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

PERU



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of Canada

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et Océans

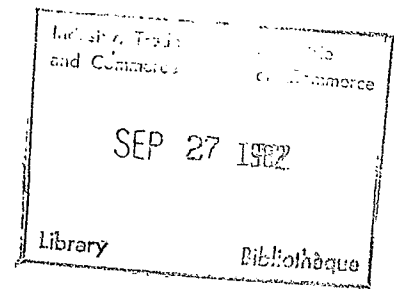
(This Report is one of a series of country and species annexes to the main study - entitled the Overview).

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Annex to the
Worldwide Fisheries Marketing Study:
Prospects to 1985

P E R U



STUDY TEAM

D. Goodman
Department of Fisheries and Oceans
D. Dickinson
Nickersons Seafood, Bermuda
H. MacNairnay
Canadian Embassy, Lima
G. Vernon
Department of Fisheries and Oceans
E. Wong
Department of Fisheries and Oceans

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

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

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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

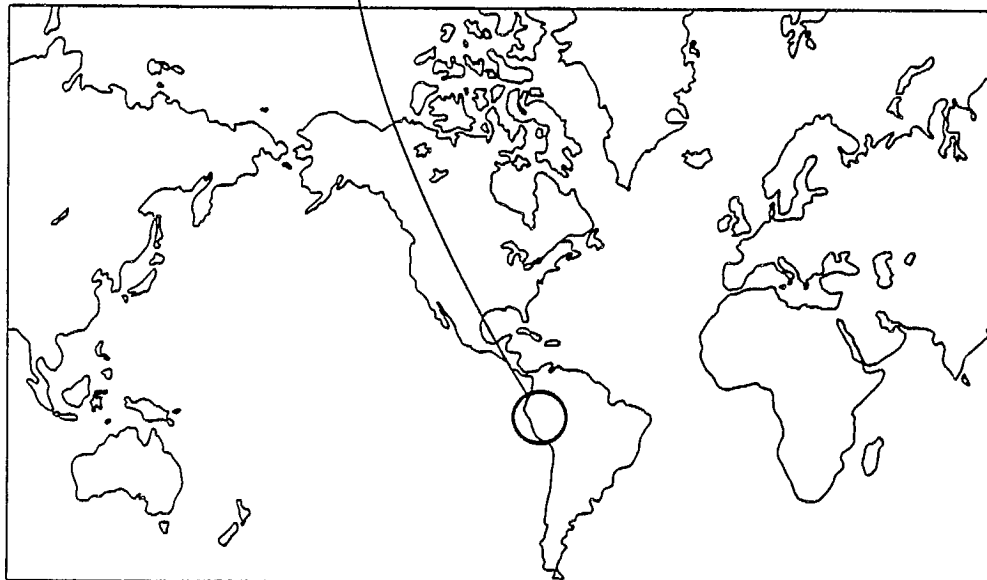
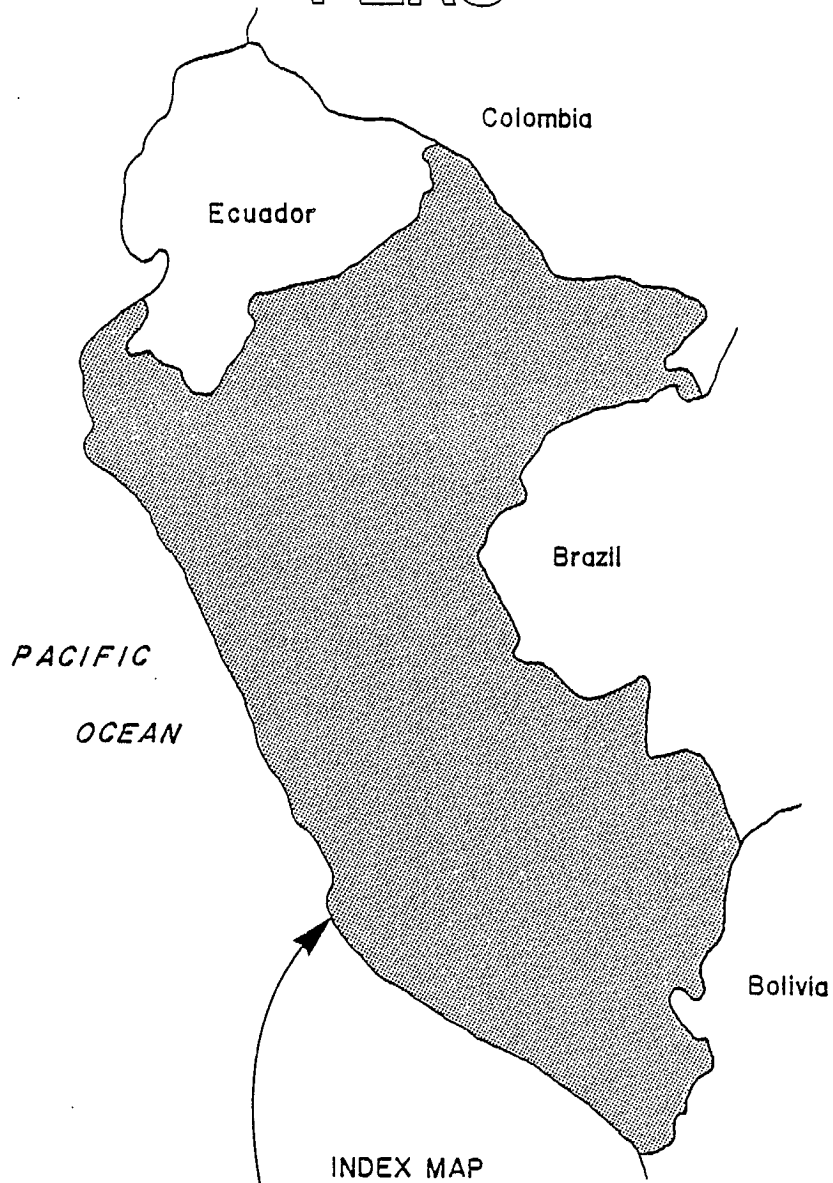
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WORLDWIDE FISHERIES MARKETING STUDY
PERU

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PERU



A. INTRODUCTION

With a coastline of 2 330 kilometres, Peru has access to one of the most prolific fishing areas of the world, blessed with upwellings of ocean current rich in nutrients.

Thus it is not surprising, given the country's highly favourable location on the Pacific coast of South America, that Peru ranks among the ten top fishing nations in the world, in spite of a sudden and drastic decline of the anchovy stock and the resulting need for the domestic industry to adjust to dramatically changed circumstances.

There are serious problems to be overcome before Peru can achieve its full potential as a producer of fish and fish products, but even so it is virtually self-sufficient in so far as its domestic market is concerned and a force to be reckoned with on world markets.

As such, Peru cannot be considered as a potential major customer for Canadian fish and fish products. Rather, it should be regarded as a competitor, and one whose significance in the world fish trade is likely to grow.

Until about 1973, incredibly abundant stocks of anchovies were the foundation on which the Peruvian fishing industry had been built. Anchovies accounted for around 90% of the total catch, and during the period 1962-72 this species represented, in volume, the most important fishery in the world.

Then disaster struck. Due to a combination of overfishing and followed by the "EL NINO" warm ocean current phenomenon, the anchovy stocks in the coastal waters were suddenly decimated.

At the time, it was thought this might well be the end of the Peruvian fishing industry. Certainly it was a devastating blow, as shown by the fact that while the industry accounted for up to one-third of the country's export earnings in the early 1970's, in 1979 it accounted for just under 10%, and total production was less than half of the output in 1970. Peru remains, however, the world's largest exporter of fish meal.

In response to this crisis, the Peruvian government launched a program to restructure the industry, with emphasis on other species of fish and a shift away from the production of fish meal to products for human consumption, both for the domestic market and exports.

In the process, the restructuring program demonstrated that species other than anchovy are suitable for the production of meal and oil. In fact, what is left of the anchovy catch is now running at less than half of the total catch for industrial use, compared with 98% in 1975.

It should be noted that in July of 1980 the former military government of Peru passed control over to a civilian government. It is considered possible that in response to pressure from the private sector, the new government will make significant changes in policies affecting development of the fisheries industry.

B SUPPLY

1. Landings

A gradual shift to products for human consumption rather than fish meal and oil products is reflected in the species that make up the country's total catch. Landings of sardines (sardinops sagax) increased from less than 1 000 tonnes in 1970 to more than 1.1 million tonnes in 1979. Catches of Pacific silver hake (Merluccius gayi) increased from 17 218 tonnes in 1970 to 420 903 tonnes in 1978. The catch of eastern Pacific bonito (Sarda chiliensis) has shown a steady decline, from 73 043 tones in 1971 to 4 677 tonnes in 1978. Much of the canning industry in Peru has turned to sardines as a replacement for bonito to serve the domestic market. Annual catches of these major species, reflecting changes in volume over the years, are detailed in Table 1.

TABLE 1
Peru: major species catches 1970-1979
000 tonnes

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
<u>Major Species</u>										
Anchovy	12 277	10 276	4 447	1 513	3 583	3 079	3 863	792	1 157	1 363
Chilean Sardine	0	6	6	132	73	63	175	871	1 075	1 728
Jack mackerel	5	9	19	43	129	38	54	505	463	151
Hake	17	26	13	133	109	85	93	107	421	93
Horse mackerel	9	10	9	65	63	24	40	46	97	118
Bonito	57	73	64	35	7	5	4	6	5	5
Total	12 535	10 529	4 725	2 329	4 145	3 447	4 343	2 541	3 365	3 458

Source: FAO, Yearbook of Fishery Statistics, Vol. 48, 1979, Rome Italy.

The overall Peruvian catch, by species, for the period 1973-1978, is outlined in more detail in Table 2, which follows.

TABLE 2
Peru: major species catches 1970-1979
000 tonnes

	1974	1975	1976	1977	1978	1979
Freshwater fishes NEI	5 514	6 777	6 280	9 015	14 064	15 217
Flatfishes NEI	720	496	747	1 001	665	---
Chilean hake	109 318	84 898	92 801	106 799	420 903	92 935
Groupers NEI	575	627	241	378	319	---
Peruvian Rock bass	4 503	2 572	1 758	1 946	2 280	1 438
Tilefishes	873	1 075	758	1 167	603	1 628
Snappers NEI	397	81	157	518	67	---
Southeast Pacific grunt	1 623	1 039	651	1 383	1 900	2 653
Drums	11 881	10 164	3 959	10 252	9 638	7 001
Peruvian weakfish	6 303	2 232	2 377	3 127	2 598	3 049
Whitemouth, Pacific croakers	0	133	110	119	144	897
Peruvian drum	7 751	5 990	4 892	5 775	6 697	5 867
Piniadilla	169	143	165	111	100	---
Cusk-eels NEI	2 208	1 377	813	1 226	507	758
South Pacific breams	9 370	7869	18 257	23 336	20 972	9 399
Flying fishes NEI	9 684	1 454	5 088	6 052	---	34 017
Mulleis NEI	7 394	5 843	3 218	6 035	3 076	13 384
Silversides(=Sand smelts)	6 053	10 297	3 338	3 313	1 888	4 909
Pelagic percomorphs NEI	55	71	96	70	10	---
Chilean jack mackerel	129 211	37 899	54 155	504 992	462 520	150 871
Pompanos	215	345	194	235	91	---
Chilean pilchard (=sardine)	72 605	62 851	174 701	870 903	1 074 519	1 727 929
Southeast Pac. Menhaden	16 694	2 964	2 742	5 236	3 320	2 819
Anchoveta (=Peruvian Anchovy)	3 583 476	3 078 810	3 863 050	792 106	1 156 628	1 362 763
Eastern Pacific bonito	7 404	4 887	4 055	5 747	4 677	5 289
Sierra	2 037	2 279	1 252	1 314	650	454
Skipjack tuna	2 257	3 588	2 274	3 267	3 011	1 478
Yellowfin tuna	4 725	4 082	2 708	2 515	3 372	1 672
Swordfish	470	158	294	420	251	188
Chub mackerel	63 270	23 588	40 172	46 071	97 165	117 953
Smooth-hounds	13 508	11 629	8 460	9 727	10 155	7 409
Angelsharks	568	331	117	326	205	---
Peruvian guitarfish	684	626	571	1 942	360	1 891
Skates and rays NEI	1 813	1 868	1 292	1 596	1 750	2 866
Sharks, rays, skates etc.	162	164	187	29	200	---
Marine fishes NEI	24 577	15 225	12 910	50 379	14 287	43 907
Marine crabs NEI	931	1 432	1 511	1 254	984	1 188
Panulirid spiny lobsters NEI	9	1	10	9	---	---
Penatus shrimps NEI	465	1 523	1 221	539	44	645
Gastropods NEI	1 570	1 592	2 893	2 733	3 760	3 024
Cholga GA (=Choro) mussel	9 874	11 906	16 385	11 316	10 958	13 225
Scallops NEI	985	813	757	1 069	1 800	7 613
Common squids	133	466	375	271	270	231
Octopusses NEI	19	13	2	37	70	---
Squids NEI	--	--	717	1	---	---
Marine molluscs NEI	3 499	3 812	5 391	4 791	2 162	6 184
Marine turtles NEI	51	148	183	31	31	31
Guano	19 306	31 500	---	36 645	29 572	29 572
TOTAL	4 144 909	3 447 638	4 344 2852	537 124	3 369 243	3 682 354

Source: FAO, IBID.

2. The Domestic Fishing Industry

a. Meal and Oil

The shift in emphasis from fish meal and oil production to products for human consumption is a gradual process. Although the anchovy catch has fallen drastically, the Peruvian industry continues to be oriented towards the production of products for industrial use as can be seen in Table 3. Table 1 in the preceding section shows that the anchovy catch has recovered to some extent, but also there are many species normally consumed directly such as sardines, jack mackerel, hake, which are now being used for fish meal production. These species now provide nearly 60% of the industrial use stock.

The total catch for 1980 was 2.5 million tonnes a big drop from the 3.5 million tonnes of 1979 and 3.4 million tonnes for 1978.

According to FAO figures Peru produced just over 40% of the total world fish meal and feeding stuff in 1970; by 1978 this proportion had fallen to under 15%. Nevertheless production of fishmeal rose to 670 000 tonnes in that year from a low of 423 000 tonnes in 1973. The total catch for fish meal plants to the end of October 1980 was 984 087 tonnes compared with a total of 1.8 million tonnes for 1979, 2.3 million tonnes for 1978 and 1.8 million for 1977.

TABLE 3
Peru: overall production, consumption, and exports
in the fishing industry.

	1974	1975	1976	Prel. 1977	Prel. 1978	Proj. 1979
	(000 tonnes)					
<u>For industrial use</u>						
Overall industrial fish catch	3 867	3 117	4 004	2 017	2 746	2 800
Anchovy catch	(3 583)	(3 079)	(3 863)	(792)	(1 157)	(1 300)
Other	(284)	(38)	(141)	(1 225)	(1 589)	(1 500)
Fish meal						
Production	911	706	886	553	655	665
Exports	629	746	623	430	483	550
Domestic consumption	115	134	133	122	78	100
Change in stocks	167	-174	131	1	39	15
Closing stocks	213	39	170	171	210	225
Fish oil						
Production	212	213	104	89	123	126
Exports	78	141	5	4	6	50
<u>For human consumption</u>						
Overall catch for human consumption	319	292	334	474	580	640
Fresh fish	(140)	(125)	(131)	(151)	(151)	(170)
Canned fish	(83)	(74)	(98)	(226)	(226)	(270)
Frozen fish	(80)	(74)	(93)	(187)	(187)	(185)
Salted fish	(16)	(18)	(12)	(15)	(15)	(15)
Domestic fish consumption	174	164	170	213	193	214
	<u>(Annual percentage change in fish production)</u>					
<u>Selected indicators of fish production</u>						
Overall industrial catch	90.0	-19.4	38.5	-49.6	36.1	2.0
Fish meal production	116.9	-22.5	25.5	-37.6	18.4	1.5
Fish oil production	443.6	0.5	-51.2	-14.4	38.2	2.4
Overall catch for human consumption	8.1	-8.5	14.4	41.9	22.4	10.3

Sources: Ministry of Fisheries; and Central Reserve Bank of Peru.

TABLE 4
Peru: Fisheries Production - 1979

Canned Fish - cases of 48 cans (40% ½ pound, 60% 1 pound)

<u>Month</u>	<u>Landings</u> (tonnes)	<u>Production</u>	<u>Domestic Sales</u>	<u>Exports</u>
January	20 180	353 452	194 003	198 416
February	29 248	448 289	198 083	184 428
March	26 438	540 628	237 134	388 175
April	23 594	537 548	206 077	222 979
May	28 940	645 456	162 697	211 488
June	20 898	495 916	188 258	217 150
July	32 902	515 483	185 511	224 810
August	24 966	466 024	183 845	231 554
September	19 955	381 761	156 951	239 298
October	21 900	393 585	209 823	259 698
Total	249 021	4 778 142	1 922 382	2 377 996

Source: Ministry of Fisheries, Lima.

b. Production of canned, frozen fisheries products

Peru's production of canned and frozen fish for the period January to October 1979 is detailed in Table 5 below. It should be noted that problems of domestic distribution are reflected in the fact that 44.7% of the output of canned products is sold domestically, while only 11.4% of frozen fish can be sold in Peru, mainly due to shortcomings in the country's cold storage facilities and distribution infrastructure.

Canned fish products come from the more than 100 canning factories in the country as well as from forty privately-owned fish meal plants along the coast, which are required by law to produce five cases of canned fish for every tonne of meal processed.

TABLE 5
Peru: Fisheries Production - 1979

	<u>Landings</u>	<u>Production</u>	<u>Domestic sales</u>	<u>Exports</u>
Canned	248 951 (tonnes)	4 778 144 (cases)	1 921 382 (cases)	2 377 996 (cases)
Frozen fish	171 228 (tonnes)	97 519 (tonnes)	7 428 (tonnes)	65 039 (tonnes)

Source: Data collected from investigations by the study team.

The economics of the fish canning industry in Peru are essentially governed by the export subsidy (38% CERTEX) provided for non traditional (i.e., non-fish meal) exports. The more than 100 canning factories produced five million cases (48-15 oz. cans) in 1979, 2 765 000 cases of which were exported.

One of the major problems of the canning industry is that it relies on deliveries of raw material from old vessels that were originally used to catch anchovy for the fish meal industry. Thus, the capability and facility are not always conducive to delivering first-quality fish in the right volumes and varieties required.

If Peru is to rationalize its fish processing industry, there must be efforts made to increase the percentage of the catch used for canning and freezing, which means overcoming the inadequacies in existing unloading, transport and storage facilities.

Among the measures being suggested is an initial conversion factor for the fish freezing industry of five cases per landed tonne, the same as for the canneries. These minimum requirements would then be raised by 40% per year.

Other measures suggested include suspension of licences in areas of high concentration, and the publicizing and vigorous enforcement of quality control standards.

As for the preserving industry, its authorized capacity is in the order of 136 000 cases per eight-hour shift. Assuming there are 200 working days per year and an operating rate of 60%, the preserving industry, in theory, can produce around 16 000 000 cases per year. Given optimum capabilities for onboard preservation, landing and handling, this theoretical production would require one million tonnes of raw material.

At present, the industry is not fully equipped to handle indicated volumes of sardines, caballa and jurel for canning, but investments in the short and medium term are expected to make this possible.

In the meantime, the structure of the industry obliges processors to direct a considerable, but decreasing proportion of resources to the production of fish meal.

The freezing industry has a capacity of 1 115 tonnes per day, and assuming an operating rate of 30%, the raw material requirement is 500 000 tonnes.

3. Catch quotas

Even though the allowable catch of anchovies has been set at zero, there was an actual "by catch" in 1979 of 1.3 million tonnes, and all indications pointed to about the same volume for 1980.

From the experience of recent years and the projections of the Instituto del Mar Peruano (IMARPE) the government agency responsible for research in oceanography and fisheries, Peruvian waters can produce an annual theoretical maximum catch of 3 250 000 tonnes, made up of the following species: -

Anchovies	1 000 000 tonnes
Sardines	800 000 tonnes
Jack mackerel	800 000 tonnes
Horse mackerel	200 000 tonnes
Pacific hake	300 000 tonnes
Tunidos	20 000 tonnes
Bonito (tuna)	3 000 tonnes
Pesca blanca	250 000 tonnes

Catch quotas for major species are set by the Minister responsible for fisheries on the advice of IMARPE. The procedure is to establish tentative quotas as of January 1 each year, based on the previous year's catch and scientific data related to the catch per unit effort, age structure of the population and acoustical surveys. These tentative quotas can be modified throughout the year on the basis of additional information.

	Quotas	
	<u>1980</u>	<u>1981</u>
	(tonnes)	
Jack mackerel	700 000 - 900 000	800 000
Sardines	800 000 - 1 000 000	700 000
Horse mackerel (Jurel)	250 000 - 350 000	325 000
Pacific silver hake	250 000 - 300 000	275 000
Anchovy	Nil	Nil
Pilchard	--	700 000

The absence of accurate scientific and statistical information is a continuing problem, as illustrated in the fact that the catch quota on anchovy was zero in 1979, yet fishermen landed more than one million tonnes. IMARPE estimated that an anchovy "by-catch" of roughly the same size would occur in 1980.

There are indications also that the anchovy may be staging a significant comeback. On the basis of what data are available, it is anticipated that by 1985 anchovy stocks may recover sufficiently in the Peruvian coastal waters to allow a harvest of two million tonnes. Several joint research projects are in progress that might shed more light on the future of the anchovy resource, involving the United Nations Food and Agriculture Organization (FAO), Norway and West Germany.

Against this backdrop, and recognizing the enormous productive potential at Peru's doorstep in the eastern Pacific, IMARPE scientists are confident that total fish landings may return to previous levels of 20 million tonnes. However, they are reluctant to be precise concerning projections on stocks of individual species, because they lack reliable biological data.

4. Prospects to 1985

The Peruvian fisheries industry is beset by a number of problems which are placing obstacles in the way of shifting the emphasis to products for human consumption, and preventing the full utilization of overall fish resources for canning, freezing and other types of processing. Among the problems:

- Peru's existing fishing fleet lacks adequate equipment for the proper preserving of fish on board.
- The country lacks adequate docks and unloading systems for handling fish.
- The internal transportation system is inadequate, making it virtually impossible to organize efficient distribution of fresh and frozen products in many areas of the country.
- Facilities in the processing plants are more than adequate to handle the industry's catch, but quality control leaves something to be desired.
- Shortage of capital is proving to be a major constraint on the conversion program and although credit lines for the industry have already been provided by the Inter-Development Bank and the World Bank. Credit is also being sought from West Germany and Canada.
- The lack of ice has been a major constraint on the development of the fish for food industry in Peru. There are ice plants at la Puntilla, Samanco and Paita. By 1981 ice requirements should be 1 620 tonnes a day and by 1985 it may be 2 250 tonnes a day.

One of the major problems of the Peruvian fishing industry stems from the fact that the country's canning plants depend for the most part on landings by old vessels that were originally designed to catch anchovy for the fish meal and oil processors. These vessels are not equipped to keep their catches fresh, with the result that only 20% to 25% of the fish reaches shore fit for processing as food for human consumption.

To add to the difficulties, processing capacity is far in excess of what the fishery can supply. For example, it is estimated that government-owned plants could handle eight million tonnes of raw material per year. But even if the existing fleet were equipped with refrigerated seawater systems for preserving the catch or were replaced with new vessel, and assuming the conversion to products for human consumption is successful, it is likely to be a long time before available stocks can yield a catch of much more than three million tonnes. Landings predicted for 1985 are at 4 million tonnes.

Nonetheless, efforts are being made to enhance the quality of fish landed. Among them is a regulation requiring canneries to produce a minimum of five cases of canned fish for every tonne landed. Intentions are to raise this requirement incrementally to twelve cases per tonne. And there is pressure from an association of private firms in the fishing industry, Sociedad Nacional de Pesqueria (SNP) to increase the requirement to eighteen cases per landed tonne.

Summing up the situation, there remain serious problems to be resolved - among them the need for better management and conservation to prevent a repetition of what happened to the anchovy - but it appears fairly certain that Peru will make the shift in the next five years from its past concentration on fish meal and develop an industry that can serve a growing domestic market and produce a balanced line of products for export.

5. Fish meal production

Until recently, the fish meal industry in Peru made a significant contribution to the overall economy but in 1976 exports of meal represented only 2.6% of total exports. Despite this reduction Peru continues to produce a significant proportion of the world supply of fish meal. In addition to being the largest producer, it is also the leading exporter, with sales of 500 000 tonnes in 1978 valued at US\$192.2 million. The major importing countries were the FRG, Japan, Cuba, USSR and other Eastern European countries¹). All fish meal in Peru is sold through PESCAPERU, the state corporation formed in 1973 from the nationalized fish meal industry.

¹) FAO Committee on Fisheries 13th Session 1979.
Fish Commodity situation and outlook 1978/79, Rome, Italy.

Shipments of fishmeal plummeted by 39.3% in volume and in ad valorem terms by US\$42 million or 33.5% from 1980 to 1979. The unit price of fishmeal sales advanced from an average of US\$359 a tonne in 1979 to US\$433 a tonne at the end of the first quarter of 1980. At the end of September 1980, the CIF quotation Hamburg was up to US\$502 a tonne.

Pescaperu is regulated through the Ministry of Fisheries. In 1979 the agency was given a quota of 1.5 million tonnes of raw material. At 26% conversion, Pescaperu produced 345 000 tonnes of meal and 45 000 tonnes of oil. In addition, production from the private sector totalled 150 000 tonnes of meal. Approximately 85% to 90% of fish meal produced in Peru is exported to 50 countries. Domestic legislation forbids the export of fish oil.

Officials at Pescaperu are optimistic that the 1.5 million tonne allocation of raw material received in 1980 will be increased to levels of approximately two to three million tonnes in the future.

At present, fish meal is used as a component (2% to 6%) of balanced animal feed. However, Pescaperu is examining the possibility of producing protein products for human consumption from fish meal, including soup in cube form. There are also plans to convert all operations to produce a high protein/low fat fish meal. Present protein/fat ratios are 72% protein/10% fat. The new product would contain only 2% fat. Pescaperu has a current capacity to produce 40 000 tonnes of this "high quality fish meal" and has recently exported 4 000 tonnes of this product to Japan. Officials are hoping that this product will qualify for the 38% export subsidy (CERTEX) applicable to all non-traditional exports. Although there is some concern on the part of officials of Pescaperu that synthetic proteins may be substituted for fish meal in some markets, they are optimistic that world markets for fish meals will remain at present levels. Present policy does not include actively searching for new markets. Major competitors for fish meal markets are Norway and Chile. South Africa was a competitor until 1979 but no longer exports large quantities because of a lack of raw material.

Pescaperu employs 7 200 people (6 300 in factories and 900 in administrative offices), operates thirty-seven meal plants and has a capacity of 3 800 tonnes per hour. The five fish oil refineries have a 1 100-tonne/day capacity. In 1973 Pescaperu owned 1 300 vessels with a total capacity of 210 000 tonnes. Since then the fleet has been sold to private industry and has been reduced to 500 vessels with a capacity of 120 000 tonnes.

C. DEMAND

1. The Market in general

Fish is a relatively important part of the Peruvian diet. Based on estimates by the Food and Agriculture Organization of the United Nations (FAO), domestic consumption 15.0 kilograms per capita in 1975 to around 12.2 kilograms in 1979 (live weight).

This consumption consists mainly of canned sardines in the inland areas, and a combination of canned sardines and fresh fish sold in public markets in the coastal regions. As noted in an earlier chapter, increased consumption of fresh and frozen fish is restricted because of the lack of freezing facilities and an inadequate transportation system.

The government of Peru would like to increase the consumption of fish, and a primary vehicle for achieving this objective is Empresa Peruana de Servicios Pesqueros (EPSEP), established in 1971 as a state organization to provide services to the fishing industry.

Since 1971, EPSEP has expanded its operations to become an owner of fishing vessels and processing plants, and it is involved as well in some joint fishing ventures with Poland. But one of EPSEP's basic objectives is to improve the supply situation for the domestic market, and promote increased consumption of fish products.

2. Government policies

One of the government's first orders of economic priorities is to increase rural development and other projects of a labour intensive nature designed to gradually absorb the unacceptably large numbers of unemployed and underemployed workers.

Government policy and regulations, including price controls, exert a significant influence on domestic consumption. At present consumer prices for fish are subsidized, and are approximately one-third the price of beef, and significantly below prices of chicken and pork.

Price of seven species of fresh fish are controlled by legislation. They include sardines, horse mackerel and jack mackerel. Prices charged for the more expensive species such as hake and corvina are not controlled.

As an illustration of what this means to the consumer, fresh or canned sardines can be purchased by Peruvians at US\$0.10 per kilogram under the present controlled price structure. Similar price controls also apply to some other canned fish products, such as grated fish.

Another factor is a government program known locally as beda, which is a prohibition on the sale of beef during the first fifteen days of every month. This measure was introduced by the Peruvian government in 1974 and may well have encouraged increased consumption of fish in and around the capital city, Lima. But it is very doubtful that it has had a significant effect in regions distant from the coast, given the lack of availability of quality fish products. If anything, it has probably resulted in increased per capita consumption of chicken and pork.

The Lima retail sales index tells much the same story. Although the level of sales for the first five months in 1980, in constant soles, has escalated by 13% in real terms to the 1976 average, the index has plunged by 24%. These two factors point out the deterioration of purchasing power during the recessionary cycle.

3. The role of EPSEP

The arrangement through which the state agency Empresa Peruana de Servicios Pesqueros (EPSEP), carries out its assigned responsibilities, is a complex one.

Before 1973, EPSEP owned a large fishing fleet, which has subsequently been reduced to six purse-seiners, four of which are equipped with refrigerated seawater systems for preserving the catch. EPSEP handles the catch of these six vessels, and is entitled also to purchase 20% of the catch from any joint-venture operations, including 10% of the hake catch. Under state legislation, these shares of the catch must be sold to EPSEP at agreed prices, including 700 tonnes of hake per month under an agreement between the Peruvian state agency and Polish vessels operating under a joint-venture agreement.

In addition to the above, EPSEP purchases the fish caught by the country's artisanal fishermen. The combined output from these various arrangements makes up the basic raw-material supply of fresh, fresh-frozen and canned fish to the domestic market.

The regulations do, however, allow some flexibility. Most of the domestic distribution and marketing is done by EPSEP, but if, for example, the state agency cannot handle all of the catch from the joint-venture operations, the participating companies are free to distribute and market it themselves.

Furthermore, even though Peruvian legislation requires that all domestic marketing of fish be done through EPSEP, in practice private industry deals directly with the artisanal fishery and markets locally fresh and some frozen fish from that source.

There is provision also for EPSEP to receive some of its supply from joint venture operations through regulations requiring that mackerel by-catches be sold to EPSEP. The government has issued forty trawler licences and allocated an allowable catch of 300 000 tonnes of whiting. Twenty trawlers are now operating, but they are only allowed to export whiting. The by-catch must be sold to EPSEP however EPSEP will only buy whole fish. This creates problems for the trawler operators, who are equipped to produce frozen fillets.

One entrepreneur who recently ran afoul of these very complex regulations was fined US\$35 000 for exporting mackerel fillets.

4. Future market prospects

All indications are that domestic consumption of fish and fish products will increase. EPSEP officials see tremendous potential for increased consumption of saltfish (primarily hake) which is at present popular only during the Easter season. Given the opportunity and potential for the catch of hake from Peruvian waters, it would appear that local supply will meet any increased demand.

D. COMPETITION WITH CANADA

1. Fisheries policy

Although there are a number of complex problems to be resolved, the Peruvian government is obviously determined to restructure and reorganize its fishing industry and to maintain its position as one of the world's leading nations in fisheries production.

In 1947, Peru declared its 200-mile fishing zone, but its policy concerning access to resources by foreign nations is still in the early stages of development. Joint ventures are permitted, provided that 51% of the capital investment is Peruvian.

Some foreign investment has already been authorized, for example, with Starkist, the US tuna canning company. As well, there are some joint-venture arrangements with Poland, involving both the purchase of vessels and market arrangements.

The state agency, EPSEP, is also considering joint ventures with interests in Spain, Japan and Cuba.

On the negative side of the equation, Peru has yet to develop adequate surveillance and enforcement capability. Peruvian officials suspect that Spanish, Cuban, USSR and Japanese vessels are fishing illegally, but the country lacks the resources to back up any charges.

The Government of Peru actively supports the export of fisheries products through a program known as CERTEX, which provides for a subsidy of 38% on the value of exports for all non-traditional products. In effect, this means all fisheries items except fish meal.

2. Canadian sales potential: very limited

As noted previously, the marketing opportunities for Canadian fish products in Peru are extremely limited because the Peruvian fisheries industry can serve its own domestic market, and because the country is in fact already a net exporter and has the potential of becoming an even more important one.

Canada's trade with Peru in fish and fisheries products since 1975 is detailed in Table 6, which shows that Canadian sales to Peru reached a peak in 1980 with a value of C\$361 000 but ~~export~~ exports in 1979 mounted to zero. It seems that exports are sporadic and unstable. This is also shown in the list of products exported. Canned herring is the only product which reappears from year to year.

3. Future potential for competition

Peruvian waters offer enormous potential catches of hake, mackerel and sardines. These products, and possibly sardine roe as well, may provide competition in the future for Canadian products in export markets.

There is still a degree of uncertainty as to the potential yield of Peruvian waters, but at the same time there are many possibilities that could develop into competition on world markets for Canada, including catches in Peruvian seas by foreign vessels operating under joint-venture agreements, direct allocations to foreign fishing vessels, and/or illegal fishing within Peru's 200-mile limit by foreign fleets. All of the foregoing could conceivably reduce opportunities for the marketing of Canadian products.

In addition to the possible future competition that the combined hake resources off South America may create, there is cause for concern in present Peruvian policy thrusts to expand food fish production, because if the objectives are achieved, markets for sardines and mackerel are essentially the same as Canadian markets. In addition, future fisheries policies in Peru related to joint ventures and access by foreign vessels to the fisheries resources within the Peruvian 200-mile zone may have some negative impacts on Canadian fish markets abroad. While these impacts are almost impossible to predict because of the lack of knowledge concerning the extent of resources, as well as the current state of fisheries policy development in Peru, one area requiring further consideration may be the potential effect on Canadian fish sales to the USSR and Eastern European countries resulting from catches of mackerel by these countries in Peruvian waters. Also of interest is the possible future of development of roe fisheries.

- On the subject of trade regulations, most important restrictions were eliminated by September 1980 and the maximum rate on custom house duties was reduced from 120% to 60%. Further tariff cuts are expected. In brief, the tariff policy has a twofold purpose: first, to contain inflationary pressures by increasing the stock of available goods and secondly to constrain domestic industry to be more competitive. The tariff measure has been opposed by many segments of the manufacturing sector who fear that the financial viability of their industries is being seriously jeopardized.

TABLE 6

Canada/Peru Fish Trade

Canadian Imports		tonnes	C\$000	Total value
		Q	V	
1980	Tuna, canned flake pack	86	224)	332
	Tuna, canned NES	23	55)	
	Shrimps, prawns, fresh or frozen	6	53)	
1979	Seafish, frsh or frozen, NES	1	3)	304
	Tuna, caned flake pack	22	45)	
	Tuna, canned NES	82	165)	
	Shrimps & prawns, fresh or frozen	11	91)	
1978	Tuna, canned flake pack	21	44)	145
	Tuna, canned NES	21	49)	
	Shrimps and prawns, fresh or frozen	4	42)	
	Shellfish, fresh or frozen NES	2	9)	
	Shellfish, and products NES	0	1)	
1977	Seafish, fresh or frozen NES	5	7)	50
	Tuna, canned flake pack	21	39)	
	Shrimps & prawns, frsh or frozen	1	4)	
1976	Seafish, fresh or frozen NES	2	2)	34
	Fish steaks, blocks etc., fresh or frozen	1	1)	
	Shrimps & prawns, fresh or frozen	8	31)	
1975	Cod, fresh or frozen	2	2)	81
	Seafish, fresh or frozen NES	24	12)	
	Tuna, canned NES	23	58)	
	Shrimps & prawns, fresh or frozen	2	9)	
Canadian Exports				
1980	Herring, canned NES	82	146)	361
	Fish & fish products, canned	131	215)	
1979	Nil			--
1978	Fish and fish products, canned NES	13	25	25
1977	Cod, boneless salted	1	7	7
1976	Herring, canned NES	178	9	--
	Fish and fish products, canned NES	261	15	36
	Herring oil	800	12	--
1975	Salmon, smoked	1	0	--

Source: Statistics Canada. Imports by Commodity, Ottawa.
Exports by Commodity. Various volumes.

E. SUMMARY AND CONCLUSIONS

1. Peru's coastline measures 2 330 kilometres, giving the country access to one of the world's most prolific fishing areas, off the Pacific coast of South America. However, in spite of this favourable location, the Peruvian fishing industry has experienced severe setbacks, notably the sudden decimation of the anchovy stocks, due to overfishing and a change in ocean current in the early 1970's. The anchovy catch plunged from 12.3 million tonnes in 1970 to around 1.3 million tonnes in 1979.

2. Since the decline of the anchovy, the Peruvian government has launched a program to restructure the industry and shift the emphasis from fish meal to production of fish and fish products for human consumption for both domestic and export markets.

3. In spite of the shift toward food products, Peru remains the world leader in both production and exports of fish meal, accounting for nearly 25% of the world exports in 1978. Experience has shown that other species of fish can replace the once-abundant anchovy as raw material for meal. Of Peru's total fish catch, 80% was still used for meal and oil in 1979, down from 98% in 1971.

4. The state agency responsible for fisheries and oceanographic research estimates that Peruvian waters can sustain an annual catch of 3 250 000 tonnes. At the same time, there are indications the anchovy stock may recover sufficiently to allow a harvest of 2 million tonnes. Some scientists are confident that fish landings of twenty million tonnes could be realized. Sound scientific information is lacking, and research projects are under way that may answer questions about the extent of resources.

5. While it has enormous potential, the Peruvian fishing industry is beset by serious problems. Among them: the fishing fleet, with few exceptions, lacks proper equipment for preserving fish on board; docks and unloading systems are inadequate; there is not an efficient transportation system for distributing fresh and frozen products in many parts of the country; canning plants have production capacity far in excess of what the fleet can supply at present, but quality control leaves something to be desired.

6. Given the difficulties noted above, consumption of fresh fish is confined largely to coastal regions, while consumers inland buy canned products (mostly sardines). The state agency, Empresa Peruana de Servicios Pesqueros (EPSEP) has as one of its basic objectives the promotion of increased consumption of fish and fish products. Government policies designed to encourage fish consumption include subsidizing the prices of most popular species and prohibiting the sale of beef during the first fifteen days of every month.

7. Sales opportunities for Canadian products are extremely limited. Canadian sales of fish to Peru reached a peak in 1980 (C\$36¹ 000) but in 1979, Canadian sales were zero. There seems little prospect for any future significant exports aside from canned herring and perhaps salted fish in small amounts.

8. Peru should be considered a major competitor, and one that will probably increase in significance. The government supports export sales by providing a subsidy of 38% on non-traditional products, which, in effect, means all fisheries items except fish meal.

9. Competition for Canadian suppliers could come from exploitation of abundant resources of hake off the western coast of South America. The Peruvian government's determination to expand food fish production could also make in-roads on Canadian markets for sardines and mackerel. Joint ventures and access by foreign vessels to Peru's 200-mile zone could also generate competition and, indeed, there is already concern over vessels from the Soviet Union and other Eastern European nations fishing in Peruvian waters. It is impossible however, to make accurate predictions because not enough is known about the extent of resources or the state of fisheries policy development in Peru.

A P P E N D I C E S

APPENDIX I

PERU: BASIC ECONOMIC INDICATORS

	<u>Jan-Dec.'80</u>	<u>Jan-Sept.'80</u>	<u>July-Sept.'80</u>
Balance of Payments:			
Current Account surplus/deficit			
Goods and services			
US\$ millions	-84.7	- 4.4	-63.1
	1979	1980	1981
Balance of Payments:			
Net Basic balance			
C = current account surplus/ deficit + long term capital			
+ net refinancing effect			
+ US\$ millions	1 386.8	529.1	-169.8
	Jan-Oct.'80		% Change 80/79
<u>Production</u>			
Fish catch for fishmeal			
000 tonnes	1 471.4		-42.9
Fish catch for human			
consumption - 000 tonnes	783.0		20.4
	Jan-Sept. '80		% Change 80/79
<u>Exports</u>			
Fishmeal			
Value US\$ millions	155.9		-22.7
Volume 000 tonnes	360		-36.2
Other fish products (food)			
Value US\$ million	69.3		43.3
Volume 000 tonnes	109		22.5

Source: Andean Report, January 1981. CALA Information Centre, Toronto, 1981.

