tonnes	000 kr	tonnes	000 kr
<u>Fresh, chilled or frozen (ex. fillets)</u>						
Salmon	2 068	70 061	1 980	86 155	1 946	99 898
Trout	14 631	242 680	15 927	284 168	14 923	296 889
Eels	2 948	107 374	2 800	108 422	2 840	116 364
Herring	22 704	135 400	28 155	156 241	28 962	158 572
Sprat	1 722	4 153	706	1 825	322	1 165
Mackerel	16 017	49 603	20 960	60 003	17 997	56 157
Plaice	11 643	74 458	11 726	82 502	10 266	82 566
Haddock	5 501	37 475	4 918	37 486	4 985	39 604
Cod	29 103	247 741	33 310	284 644	32 190	322 152
Other flatfish	7 585	106 328	7 825	87 653	6 879	134 723
Saithe	5 407	35 948	6 001	42 140	5 984	50 934
Sharks	2 028	25 485	2 040	28 067	1 697	31 452
Other	8 369	96 062	10 245	105 043	7 579	109 556
<u>Total:</u>	<u>129 726</u>	<u>1 232 768</u>	<u>146 593</u>	<u>1 364 349</u>	<u>136 570</u>	<u>1 500 032</u>
<u>Fresh, chilled or frozen fillets</u>						
Cod	34 950	436 730	34 753	437 864	41 383	581 331
Haddock	1 240	14 707	1 181	16 103	1 556	20 636
Saithe	3 131	26 507	2 917	24 500	2 211	23 038
Herring*	33 308	219 720	40 402	256 191	45 082	315 474
Other	17 216	228 095	22 990	338 108	22 793	352 924
<u>Total</u>	<u>89 845</u>	<u>925 759</u>	<u>102 243</u>	<u>1 072 766</u>	<u>113 025</u>	<u>1 293 403</u>
* Includes some H & G herring.						
<u>Dried, salted or smoked</u>						
Salmon	1 215	91 906	1 336	115 269	1 482	147 955
Herring	1 086	10 063	2 039	18 598	3 014	27 216
Cod	4 747	53 473	8 813	96 892	8 599	127 008
Other	1 654	31 424	1 535	24 717	2 282	53 926
<u>Total</u>	<u>8 702</u>	<u>186 866</u>	<u>13 723</u>	<u>255 476</u>	<u>15 377</u>	<u>302 179</u>
<u>Shellfish</u>						
Shrimps	13 364	194 704	14 397	229 695	22 992	364 215
Nephrops	1 582	50 071	1 605	63 330	1 977	84 513
Mussels	1 352	1 570	5 963	4 268	8 657	8 155
Other	1 495	6 716	469	19 372	596	28 940
<u>Total</u>	<u>17 793</u>	<u>253 061</u>	<u>22 434</u>	<u>316 665</u>	<u>34 222</u>	<u>485 823</u>
<u>Fish preparations</u>						
Herring	4 231	52 799	5 652	68 832	4 640	96 875
Mackerel	5 918	66 931	6 859	78 060	8 602	112 500
Roe and Caviar	3 650	60 157	4 155	75 532	3 373	62 349
Other	12 557	192 786	14 207	216 222	16 467	313 520
<u>Total</u>	<u>26 356</u>	<u>372 673</u>	<u>30 873</u>	<u>438 646</u>	<u>33 082</u>	<u>585 244</u>
<u>Shellfish Preparations</u>						
Shrimp	2 858	119 395	2 705	132 454	2 285	133 285
Mussels	6 676	60 004	7 842	74 006	8 671	88 727
Other	500	13 336	170	14 939	370	23 949
<u>Total</u>	<u>10 034</u>	<u>192 735</u>	<u>10 717</u>	<u>221 399</u>	<u>11 326</u>	<u>245 961</u>
<u>TOTAL</u>	<u>282 456</u>	<u>3 163 862</u>	<u>326 583</u>	<u>3 669 301</u>	<u>343 602</u>	<u>4 412 642</u>

Source: Danish Export Statistics

Heading the list of imported products were 92 330 tonnes of fresh or frozen herring valued at over 307 million kroner. The biggest supplier by far was Sweden with 78 000 tonnes of fresh herring. Other suppliers were Norway (2 700 tonnes) and East Germany (4 500 tonnes).

The most valuable import in 1980 was 29 000 tonnes of shrimp and shrimp preparations valued at 624 million kroner. The main suppliers were the Faeroe Islands and Greenland (9 600 and 15 500 tonnes respectively).

Salmon imports were over 5 000 tonnes valued at 194 million kroner, with Canada and the United States supplying mainly Pacific salmon (1 400 and 675 tonnes respectively) and Greenland and Norway supplying Atlantic salmon (1 080 and 714 tonnes respectively).

TABLE 4

Denmark: Imports of fishery products for human consumption by major variety

Variety	1978		1979		1980	
	tonnes	000 kr	tonnes	000 kr	tonnes	000 kr
<u>Fresh, chilled or frozen (ex. fillets)</u>						
Salmon	4 199	114 143	4 797	160 208	5 093	193 701
Eels	1 649	51 340	1 490	47 485	1 473	53 838
Herring	69 075	236 322	79 344	252 256	92 330	307 793
Sprat	3 457	5 755	1 509	3 189	548	1 610
Mackerel	40 241	64 483	33 389	53 859	46 748	84 839
Plaice	4 966	21 887	7 408	40 764	11 490	63 559
Haddock	1 718	7 544	1 765	8 688	1 921	7 789
Cod	12 667	51 283	15 593	60 467	19 740	80 572
Saithe	7 241	22 040	8 379	27 477	5 587	24 950
Sharks	1 974	15 127	1 783	15 928	1 503	16 998
Other	10 326	67 964	6 588	58 874	6 994	72 449
Total:	157 513	657 888	162 045	729 195	193 427	908 098
<u>Fresh, chilled or frozen fillets</u>						
Cod	1 286	13 478	428	5 337	1 429	17 212
Other	2 261	21 158	2 680	23 457	4 203	35 501
Total	3 547	34 636	3 108	28 794	5 632	52 713
<u>Dried, salted or smoked</u>						
Herring	315	2 320	372	3 328	407	3 321
Cod	3 351	28 403	8 476	78 759	6 696	68 556
Other	1 715	21 090	1 468	18 679	2 195	27 353
Total	5 381	51 813	10 316	100 766	9 298	99 230
<u>Shellfish</u>						
Shrimps	11 584	134 026	11 887	137 664	21 310	274 539
Other	654	16 206	608	19 195	750	21 835
Total	12 238	150 232	12 495	156 859	22 060	296 374
<u>Fish preparations</u>						
Herring	2 877	25 444	1 391	13 058	1 139	13 250
Other	3 439	51 728	3 904	53 844	3 993	56 518
Total	6 316	77 172	5 295	66 902	5 132	69 768
<u>Shellfish Preparations</u>						
Shrimp	5 076	192 645	5 884	247 263	7 666	349 731
Other	593	17 858	542	23 014	542	27 787
Total	5 669	210 503	6 426	270 277	8 208	377 518
TOTAL	190 664	1 182 244	199 685	1 352 793	243 757	1 803 701

Source: Danish Import Statistics

E. OPPORTUNITIES FOR CANADIAN EXPORTS

1. The Danish Market

As noted previously, Denmark should be considered more as a competitor in the international market than as a potential growth market for Canadian products.

Nonetheless, the Danes have developed a sophisticated and efficient processing and marketing industry that relies increasingly on imported products for processing in Denmark and re-exporting to other countries.

This would appear to offer some potential for Canadian suppliers. In fact Danish companies have shown interest in setting up joint processing operations in Canada and in buying supplies of salted and frozen cod. Prospective exporters should be aware, though, that products sold to Denmark would be re-exported, and that over the long term there is better profit in direct sales to consuming countries.

Apart from that, the Danes are heavy consumers of fish. Canada already is a significant supplier of Pacific salmon. Given the country's taste for fish and its relative prosperity, there could well be prospects worth exploring for limited sales of luxury items such as shrimp, crab, lobster and some fish roe products.

Danish imports from Canada are shown in Table 5 and Canadian exports to Denmark are shown in Table 6. Discrepancies are due to live-weight versus product weight distinctions and time taken to make shipments from Canada to Denmark causing time periods to refer to different shipments.

2. Prospects by Species

- a) Cod - By tonnage and by value, (1 030 million kroner, \$170 million) cod products are the most important export items for the Danish fishing industry. A summary of the cod supply for the past two years is given in Appendix I.

The most significant development in frozen cod export sales was the shift away from the US market into the European market by Norway and Denmark. In 1979-80 cod landings in Norway have been declining and monetary returns for the limited supply was better in Europe in 1980 due to the declining value of the US dollar and a levelling of the prices there. At the same time there has been a strengthening of the salted cod market.

The data in Appendix I confirms this trend also for Denmark. There was a moderate increase in the Danish cod supply in 1979 due to higher landings and imports. Exports of both fresh cod and fresh cod fillets increased, while exports of frozen fillets declined. There was a large increase in both imports and exports of wet-salted, split cod with a decline in the export of salted and dried fish. With improved refrigeration facilities in consuming countries, and the increasing cost of drying as a result of high oil prices, the trade in wet-salted fish is escalating rapidly. A high-priced market exists for top quality salted fillets in France and Italy, and Danish exports of this product are increasing.

The demand for saltfish continues and Danish companies have made some purchases in Canada. Danish cod landings are expected to be maintained or to increase slightly over the next two to three years. However, Norwegian landings are expected to decrease, which will create opportunities in the market for cod products from other areas.

With their flexibility and intimate knowledge of European markets, Danish companies will no doubt take advantage of this situation to secure supplies wherever available at suitable prices and acceptable quality.

- b) Herring - The second most valuable Danish export commodity is herring, with an export value of about 600 million kroner in 1979 (\$120 million). In spite of a continued ban on herring fishing in the North Sea, both landings by Danish vessels and imports from neighbouring countries increased in 1979 from 1978 (Appendix II). By far the largest supplier was Sweden, with catches from Kattegat, Skagerrak and the western Baltic being landed in ports in northern Denmark. About 14% was exported as fresh, round herring, but the largest quantity (40 000 tonnes, equal to 80 000 tonnes of

TABLE 5

Danish imports from Canada

	1978		1979		1980	
	Quantity (tonnes)	Value (C\$000)	Quantity (tonnes)	Value (C\$000)	Quantity (tonnes)	Value (C\$000)
Salmon, fresh or chilled	1.9	48	0.9	54	--	--
Salmon, frozen	1 485.4	35 177	1 597.3	41 117	1363.3	40 873
Other Salmonids, frozen	28.5	358	--	--	--	--
Eels, frozen	3.3	80	9.2	272	--	--
Herring, frozen	764.6	2 248	62.0	420	--	--
Herring fillets frozen	532.3	3 459	75.2	492	58.6	580
Greenland Turbot, frozen	--	--	--	--	8.0	149
Cod, frozen	--	--	--	--	18.0	132
Cod fillets, frozen	3.1	36	--	--	--	--
Other fillets, frozen	60.0	470	98.0	684	238.3	1 949
Cod roe, frozen	3.2	12	--	--	--	--
Other roe, frozen	--	--	10.0	97	--	--
Roe, Salted	21.3	235	163.4	2 057	172.0	2 640
Herring fillets, salted	--	--	17.7	108	--	--
Lobsters, live	9.9	459	36.5	1 720	25.1	1 303
Lobster, whole, frozen	35.6	1 075	51.7	1 932	71.4	2 248
Lobster meat etc., frozen	0.8	32	0.9	22	4.7	240
Shrimp, frozen, whole	18.1	104	23.5	182	1.3	27
Crab, frozen	4.8	252	4.2	224	5.9	305
Other shellfish, frozen	0.4	19	9.4	258	2.2	52
Invertebrates, frozen (squid)	2.3	90	2.6	119	34.3	162
Canned herring also						
Sardine Style	24.0	37	49.2	546	19.1	294
Canned salmon	32.4	716	22.9	560	33.3	886
Prepared herring, not canned	97.4	756	223.7	1 204	77.4	488
Canned shrimp	2.7	88	2.0	71	--	--
Canned Crab	8.0	367	16.4	981	6.3	428
Canned lobster	0.9	98	3.1	338	--	--
Canned fish and shellfish	--	--	0.3	36	45.2	858
Peeled shrimp, frozen	3.5	1 133	100.1	3 839	160.9	7 472
Crab, prepared, not canned	16.8	786	26.4	652	6.1	292
Shellfish, prepared, not canned	--	--	2.8	64	2.3	65
Total	3 192.7	48 135	2 609.4	58 049	2 353.7	61 443

Source: Statistics Canada, Imports by Commodity, Ottawa various volumes.

TABLE 6

Canadian exports to Denmark

	1978		1979		1980	
	Quantity (tonnes)	Value (C\$000)	Quantity (tonnes)	Value (C\$000)	Quantity (tonnes)	Value (C\$000)
Salmon, frozen, Atlantic	1	5	13	34	3	19
Salmon frozen chum	1 071	5 317	880	4 758	938	5 421
Salmon frozen Coho	3	14	18	141	45	274
Salmon frozen Sockeye	--	--	8	29	--	--
Salmon frozen Spring	24	171	46	213	35	218
Salmon frozen not specified	135	428	329	1 261	95	416
Salmon frozen total	1 234	5 935	1 294	6 436	1 116	6 348
Sea fish not specified frozen	53	181	19	82	1	2
Cod blocks frozen	--	--	32	36	18	23
Herring whole frozen	654	290	--	--	35	50
Herring fillets	346	476	73	81	253	399
Cod salted	--	--	15	37	141	338
Herring pickled	23	47	155	125	--	--
Herring fillets vinegar cured	77	77	--	--	2	2
Salmon coho canned	--	--	2	10	1	7
Salmon pink canned	43	156	13	59	52	255
Salmon sockeye canned	1	2	2	11	1	4
Salmon not spec. canned	--	--	15	72	9	47
Sardine canned	--	--	31	83	73	187
Clams frozen	--	--	7	14	2	17
Crabs frozen	17	151	8	94	3	30
Crabs canned	4	44	13	156	8	116
Lobster in shell fresh						
or frozen	25	193	101	683	79	602
Lobster meat fresh						
or frozen	--	4	11	79	10	81
Lobster meat canned	3	30	1	40	--	5
Scallops frozen	2	13	2	24	1	10
Shrimps fresh or frozen	6	40	370	2 015	1 174	3 701
Shellfish, fresh or frozen						
not specified	259	143	--	--	36	26
Fishery foods and feeds						
not specified	200	88	--	--	--	--
Fish roe, fresh, frozen, cured	--	--	--	--	224	527
Total	2 947	7 870	2 164	10 137	3 239	12 777

Source: Statistics Canada, Exports by Commodity, Ottawa, various volumes.

round herring) was exported as fresh or frozen butterfly fillets, with 30 000 tonnes going to the FRG.

The large quantities of relatively small-sized Baltic herring going to Danish, German, and Swedish processors have had a considerable effect on the marketing of herring products in these countries. Instead of packages containing one or two fillets or a number of slices from a large thick fillet, new product may contain several small fillets attractively arranged in jars. As a result, consumer demand for large herring as supplied by Canada may eventually decline.

When the North Sea is again opened for fishing, additional supplies of somewhat larger herring will be available to Danish processors for export. German processors prefer the conveniences of fresh fillets delivered to their door each morning, but must use frozen fillets whenever fresh products are unavailable. If Canadian prices can remain relatively low, a certain quantity of Canadian frozen fillets should still be required in Germany in the future even with some stock recovery in the North Sea. However, some Danish processors feel that because of Canadian quality problems such as bruising, softness, and poor grading, imports of Canadian frozen herring fillets into Germany will cease or decline sharply when North Sea fishing resumes. Danish imports of Canadian herring have declined from a peak of over 1 000 tonnes in 1978 and are not likely to increase to that level again.

- c) Shrimp - Scandinavians are large consumers of pink shrimp and import considerable quantities. Appendix III shows the Danish supply balance of shrimp and it can be seen that the Faeroe Islands and Greenland are the chief suppliers of cooked shell-on frozen shrimp. These shrimp are caught mainly in waters off Greenland and the Faeroese are using large freezer trawlers similar to those from the Canadian Labrador shrimp fishery. According to Danish statistics, Canada only exported 1.3 tonnes of shell-on and 161 tonnes of peeled shrimp to Denmark in 1980, but Canadian export statistics list Denmark as having taken 1174 tonnes valued at over C\$3.7 million a considerable increase over 1979.

It can be seen from the table in Appendix III that Denmark exported about the same quantity of frozen shell-on shrimp as it imported, mainly to France, Sweden and the United Kingdom. These countries are also, together with the United States, the four largest customers for Canadian shrimp. Present indications are that there should be no problems in finding markets for good quality Canadian shrimp in these countries, since landings are not expected to increase much over the next few years.

- d) Salmon - In addition to domestic landings of about 1 000 tonnes, Denmark imported over 5 000 tonnes of salmon in 1980, up from 4 800 tonnes in 1979. Over 90% of the 880 tonnes of imported fresh Atlantic salmon was supplied by Norway and this consisted chiefly of cultured salmon from seawater farms.

Canada was the major supplier of frozen salmon in 1979 with sales of 1 597 tonnes, mostly chum salmon from British Columbia. Greenland was the largest supplier of frozen Atlantic salmon with 1 285 tonnes. Although Danes prefer Atlantic salmon, the cost is too high for the average consumer and Canadian salmon has become a highly acceptable product. It is anticipated that imports of Pacific salmon will continue as long as this price difference exists. The major competitor for Canada could be the United States (Alaska), while Greenland and Norway will continue to supply most of the Atlantic salmon requirements.

Denmark also exported nearly 2 000 tonnes of fresh and frozen salmon to 29 different countries and 1 334 tonnes of smoked salmon to 40 different countries in 1979. This again demonstrates the advantageous location of Denmark and the ability of Danish processors and exporters to take full advantage of all opportunities.

- e) Lobster and Crabs - Canada is Denmark's largest supplier of live, frozen and canned lobsters, with sales in 1979 of 113 tonnes, valued at C\$800 000. Danish landings of European lobster were only 16 tonnes in 1978, and there should be good opportunities for Canadian exporters in the future.

Norway lobster (Nephrops norvegicus) also known as scampi or Dublin Bay prawn, is a much smaller relative of the lobster, which is also very popular in Europe. Danish landings are about 1 500 tonnes and imports 310 tonnes for a total of 1 810 tonnes. Danish exports in 1979 were 1 605 tonnes valued at 63.3 million kroner.

Canada also exported quantities of snow crab to Denmark in 1979, and is the largest supplier of frozen crab meat (30.6 tonnes according to Danish import statistics) along with 16.4 tonnes of canned crab for a total value of 1.8 million kroner. The outlook is good for limited exports of top-quality crab products in the future.

- f) Other Products - According to Danish import statistics, Canada supplied 163 tonnes of salted roe worth 2.1 million kroner in 1979. This is mostly lumpfish roe from the recently-developed fishery along the Newfoundland coast. The roe is packed in Denmark as a caviar substitute. Iceland is the largest supplier of this product. However, fishing experiments carried out off the Nova Scotia coast in 1980 by the Fisheries Development Branch, indicated that a viable fishery could be developed. There Canada could therefore move up as a serious competitor to Iceland for this product, but should also consider production of the finished caviar product. Denmark exported 6.7 tonnes of caviar to Canada in 1980 worth 268 000 D. kroner.

There is also a considerable demand in Denmark for frozen roe from cod and other species with imports for 1979 in the 3 000 tonne range, valued at 18 million kroner.

This discussion, and the table showing Danish imports and exports, have only dealt with fishery products for human consumption. However, Denmark is also a major exporter of fish meal and oil. According to the 1978 FAO Yearbook of Fishery Statistics, Denmark exported 251 600 tonnes of fish meal in 1978 valued at US\$124 million and 66 100 tonnes fish oil worth US\$28 million.

F. CONCLUSIONS

1. Denmark is a major fishing nation and ranks first in the European Economic Community (EEC) in terms of tonnage landed. It is also an important fish trading nation, exporting not only much of its own domestic catch but also fish landed in Denmark by foreign vessels, and other imports which are processed there and sold abroad.

2. With its very favourable geographic location adjacent to important fishing grounds and close to most of the major markets in Europe, Denmark has become the largest fish exporter in the EEC and fourth in the world, and as such is a major competitor of Canada, especially within the EEC and the European Free Trade Area (EFTA). This competition is particularly strong in the markets for cod and herring.

In 1979, for example, Denmark imported 15 593 tonnes of fresh, frozen, and chilled cod, and exported 33 310 tonnes. In the same year, imports of cod fillets were 428 tonnes, and exports were 34 753 tonnes.

3. The Danes are experts at evaluating market needs and demands. They pack quality products, and their proximity to the markets makes for ease of transportation, which in turn helps to keep their products competitive with those of Canada and other exporting nations.

4. With higher prices in Europe, the Danish industry has in the past year competed less in the United States market and concentrated more on the European cod market.

5. The Danes are not only major fish traders, but are also heavy consumers of fish and fish products. According to Danish statistics, consumption of (live weight) fish was 34.6 (FAO - 1978) kilograms per capita in 1977, as compared with 16.6 kilograms in Canada. The population of 5.1 million is nearly static, and the consumption of prepared fish products runs as high as 110 000 tonnes in a year.

6. The Danish fishing industry has encountered some supply problems due to depleted stocks and reduced quotas in traditional fishing areas. Increased landings by foreign vessels have helped to fill the gap, and there has been a

moderate increase in imports over the past few years.

7. Opportunities for increased Canadian exports to Denmark, however, do not appear to be particularly promising. At present, Canada is a major supplier of Pacific salmon and future prospects for this product are good.

8. Given the country's lifestyle and relatively high income level, Denmark continues to offer some potential as a market for luxury items such as shrimp, crab, and lobster, and also various fish roe products.

9. Danish companies have shown interest in setting up joint processing operations in Canada and in purchasing supplies of salted and frozen cod. However, Canadian processors should realize that many shipments will be immediately re-exported from Denmark, and that direct sales to the consuming countries could be more profitable in the long term.

APPENDICES

APPENDIX I

COD: DANISH SUPPLIES, IMPORTS AND EXPORTS

	1978 (tonnes)	1979
Landings, Danish fishermen	131 485	133 000
Imports, round or dressed, fresh or chilled		
from: FRG	6 293	4 764
Sweden	1 013	4 478
Poland	254	2 570
Others	2 932	1 320
Total	10 492	13 132
Imports, round or dressed, frozen		
from: Sweden	303	1 030
Poland	1 233	1 173
Others	640	305
Total	2 176	2 508
Total supply, round or dressed cod	144 153	148 640
Imports, fillets, fresh or chilled	159	35
Imports, fillets, frozen	1 128	393
Imports, split, wet-salted cod		
from: Greenland	1 925	6 468
Faeroe Island	994	1 167
Others	69	120
Total	2 988	7 755
Imports, dried stockfish	296	500
Imports, salted and dried (Klippfish)	20	3
Imports, salted fillets	46	217
Imports, cod products	4 637	8 903
=====		
Exports, round or dressed, fresh or chilled		
to: France	8 716	9 390
UK	6 513	10 457
Belgium	5 491	5 528
FRG	2 963	3 083
Others	3 098	3 608
Total	26 781	32 066
Exports, round or dressed, frozen	2 322	1 514
Exports, Total, round or dressed	29 103	33 580
Exports, fillets, fresh or chilled		
to: France	860	1 596
FRG	985	1 873
Norway	876	445
Belgium, Luxembourg	413	936
Holland	373	967
Italy	508	802
Others	1 524	1 835
Total	5 539	8 454

APPENDIX I (continued)
 COD: DANISH SUPPLIES, IMPORTS AND EXPORTS

	1978	(tonnes)	1979
Exports, fillets, frozen			
to: US	17 530		9 850
Sweden	5 960		6 484
UK	2 863		6 966
Italy	591		1 025
FRG	426		822
Others	2 042		1 152
Total	<u>29 412</u>		<u>26 299</u>
Exports, salted, split not dried			
to: Spain	709		2 365
Italy	601		1 325
Greece	---		1 303
Norway	672		1 186
France	508		403
Others	438		190
Total	<u>2 928</u>		<u>6 772</u>
Exports, salted fillets			
to: Italy	107		681
France	21		214
Others	19		150
Total	<u>147</u>		<u>1 045</u>
Exports, salted or dried, (Klippfish)	1 064		952
Exports, dried	609		43
Cod, Total exports	<u>68 802</u>		<u>72 145</u>
=====			
Cod Balance			
Round Cod	144 153		148 593
Exported	29 103		33 310
	<u>115 050</u>		<u>115 283</u>
Fillet equivalent: (41%)	47 170		47 266
Fillet exports, (fresh, frozen)	<u>34 951</u>		<u>34 753</u>
Import - exports, other products	-111		91
Approximate Danish consumption	12 108		12 604
In kg. per capita, fillets:	2.37		2.52

Source: Danish Import-Export Statistics

APPENDIX II
HERRING: DANISH SUPPLIES' IMPORTS AND EXPORTS

	1978	(tonnes)	1979
Landings, Danish Fishermen	46 032		52 000
Imports, round, fresh or chilled			
from: Sweden	58 305		70 851
G.D.R.	3 468		3 767
Norway	2 855		3 384
Others	1 117		1 341
Total	<u>65 745</u>		<u>79 343</u>
Imports, round frozen			
from: G.D.R.	579		805
Canada	765		62
Others	745		907
Total	<u>2 089</u>		<u>1 774</u>
Total supply, round herring	113 866		133 117
Imports, Butterfly fillets or dressed, fresh	328		430
Imports, Butterfly fillets or dressed, frozen	792		723
Imports, salted, whole or dressed	304		351
Imports, salted, fillets	10		20
Imports, canned	308		216
Imports, prepared or conserved not canned			
from: Faeroe Islands	990		69
Norway	677		266
UK	278		22
Iceland	242		365
Canada	97		365
Others	285		229
Total	<u>2 569</u>		<u>951</u>
Total imports, herring products	4 311		2 691
Exports, round, fresh or chilled			
to: FRG	8 993		10 325
Holland	3 573		4 792
France	2 154		4 792
Belgium	1 123		1 280
Others	274		505
Total	<u>16 117</u>		<u>21 694</u>
Exports, round, frozen			
to: Holland	5 564		7 484
FRG	872		1 831
Others	144		314
Total	<u>6 580</u>		<u>9 629</u>

APPENDIX II (continued)
HERRING: DANISH SUPPLIES' IMPORTS AND EXPORTS

	1978	(tonnes)	1979
Exports, Butterfly fillets or dressed fresh or chilled			
to: FRG	24 044		26 332
Austria	2 323		2 375
Holland	1 123		2 942
Others	441		882
Total	<u>27 931</u>		<u>32 531</u>
Exports, Butterfly fillets or dressed, frozen			
to: FRG	2 760		3 408
Czechoslovakia	974		1 866
Holland	832		1 486
G.D.R.	684		1 153
Others	125		157
Total	<u>5 375</u>		<u>8 070</u>
Exports, whole or dressed, salted			
Exports, fillets, salted			
Exports, canned			
to: FRG	1 934		2 901
France	372		488
Sweden	314		231
Others	644		796
Total	<u>3 264</u>		<u>4 416</u>
Exports, prepared or conserved, not canned	963		1 236
Total exports	<u>60 230</u>		<u>77 576</u>

Herring balance		
Round herring supply	113 866	113 118
Exported round	22 697	28 155
Processed in Denmark:	<u>91 169</u>	<u>104 963</u>
Butterfly equivalent (50%)	45 585	52 482
Plus imports of herring products	4 311	2 915
Total, herring products	<u>49 896</u>	<u>55 397</u>
Less exports:	<u>38 683</u>	<u>48 031</u>
Apparent Danish consumption (disappearance), tonnes	11 213	7 366
Apparent Danish consumption (disappearance), kg/capita	2.2	1.44

Source: Danish Import-Export Statistics

APPENDIX III
HERRING: DANISH SUPPLIES, IMPORTS AND EXPORTS

	1978	(tonnes)	1979
<u>Pink, (deepwater) shrimp, (Pandalus borealis)</u>			
Danish landings, home waters	Est.	3 400	2 900
Danish landings, distant waters		3 400	1 500
		<u>6 800</u>	<u>4 400</u>
<u>Imports, with or without shell, fresh or frozen</u>			
from: Faeroe Islands		8 530	6 869
Greenland		1 743	4 584
Canada		18	24
USSR		636	216
Norway		350	8
Others		94	43
Total		<u>11 371</u>	<u>11 744</u>
<u>Imports, peeled frozen</u>			
from: Greenland		1 973	2 949
Norway		1 053	1 296
Iceland		404	337
Canada		35	100
US		600	110
Others		344	385
Total		<u>4 409</u>	<u>5 177</u>
<u>Import, canned</u>			
from: Greenland		565	612
US		61	49
Others		39	40
Total		<u>665</u>	<u>701</u>
<u>Imports, other shrimp, species and products</u>			
Crangon, fresh		2	52
Crangon, frozen		151	61
Other, fresh frozen		61	30
Shrimp, prepared or conserved not canned		2	7
Total imports		<u>16 661</u>	<u>17 772</u>
Total supply		<u>23 061</u>	<u>22 172</u>
<u>Exports, pink shrimp (Pandalus borealis) with or without shell, fresh or frozen</u>			
to: France		3 492	4 789
UK		1 282	1 510
Sweden		3 634	3 397
Norway		741	465
Holland		135	384
Belgium		198	343
FRG		177	208
Italy		932	273
Others		98	65
Total		<u>10 689</u>	<u>11 434</u>

APPENDIX III (continued)
SHRIMP: DANISH SUPPLIES, IMPORTS AND EXPORTS TONNES

	1978	(tonnes)	1979
Exports, peeled, frozen			
to: UK	382		610
Sweden	357		336
FRG	387		293
France	160		194
Switzerland	196		150
Others	252		235
Total	1 734		1 818
Exports, canned			
to: FRG	519		319
UK	100		98
France	122		82
Switzerland	49		49
Others	114		43
Total	904		591
Exports, other shrimp, etc.			
Crangon sp., fresh	1 106		967
Crangon sp., frozen	872		987
Other, fresh, frozen	698		1 008
Prepared or conserved, not canned	220		287
Total, exports	16 223		17 092
Disappearance (apparent Danish consumption) supply-exports	6 838		5 070
In kilograms per capita	1.34		1.00

Source: Danish Import-Exports Statistics

APPENDIX IV

THE FISH AUCTION SYSTEM

The sale of most fish landed in Denmark for human consumption has gradually been concentrated in the fish auctions established in the most important landing ports. Catches destined for animal feed or for fish meal are delivered directly to feed centres or fish meal plants on a contract basis. There are also direct sales to local wholesalers or retailers in smaller ports, or sale through commission agents, principally at the Copenhagen fish market.

The first fish auctions in Denmark were established in 1922 and today the auctions are estimated to handle some 65-70% of fish landed for human consumption by Danish fishermen. In addition, foreign fishermen, principally from Sweden, Iceland, and the Faeroe Islands, use the auctions at Skagen, Hirtshals and Hantsholm.

In structure, as well as legally, the fish auctions are operated as private enterprises, but they are under strict government control. The auctioneer is licensed by the Ministry of Fisheries and local fishermen's associations have the right to propose candidates for the allotment of vacant licences. The licences stipulate the auctioneer's fees for all his functions.

The turnover and average prices for the major species sold through the auction system for the past two years were as follows:

Species	Quantity/Value		Ave. price, Kr/Kg		Percentage change
	1978	1979	1978	1979	
<u>European plaice</u>					
Q-tonnes	49 014	50 126	4.41	5.52	+ 18
V-1000kr	216 103	261 593			
<u>Sole</u>					
Q-tonnes	936	630	33.59	38.39	+ 14
V-1000 kr	31 440	24 188			
<u>Cod</u>					
Q-tonnes	125 444	127 113	3.76	3.84	+ 2
V-1000 kr	471 522	488 031			
<u>Herring</u>					
Q-tonnes	46 032	53 645	3.09	3.02	- 2
V-1000 kr	142 453	161 904			
<u>Mackerel</u>					
Q-tonnes	13 515	16 578	1.60	1.54	- 4
V-1000 kr	21 633	25490			

APPENDIX V

OUTLINE OF THE EEC REFERENCE PRICE SYSTEM FOR IMPORTS
OF FROZEN FISHERY PRODUCTS

Reference prices are at present fixed for frozen cod, saithe, haddock, redfish, mackerel, and hake. Two prices are set: one for whole fish and one for fillets. According to EEC officials, the difference between these prices reflects the cost of producing fillets, including the amount of fish necessary to produce the same weight of fillets. Prices are usually set once a year and are valid for a calendar year. The recent increase in reference prices represents a departure from past practice.

Reference prices are expressed in European Currency Units (ECU), a unit of account of the EEC. Special conversion rates are used to convert ECU-dominated prices for agriculture and fisheries products into the currencies of member states; these rates are known as "green rates," which are fixed from time to time by the EEC. However, those used for conversion of reference prices for fish products usually do not change within a calendar year. From June 1, 1980, one ECU=7.72336 Danish kroner.

EEC regulations provide that when the entry price of imports is observed to be under the reference price "imports of that product may be suspended or restricted to specific qualities, form of presentation or end uses". Import prices are not compared directly with reference prices; they are first converted into "entry prices" which then are compared with the relevant reference price. Import prices are converted into "entry prices" by multiplying them by certain coefficients, a list of which is attached. Conversely, however, reference prices for particular products can be derived by dividing the relevant reference price by the appropriate coefficient. The example on the following page illustrates the derivation of reference prices for frozen whole cod and boneless cod blocks imported into West Germany.

	Frozen whole cod	Frozen boneless cod fillet blocks
Reference price ECU/MT	648	1508
Green Rate DM/ECU	2.7834	2.7834
Reference price DM/MT	1803.64	4197.36
Coefficient	1.00	0.87
Derived reference price DM/MT	1803.64	4824.55
DM/C\$ exchange rate (July 15, 1980)	0.6593	0.6593
Derived reference price C\$/MT	1189.13	3180.82

Source: Department of Industry, Trade and Commerce

APPENDIX VI

DANISH LABELLING REGULATIONS FOR RETAIL AND WHOLESALE
PACKAGES OF FISHERY PRODUCTS

Fish and fishery products package for retail, including

fresh fish)	
frozen fish)	
fully preserved (canned))	
products of fish)	see definitions below
semi-preserved products)	
of fish)	

shall, when sold in Denmark, have the following markings on the retail packages:

1. type of product
2. net weight
3. producer's or dealer's name and address (city)
4. licence number (Danish products)
5. country of origin (imported products)
6. date mark) as specified below
7. recommendations for storage)

- Re.1. Ordinarily the normal trade name of the products shall be given. Semi-preserved products shall be labelled "semi-preserved" (Halvkonserves) Slaks (smoked and dyed fish) shall be labelled "salmon substitute" or "prepared from...", with the name of the fish used, for example, pollock or halibut.
- Re.2. By net weight is meant the average content in the retail packages with a tolerance of 5% for the individual package. The net weight of frozen products is the weight in the frozen state, but excluding any glaze.
- The net weight of fully and semi-preserved products comprises the solid ingredients plus oil, tomato paste, or other sauce. Soup, brine, jelly, etc., are not included in the net weight. For semi-preserved products, the amount of fish should comprise at least 90% (with some exceptions).
- Re.3. Imported frozen products shall be labelled with the importer's name and address or his licence number.
- Re.4. Processing of fish and fishery products (including re-packing and freezing and cold storage) must be carried out only in an establishment that is authorized by the Ministry of Fisheries (Ministry of Fisheries and Industrial Inspection).
- Re.5. The country of origin is generally the country where the final processing and packaging of the product was carried out.

Re.6.7.

Product	Date labelling	Storage instructions
storage temperature max. 5°C.		
frozen fish	month and year when product was packed. Labelling of the retail package can be made in a code established by the Minister of Interior, but in such cases the wholesale package shall have an open packing date (no code). This also applies to imported products.	"deep frozen"
fully preserved products	Day, week, or month and year of the production. Code can be used if it has been approved in advance by the Ministry of Fisheries and Industrial Inspection. Does not apply to imported products.	<u>None</u>
semi-preserved products	Day, week, or month and year of production, open or in the following code: week number in the year followed by the last two numbers of the year: for example, 0871=8th week 1971. Also applies to imported products.	"Must be kept cool" (shall be stored at max. 10°C.)
lightly pre-	Open packing date and last date for sale	Storage temperature max. 5°C.

All labelling requirements shall be in Danish, Swedish, or Norwegian, or in one of the major languages (in practise, English, German, or French). However, storage instructions and the word "Halvkonserves" (semi-preserved products) shall be given in Danish, Swedish, or Norwegian.

Definitions

Retail packaged means packed in closed packages (cans, glass, plastic, pails, plastic bags, etc.) intended for sale consumers.

Fresh means unprocessed except for gutting, heading, cutting, and filleting.

Frozen means deep frozen to a temperature of -20°C. or lower.

Fully preserved products means sterilized (in practice through heat) in cans, glass jars, or other packages of similar strength.

Semi-preserved products means preserved with salt, sugar, acid, and/or preservatives so that growth of pathogens and toxin-forming micro-organisms is prevented.

Lightly preserved means treated in such a way (for example, by smoking), that the product has achieved a somewhat longer keeping time than fresh products, but without the growth of pathogenic and toxin-forming micro-organisms being prevented. Non-sterilized products with a ph value over 5 and a salt content under 6 are commonly considered to be lightly preserved products.

Packages of fishery products to be sold wholesale shall be labelled with:

1. Type of product
2. Licence number of producer (Danish products)
3. Country of origin (imported products)
4. Date produced (or packaged)
5. Instructions for storage

To the extent and in the manner shown in the following table:

<u>Product group</u>	<u>Type (name of) product</u>	<u>Licence No. or country</u>	<u>Date</u>	<u>Storage instructions</u>
Fresh fish fillets	X	X	X	
Frozen fish fillets	X	X	X	"Deep frozen"
Other frozen fish		X		"Frozen fish"
Fully preserved (canned) fish	"fully preserved fish"	X		
Semi-preserved fish	"semi-preserved fish"	X	X	
Smoked fish	X (only for export)	X		
Lightly pre-served fish	X	X	X (only shrimp)	"max 5°C"

In addition, wholesale packages for export shall be marked "Denmark".

With respect to how the labelling is to be carried out, see labelling regulations for retail-packaged products.

Products that are not included in the product groups in the table, for instance, dried or salted fish, shall only be labelled with the licence number of the production plant or country of origin.

Source: Danish Ministry of Fisheries, Industry Inspection.

