



International

FOOD AND AGRICULTURE ORGANIZATION

GOVERNMENTS AND INDUSTRY SEEK GREATER MARKETS FOR FISH MEAL:

The rapidly rising production of fish meal and the drastic fall in fish-meal prices were examined at an international meeting on fish meal, March 20-29, 1961, at the headquarters of the Food and Agriculture Organization (FAO) in Rome.

Convened by FAO by request of governments and with the backing of the fish-meal industry, the meeting considered practical steps towards increasing effective demand for fish meal and ensuring stable conditions in the market.

The world's productive capacity for fish-meal has risen rapidly during the last few years, from about 1.2 million metric tons in 1954 to 1.9 million metric tons in 1959.

Peru, with a fish-meal production of only 16,500 tons in 1954, had increased her production 20 times by 1959, ranking second to the United States as a producer with 332,400 metric tons. In the same period, neighboring Chile quadrupled her production; other important producing countries, such as Denmark, Iceland, the Union of South Africa, and the U. S. S. R doubled their production, and the United States raised hers by nearly one-fourth.

In the last two years the utilization of fish meal has not kept pace with expanding production. As a result, stocks have accumulated and during 1960 production had to be reduced in a number of countries. Prices have fallen from about \$130 a ton to \$75 a ton and the incomes of fishermen and producers have seriously declined.

This situation has caused deep concern among both producers and interested gov-

ernments and prompted the request to FAO to sponsor the meeting. Invitations were extended to FAO member governments to send representatives, accompanied by industry advisers and technical experts. Technical and scientific experts were also present as part of the FAO secretariat.

The meeting assessed both the short- and long-term world demand for fish meal and considered ways and means of increasing the use of the product by action on the part of governments and the industry.

The meeting hoped to find ways to stabilize conditions in the international fish-meal market without resorting to restrictive measures during the transitory period before the hoped-for increase in demand can take place.

INTERNATIONAL PACIFIC SALMON FISHERIES COMMISSION

SOCKEYE AND PINK SALMON FISHERIES REGULATIONS IN CONVENTION WATERS FOR 1961:

The tentative suggestions for regulatory control of the 1961 sockeye and pink salmon fishery in North Pacific Convention waters as submitted to the fishing industry on December 16, 1960, were discussed and reconsidered in view of suggestions submitted by the Advisory Committee at a meeting of the Commission held in Vancouver, B. C., on January 20, 1961. Action taken by the Commission in modifying the original proposals is detailed as follows:

Canadian Convention Waters:

1. Subject to the 1961 sockeye run equaling or exceeding a run of the order totaling 5,500,000 fish, the Commission agreed to consider the possibility of increasing fishing time at appropriate intervals during the run provided that the fishing effort was at such a level to warrant such consideration.

International (Contd.):

2. In view of the briefness of the prescribed fishing period in Area 20 and because no agreement could be reached between gear in regard to the weekly starting time, the commencement of gill-net fishing in this area was delayed until Monday evening. The delay in the weekly start of gill-net fishing in Area 20 will allow the Commission the minimum time required to consider regulatory changes for each weekly period before gill-net fishing is normally terminated and generally will deter the movement of boats to the Fraser River for an extra day of fishing.

3. Agreement was reached that the prescribed one-day weekly fishing period from August 20 to September 2 in Area 20 will be taken under consideration on the basis of the indicated abundance of the pink salmon run at the time.

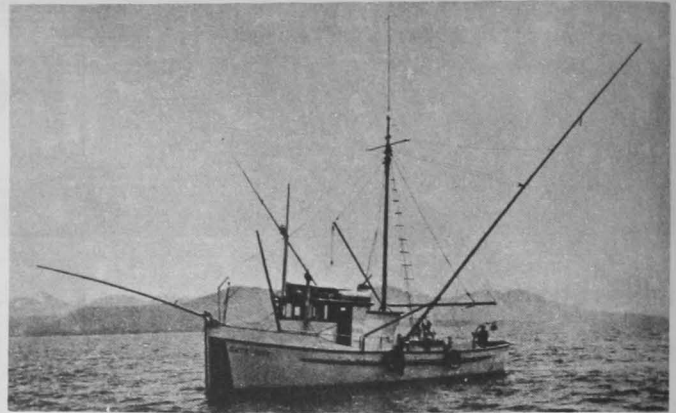
4. The dates for relinquishment by the Commission of regulatory controls in all Canadian Convention waters will be reconsidered at appropriate times during the course of the season.

5. The use of spring salmon nets was provided for in District No. I under the authorization of the Area Director of Fisheries during the month of September.

United States Convention Waters:

1. In view of the briefness of the prescribed fishing period during a major part of August and the lack of agreement of the gear in regard to the weekly starting time, the Commission reversed the normal pattern of starting time permitting the gill-net fishery to start first for the first part of the season ending August 5 and the purse seines and reef nets to start the fishing week first after that date. The change in procedure will allow the Commission the minimum time required to consider regulatory changes for each of the short fishing weeks before gill-net fishing is normally terminated.

2. Except for the seasonal opening and terminating dates of fishing in Juan de Fuca Strait, all fishing regulations applicable to this area were made to coincide with those effective in the inside Convention waters of the United States.



United States salmon troller fishing in Clarence Strait off Alaska.

3. The closure of all waters westerly of East Point Roberts from September 3 to September 23 to prevent the taking of "blowback" pink salmon was modified on the basis of further study to be effective only for the period September 3 to September 9. The easterly boundary of the closure for the period September 10 to September 24 was moved westerly to the Iwerson Dock-Active Pass line.

General:

A 48-hour weekly closure on commercial trolling by both United States and Canadian fishermen was recommended for the waters of Juan de Fuca Strait lying westerly of the William Head-Angeles Point line and easterly of the Bonilla-Tatoosh line. The restriction was not recommended for the high seas area of Convention waters pending a detailed study to determine the most practical means of providing for the requirements of the conservation of pink salmon where they are subject to a troll fishery.

Appropriate test fishing will be conducted by the Commission throughout the fishing season as a necessary check on the suitability of the current regulatory restrictions and of the escapement.

Note: See Commercial Fisheries Review, March 1960 p. 38.

TUNA

AFRICAN CONFERENCE HELD IN DAKAR:

A tuna biologists' conference, sponsored by the Commission for Technical Cooperation in Africa South of the Sahara, was held the latter part of 1960 at Dakar, Senegal, West Africa. It was attended by delegates from Cameroun, Dahomey, France, Guinea,

International (Contd.):

Liberia, Portugal, Somalia, United Kingdom, and the Union of South Africa and by observers from Nigeria, Senegal, United States, and the Food and Agriculture Organization of the United Nations. The attention of the conference was centered on summarizing existing knowledge of tunas in the seas around Africa. There was full recognition of the need for thorough scientific study of the tuna resources of the area in order to build a basis for evaluating the effect of a growing fishery on the populations of tuna.

According to the United States observer, little is known at present of the size of the tuna stocks of the Atlantic, but the physical and biological conditions off the African west coast are generally similar to those in the major American Pacific tuna fishing grounds off the west coast of Central and South America, and there appears to be a very strong probability that the new Atlantic fishing grounds can support a large-scale production on a continuing basis.

AFRICAN OCEANOGRAPHY AND
MARINE FISHERIES CONVENTION

Specialists representing research institutes on the west coast of Africa in the field of sea fisheries and oceanography, convened in Monrovia, Liberia, from December 5-10, 1960, to study proposals for implementing regional coordination and cooperation in oceanography and marine fisheries. The meeting was held under the auspices of the Scientific Council for Africa.

The following governments were represented by observers: Cameroun, Republic of Congo, France, Guinea, Liberia, and Ghana.

Proposals were made by these specialists for a joint action program between research institutes and government departments concerned with research on the west coast of Africa. One or more oceanographic surveys are planned. An oceanographic and fishing expedition in the Gulf of Guinea has been proposed. Organizations outside Africa have expressed an interest in providing assistance. The representative of FAO said organizations would be willing to assist in locating and recruiting additional qualified scientists and technicians as member governments could not supply more than one-third the scientists and technicians required.

The International Cooperation Administration previously indicated an interest in providing financial assistance.

The following problems of regional coordination and cooperation were discussed:

- (1) Zoological Systematics (Identification Problems).
- (2) Biology of Useful Species.
- (3) Physical Oceanography (Hydrology).
- (4) The Lack of General Equipment.
- (5) Technology of Fishing.
- (6) Technology and Marketing of Fish.

Among the recommendations drafted at the end of the meeting were the following:

- (1) A list of major species of commercial value in West African waters with sketches for identification.
- (2) A working group to make a more thorough study of the genus Sardinella.
- (3) The need to train African research workers in the field of marine science.
- (4) Governments in Africa, south of the Sahara, to consider ways and means of improving statistical services.
- (5) The publication of pamphlets to follow the future evolution of fisheries.
- (6) Studies in respect to certain groups of crustaceans and molluscs.
- (7) A study of the problem of beetle damage to fish products.
- (8) The study of fish species.
- (9) The preparation and distribution of a bibliography of oceanography and marine biology. (International Cooperation Administration report from Monrovia, December 22, 1960.)



Algeria

SHRIMP INDUSTRY:

The Algerian shrimp industry, along with the rest of the fishing industry in Algeria, is characterized by outmoded techniques and equipment, and a "traditional" spirit among most of the fishermen. The largest shrimp grounds are located near the ports of Algiers, Nemours, and Oran. According to a recent study by a semiofficial organization, there are only a few small plants where shrimp are processed; the processing consists of preparing the shrimp for export under refrigeration.

Official statistics provide data only on the combined catch of shrimp ("crevettes grises"), prawns ("grosses crevettes," "bouquets" or "crevettes rouges"), and crayfish or spiny lobster ("langoustes"). Annual landings (heads-on) of these crustaceans have been rather stable in recent years, averaging about 1,500 metric tons per year. Shrimp caught by individual fishermen in small boats are not included in the official data. Landings in 1959 of 1,014 tons of "crevettes" were below the 1956-58 average.

Data on the breakdown of vessels by type of fishing are not available. For the entire Algerian coastal shipping fleet, official statistics list a total number of 882 boats, a combined tonnage of 6,545 tons, manned by 4,505 men. It is believed that practically all of the local fishing fleet is French-owned and that there is no United States investment in the industry.

All shrimp exports in recent years have been listed as "crevettes--autres," which presumably means prawns ("crevettes rouges") or a similar type of crustacean. There were no exports of common shrimp ("crevettes grises") during the 1956-59 period. The average export price for the "crevettes--autres" rose from 5,777 NF (new francs) or US\$1,651 per metric ton in 1956 to 6,658 NF (about US\$1,359) per metric ton in 1959.

Year	Imports ^{1/}			Exports ^{2/}		
	Quantity	Value		Quantity	Value	
	Metric Ton	1,000 N.F.	US\$ 1,000	Metric Ton	1,000 N.F.	US\$ 1,000
1959 . .	1.8	17.0	3.5	95.4	635.6	129.7
1958 . .	2.1	14.9	3.5	293.6	1,888.4	449.6
1957 . .	10.3	31.7	8.6	368.2	2,126.3	578.6
1956 . .	35.9	46.0	13.1	464.0	2,584.4	738.4

^{1/}Imports were all from France and Morocco.
^{2/}Exports to countries other than France were less than 1 ton.

There are no controls nor taxes on the export of shrimp. Exports have declined probably because of a growth of the internal market at the same time that the quantity of landings have remained stable.

A crew member of a shrimp boat received about 300 to 400 NF (US\$61-82) per month in 1959. The total "value added" (gross income less material and equipment expenses) by the entire fishing industry of Algeria in 1959 was only 25 million NF (about US\$5.1 million). The total value of all shrimp, prawns, and crayfish landed in 1958 was about 4.8 million NF (about \$1.15 million).

Table 1 - Algerian Landings of Shrimp, Prawns, and Spiny Lobster by Ports, 1956-59

Port of Landing:	Quantity							
	1959	1958	1957	1956				
	(Metric Tons)							
Algiers	385	500	539	563				
Oran	208	293	327	609				
Nemours	241	384	284	-				
Bone	113	202	254	181				
Philippeville	46	51	74	108				
Bougie	38	21	60	-				
Total	1,031	1,451	1,538	1,461				
	Value							
	US\$1,000	1,000 N.F.	US\$1,000	1,000 N.F.	US\$1,000	1,000 N.F.	US\$1,000	1,000 N.F.
Algiers	306	1,499	393	1,650	344	1,266	427	1,496
Oran	155	758	212	890	226	830	468	1,638
Nemours	249	1,222	345	1,450	242	888	-	-
Bone	80	393	143	600	194	713	151	529
Philippeville	20	99	26	110	46	168	-	-
Bougie	44	214	24	100	45	167	98	343
Total	1,854	1,418	1,143	4,800	1,097	4,032	1,144	4,006

^{1/}Includes 17 metric tons of spiny lobsters valued at 203,000 NF. (US\$42,000).

Algeria (Contd.):

The study mentioned on the previous page states that there is only a limited amount of shrimp available at the depths that are presently being fished (up to 114 fathoms). It also estimates, however, that there are good possibilities for expansion of the catch if the fishermen will modernize their equipment and trawl in waters from 114 to 365 fathoms in depth where the shrimp are reported to be numerous. In recent years the government has studied the problems of the fishing industry and has made general plans for modernizing it and increasing production. As of the present date, however, little has been done to carry out this program. (United States Consulate, Algiers, December 29, 1960.)

Note: NF or "new" francs, new unit of currency adopted as of January 1, 1960, equals 100 "old" francs. Official conversion rates are: 3.5 NF or 350 "old" equals US\$1 1951-Sept. 1957; 4.2 NF or 420 "old" equals US\$1 Sept. 1957-Dec. 1958; 4.9 NF or 490 "old" equals US\$1 Jan. 1959 to date.



Angola

FISH MEAL AND OIL PRICES, DECEMBER 16-31, 1960:

Beginning in October 1960, the Fishing Institute of Angola established minimum f.o.b. export prices for fish meal and oil. These minimum prices are set fortnightly by the Institute. The following prices were set for the second half of December 1960: Fish Meal: Type 1 (from fully mechanized plants), 2.14 escudos a kilo or about US\$67.87 a short ton; and Type 2 (sun dried), 1.80 escudos a kilo or about US\$57.08 a short ton. Fish Oil (based on acidity): 3° and lower, 3.20 escudos per kilo (5.074 U. S. cents a pound); 3° to 5°, 2.80 escudos per kilo (4.44 cents a pound); 5° to 10°, 2.30 escudos per kilo (3.647 cents a pound); 10° to 20°, 1.80 escudos per kilo (2.854 cents a pound); and 20° and over 1.40 escudos per kilo (2.22 cents a pound).

A subsidy has been granted to Angolan fish-meal producers for their exports since July 1, 1960: \$15 per metric ton has been given for mechanically-dried fish meal, and \$10 per ton for sun-dried. The subsidy has applied to exports from July 1, 1960, to December 31, 1960. Just what is to be done regarding the subsidy in 1961 has not been

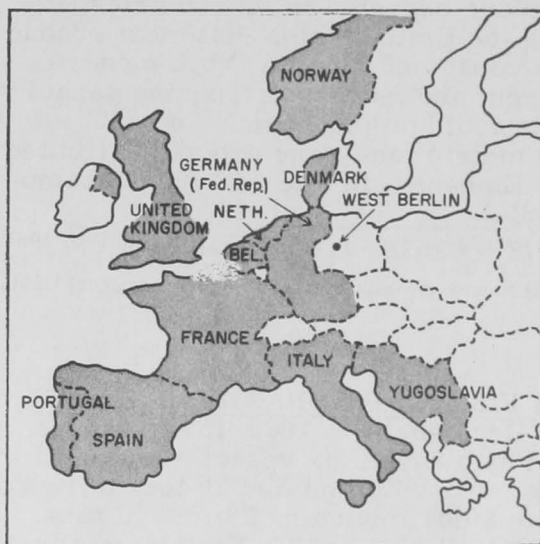
decided. (United States Consulate, Luanda, January 9, 1961.)



Belgium

FISH-MEAL PRICES, JANUARY 1961:

Belgium fish-meal prices early in January 1961 were as follows: Imported Meal: 65 percent protein, US\$77.35 per metric ton or about \$70.15 a short ton, c. & f. Antwerp (80-90 percent digestible). Domestic Whole



Meal (fish solubles added): 70 percent protein, \$112.00 a metric ton or about \$101.61 a short ton f.o.b. plant (93-94 percent digestible). Domestic Regular Meal: 50-55 percent protein, \$69.50-76.45 a metric ton or about \$63.05-69.36 a short ton f.o.b. plant (about 90 percent digestible). (United States Consulate, Antwerp, January 5, 1961.)



Brazil

SHRIMP INDUSTRY:

A modern shrimp processing plant is located in Belem, Brazil, using a quick freezer and a grader.

In the city of Rio Grande, ten firms are active in the shrimp industry; two additional firms freeze and process shrimp in brine and engage in general fish preserving. The

Brazil (Contd.):

and engage in general fish preserving. The lack of freezing facilities, refrigerated warehouse space, and obsolete installations have kept Brazil's production low and costs very high.

Brazilian shrimp fishermen earn approximately 10,000 cruzeiros (US\$49) a month plus food. Masters of fishing vessels earn US\$500 a month.

The possibility of expanding the total annual catch of shrimp is good; brown and pink shrimp are exported to all countries, including the United States, but most production is consumed locally. With modern equipment and increased freezing capacity, exports could be increased. In 1960, a total of 100 metric tons were exported. (United States Embassy, Rio de Janeiro, December 16, 1960.)

Note: (1) Also see Commercial Fisheries Review, Feb. 1961, p. 38.

(2) Values converted at rate of 204 cruzeiros equal US\$1.

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TUNA FISHING BY BRAZILIAN VESSEL:

On December 20, 1960, the first tuna caught by a Brazilian vessel was landed in Santos. The catch totaled 30 tons of fish of various kinds, including 23 tons of tuna. Hitherto, all tuna sold in Santos and Sao Paulo had been caught by a Japanese fishery company which operates a fleet of modern fishing vessels from that port.

The Brazilian vessel, the Joana Hora, is 10 or 12 years old, and was recently purchased at auction by an individual associated with a Santos fishery cooperative. The vessel was out 20 days fishing south of Cabo Frio, State of Rio de Janeiro, where tuna can be found in large quantities during the summer season. The crew consisted of the captain, two Japanese technicians, and 16 men.

According to reports, due to lack of refrigerating facilities aboard the Joana Hora, the vessel's catch was spoiled by the time the boat docked at Santos. Because he cannot afford to outfit his vessel with a refrigerating compartment, the owner will give up fishing for tuna and will limit activities to fishing expeditions of not more than 5 or 6 days to catch other species of fish close to the Sao Paulo State coast.

According to reports, the failure of Brazilians to develop commercial deep-sea fishing because of lack of funds may move the Sao Paulo State Government to set up a program for financing the purchase of modern vessels and gear by Brazilian fishermen. Such a program has been under consideration for some time but no practical measures have been taken so far. (United States Consulate, Sao Paulo, Brazil, December 30, 1960.)



Canada

BRITISH COLUMBIA FISH-MEAL INDUSTRY TRENDS:

The British Columbia herring fishery resumed operations on November 20, 1960, following an 11-months tie-up of the fishing vessels over a dispute between the fishermen and the reduction plants concerning ex-vessel prices.

About 90 percent of British Columbia's fish-meal production is exported, and the United States is its principal market. When herring fishing resumed in November 1960, export prices were about C\$1.45 a protein unit (C\$104.40 a short ton) f.o.b. Vancouver. Two weeks later prices had dropped to C\$1.40 a protein unit (C\$100.80 a short ton), and as of December 15, 1960, the price was down to C\$1.35 a protein unit (C\$97.20 a short ton). Prices are based on fish meal of 72 percent protein.

Sources in Vancouver report that British Columbia herring meal is preferred in the United States because of its better grind, color, and protein content. However, the same source claims that Peruvian competition has been successful in forcing lower prices. The British Columbia herring meal export prices about mid-1959 were C\$2.10 a protein unit (C\$151.20 a short ton) and as of December 1959, the export price was about C\$1.70 a protein unit (C\$122.40 a short ton).

The herring fish-meal reduction plants agreement with the fishermen, which resulted in fishing being resumed late in 1960, is subject to cancellation if economic conditions force prices down to an unprofitable level. (United States Consulate in Vancouver, December 15, 1960.)

Note: C\$1 equal to US\$0.9825.

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Canada (Contd.):

BRITISH COLUMBIA SHUCKED OYSTER PRODUCTION, 1960:

The British Columbia shucked oyster production in 1960 was substantially lower than in 1959, but significantly higher than in 1958 when 62,834 Imperial gallons were purchased. Prices to producers for shucked stock in December 1960 were as follows for Imperial measures: half-pints, C\$0.30-0.60; pints, \$0.60-0.75; quarts, \$1.00-1.65; gallons, \$3.00-5.25. In December 1959 the price for gallons was \$4.00-5.25.

British Columbia Oyster Meats Production, 1959-60		
Imperial Measures	1960	1959
Half pints	377,363	386,713
Pints	18,569	13,576
Quarts	24,990	24,965
Gallons	43,712	56,827
Total in Imperial Gallons	78,395	92,741

Retail prices in Vancouver on January 16, 1961, were C\$0.55 for an Imperial half-pint container, compared to \$0.52-0.55 on January 15, 1960.

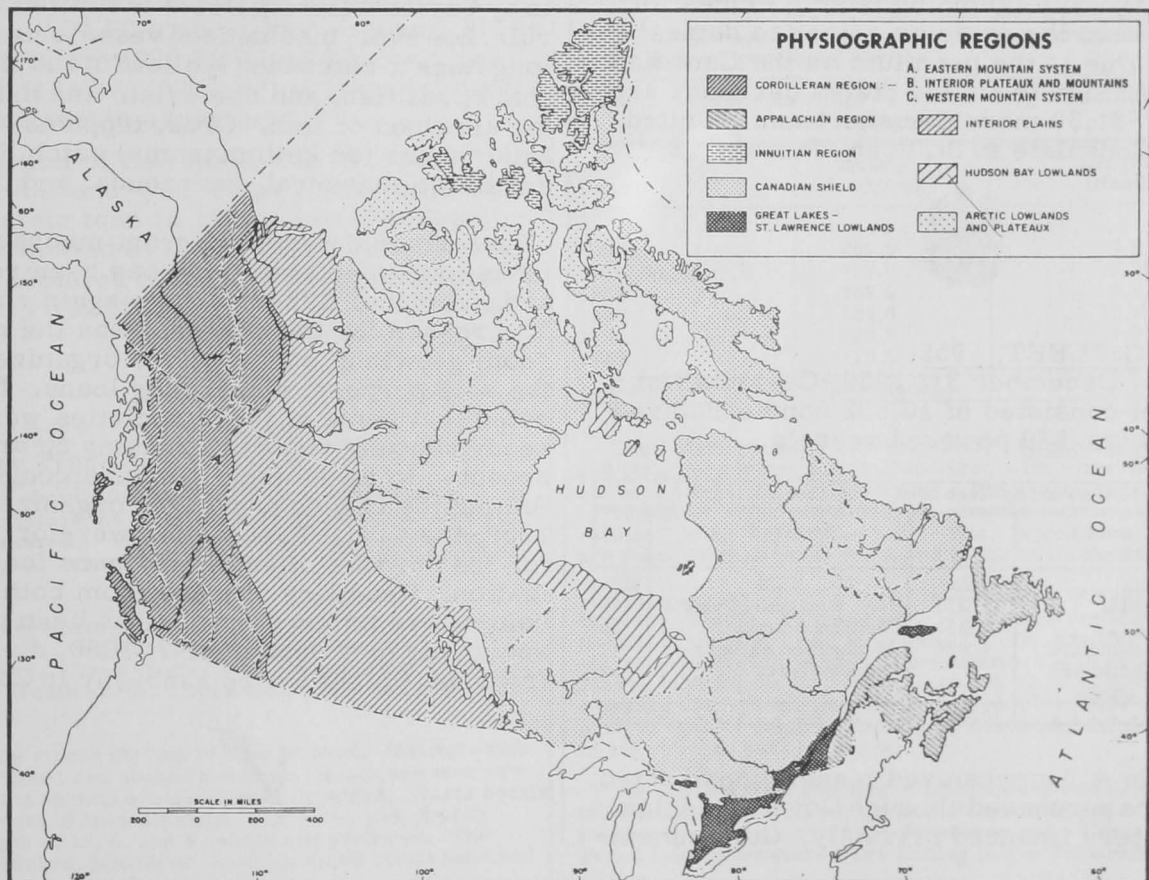
Note: See Commercial Fisheries Review, April 1960 p. 39.

CONFERENCE ON NATURAL RESOURCES SCHEDULED FOR OCTOBER 1961:

A conference on "Resources for Tomorrow" has been planned by Canadian Government experts, to be held in Montreal in October 1961. This will be the first major Government-sponsored resources conference held in Canada since 1906. The eleven major Canadian governmental units are sponsoring the conference.

Planning for the Conference went ahead another step as members of the Policy Subcommittee met in Ottawa on December 12-13, 1960. The Conference will study ways and means of making better use of Canada's resources of agricultural land, forests, fisheries, wildlife, and water. Recreational use of resources will be an important topic at the Conference.

About 80 background papers are being prepared at the present time, outlining various resource use problems facing Canadians. Leading resources experts from across the nation are preparing the papers. It is expected that 500 or more resource specialists will attend the Conference, including most of



Canada (Contd.):

the country's natural resource department Ministers, representatives of many national and regional organizations, representatives of universities, business, and industry.

Canada's method of approaching these and many other problems, through the "Resources for Tomorrow Conference," is being watched with interest by other nations with similar problems. Secretary to the Conference mentioned that several resources specialists of the United States government wished to attend as observers, as did officials of "Resources for the Future," a continuing body sponsored by a private United States foundation. Individuals of several other countries have asked for information, the United States Embassy in Ottawa reported on December 19, 1960.

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NEW BRUNSWICK FISH MEAL PRICES, JANUARY 1-15, 1961:

Fish meal prices (60 percent protein) quoted by three of the largest New Brunswick, Canada, dealers early in January this year were C\$72-75 a short ton (C\$1.20-1.25 a protein unit), f.o.b. shipping point. Prices for export were the same as prices to domestic users. Due to the premium on the Canadian dollar, prices in United States currency are about US\$1.50 more per short ton. (United States Consulate in St. John, January 12, 1961.)



Ceylon

FISHING FLEET, 1959:

As of December 31, 1959, Ceylon's fishing fleet consisted of 16,552 nonmechanized vessels and 539 powered vessels.

Ceylon's Fishing Fleet as of December 31, 1959			
Nonmechanized Vessels		Powered Vessels	
Type	No.	Type	No.
Orus and kullas . . .	7,215	New mechanized vessels	415
Vallams	2,611	Mechanized orus	25
Teppams, catamarans	4,936	Mechanized vallams . .	99
Parus, flat-bottomed boats and others . .	1,790	and padavus	
Total	16,552	Total	539

Of the 415 mechanized vessels constructed, 334 were purchased through Government loans and 81 were financed privately. Government-

financed vessels constructed as of October 1960 numbered about 500 at an expenditure of approximately Rs.8.5 million (about US\$1.8 million), the purchase price of an average vessel and gear being Rs.17,500 (about US\$3,700). If present plans are carried out, construction in 1960-61 will be increased to 800 boats with a similar number in 1961-62, making a total of 2,110 boats, all under three tons.



In 1955 the Food and Agriculture installed two motors on Ceylon craft. This experiment proved successful and since then additional vessels have been motorized.

Information on the type of fishing engaged in by Ceylon's fishing fleets is limited. As a rule, however, mechanized vessels use tuna long lines to catch tuna (yellowfin and big-eyed), shark, sailfish, and spearfish; and drift nets for all types of fish. Orus, teppams, vallams, catamarans (or kuttumarams) catch Spanish and horse mackerel, barracuda, and bonito.

A former decision to grant mechanization loans to cooperatives only has been reversed and individual fishermen are again eligible. The reason for the reversal was the mushroom growth of cooperatives organized for the sole purpose of obtaining loans. It was noted that some of these societies were already showing signs of breaking up and were expected to cease functioning as cooperatives. Among the new cooperatives organized during 1959, the first 101 societies were organized for the purpose of obtaining loans for mechanization. Recovery of loans from both individuals and registered groups has been poor, according to a December 7, 1960, dispatch from the United States Embassy in Colombo.



Chile

FISH MEAL EXPORTS AND PRICES:

Chile's exports of fish meal for 1960 amounted to 26,433 metric tons valued at US\$1,990,690. The average export value per metric ton was about US\$75.31 (\$68.32 a short ton). The Export Division of the Central Bank reports November-December 1960 prices f.o.b. as follows: United States, US\$68.84 a metric ton (\$62.45 short ton); Germany, \$68.71 a metric ton (\$62.33 a short ton); Belgium, \$67.37 a metric ton (\$61.12 a short ton); and Netherlands, \$65.96 a metric ton (\$59.84 a short ton).

Only firms located in Arica and Iquique, which are subsidized, are now selling in the international market as the export price is below production costs. On six shipments of anchovy fish meal made from Arica on December 22, three shipments to the Netherlands of 200 metric tons sold at \$63 a metric ton (\$57.15 a short ton), while three shipments to the United States of 650 metric tons ranged from \$61-64 a metric ton (\$55.34-58.06 a short ton). Protein content of Chilean fish meal runs 64-72 percent.

Fish meal sells locally at about \$100 a metric ton (\$90.72 a short ton) at plant; \$110-120 a metric ton (\$99.79-108.86 a short ton) delivered at farm. This price is maintained by a "gentlemen's agreement."

Production of fish meal was 30,673 metric tons in 1959 and was expected to exceed 40,000 metric tons in 1960. Local consumption is estimated at 8,000-9,000 metric tons annually. (United States Embassy in Santiago, January 16, 1961.)

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SHRIMP AND "LANGOSTINO" INDUSTRY, 1960:

The entire shrimp industry of Chile, centered near Valparaiso, utilizes the small cold-water deep-sea shrimp, known as "camaron." It is found off the coast of the Provinces of Valparaiso and Aconcagua from Los Vilos to El Quisco.

Trawling for shrimp began in 1953. All are landed heads-on. There were five plants processing frozen shrimp in December 1960. Three plants, two of which are of the five that process frozen shrimp, can a limited amount of shrimp in brine.

Processing frozen shrimp is done by hand. Shrimp which average 120 count are cooked heads on. Heads are then removed, and the shrimp are peeled and deveined. Waste equals 70 to 80 percent of landed weight. For home use, frozen block packages of 12, 8, and 4 ounces are prepared. The shrimp are packed, jumble or layer, in small metal pans and

placed on trays for freezing. Both blast freezing and air freezing are used. The frozen blocks are reglazed, sealed in plastic bags, and packed for shipment in cartons of approximately 20 pounds. The 2- and 5-pound jumble packs are used by institutions. To assure good frozen shrimp in the center of the larger packages, the shrimp are first frozen individually, then reglazed, jumble packed in plastic bags, and placed in shipping cartons of approximately 20 pounds. These cartons are returned to the cold room for the final slow freeze. Monthly shipments are made by most packers. Canned shrimp are sold primarily in interior markets; none are exported.

Since hand labor is not cheap, one plant is considering installing a small peeling machine manufactured in Germany. Four plants now engaged in fish canning will process frozen cooked shrimp and lobster soon.

Also found in Chilean waters is the "plate lobster" or crawfish known as the "langostino." It is caught off the coast from Coquimbo to San Antonio, and should not be confused with the large white tropical shrimp also called "langostino" but which is not caught in any quantity or exported. The Chilean "langostino" is sold in the United States as "baby rock lobster type." It is not a true rock lobster nor a shrimp.

The "plate lobster" or "langostino" is processed by the same plants as shrimp. It is landed heads-on and cooked, peeled and deveined in the same manner as shrimp. Waste equals 90-95 percent of its landed weight. The heads-off count is 80-120 a pound. They are frozen, jumble pack, in 8- and 12-ounce block packages for retail sale and in 2- and 5-pound plastic bags for institutional use. More plate lobster is canned than shrimp. Until 1960 the plate lobster predominated in the frozen shellfish industry.

Chilean shrimp or "camaron" (*Phynchocinetes typus*) are captured at a depth of 100 fathoms or more by trawlers. The heads-off count averages 100-150 a pound (heads on). They are taken the year-around, with best trawling from May to December. Landings from December-April include small undeveloped young shrimp.

Table 1 - Chile's Landings of Shrimp and "Plate Lobster" or "Langostinos"

Year	Shrimp (Heads-on)	"Langostinos" (Heads-on)
. (Metric Tons)		
1960 ^{1/}	1,800.0	6,860.0
1960 Jan.-Apr. ^{2/}	687.0	2,285.7
1959	882.0	5,814.0
1958	382.0	12,829.0
1957	128.8	11,383.8
1956	115.0	5,705.9

^{1/}Estimate.

^{2/}Actual landings.

The "plate lobster" or "langostino" (*Munida gregaris* and *Gulatheus monodon*) is also taken with otter trawls but at depths of 50 to 100 fathoms. The season is from May to December. The same fleet fishes either shrimp or "langostinos" in the Valparaiso zone. The "langostinos," however, are found farther to the north and to the south than the shrimp.

Chile's commercial fishing fleet consists of 38 trawlers and 47 purse seiners. Of these only 16 trawlers are engaged in fishing for shrimp and "langostinos." The smaller trawlers are 44 to 60 feet in length and are equipped with 100-170 hp. Diesel engines; the larger trawlers are 65 to 85 feet in length and have 250-300 hp. Diesel engines. All use otter trawls. Most of Chile's commercial fishing boats may be used either as trawlers or purse seiners.

The shrimp fleet consists of plant-owned and independent trawlers, mostly Chilean-owned. Processing plants have at least one vessel chartered. A Japanese- and a German-owned fleet of trawlers were fishing in the Valparaiso-San

Chile (Contd.):

Antonio areas as of December 1960 and may be catching shrimp as well as hake for fish-meal plants.

Construction and maintenance facilities for small fishing boats are limited. Boat building in the south of Chile has been restricted to small single units. Some large boats of 80-100 ton holding capacity are constructed in the Valdivia area destined primarily for use in northern zones for industrial fishing. These boats equipped to fish cost approximately Chilean escudos 60,000-70,000 (US\$56,980-66,476)--approximately the same as foreign-constructed vessels. The first modern boat yard for construction of fishing boats to be established in Chile will be at Iruique; production is expected by mid-1961.

The increase in trawlers fishing for shrimp will be influenced primarily by the supply and price of "langostino." Shrimp are found in colder water and at a greater depth, but in a smaller area. Trawlers are equipped to fish either shrimp or "langostino." Four more plants are expected to process shrimp and "langostino," therefore, trawlers now fishing for hake may transfer to shrimp and "langostino" if the price of fish meal should decline.

Chile's shrimp exports are cooked and frozen. The small 4-, 8-, and 12-ounce bar packages for home consumption presently are selling at US\$0.65 per pound f.o.b. Valparaiso. Frozen "langostinos" sell at approximately the same price as shrimp. During 1959 shrimp sold f.o.b. Valparaiso for US\$0.60-1.20 per pound. The commercial or institutional pack is believed to be less than 25 percent of total exports.

Table 2 - Chile's Exports of Shrimp and "Langostinos," 1957-59.

Year	Shrimp		"Langostinos"	
	Quantity	Value	Quantity	Value
	Lbs.	US\$	Lbs.	US\$
1959	192,263	118,654	631,541	368,453
1958	63,184	31,019	1,036,616	776,765
1957	39,054	22,636	1,122,850	1,033,432

There is no export tax in Chile. The Government is encouraging the development of the fishing industry through its loan program and incentives to private capital. A law authorizes concessions and exemptions for entities engaged in any phase of the fisheries industry. Included is a 90-percent reduction in taxes on earnings and real estate, exemption from production, sales and stamp taxes, and free importation of boats, machinery, equipment, etc. Concessions are applicable to December 31, 1973, but entities are required to reinvest 75 percent of profits for the first 10 years in development of the industry.

Processing plants currently are purchasing whole shrimp at dockside for Ch/E 1.20 per case of 15 kilos or Ch/E 80 per metric ton (3.5 U.S. cents a pound or US\$76 per metric ton). The "langostino" sells at dockside for Ch/E 0.65 per 13-kilo basket or Ch/E 50 per ton (2.2 cents per pound or US\$47.63 per ton). The price of shrimp purchased for industrial use was Ch/E 70 per ton January-March and Ch/E 60 in April 1960. "Langostino" sold at Ch/E 50 (US\$48) per ton January-February, and Ch/E 60 (US\$57) March-April.

Crews on company-owned boats receive approximately 36 percent of the value of the catch. Trawlers have a 6- to 9-man crew. Each trip averages 5 to 7 hours. In midseason a trawler may catch 3 to 3½ tons of shrimp or "langostino." Captains earn about Ch/E 500 (US\$476) per month but master fishermen earn up to Ch/E 800 (US\$761). Crewmen average about Ch/E 100 (US\$95) per month.

Production costs average Ch/E 0.40-0.45 (38-43 U.S. cents) per pound of cooked frozen shrimp delivered dockside for export. Plant costs are as follows: peeling-Ch/E 0.051 (5 cents) per pound; washing and cooking-Ch/E .25 (2 cents) per pound; unloading, molding, freezing and packing-Ch/E 0.165 per pound (16 cents).

Labor costs are weighted by high Social Security payments; the employers' share amounts to 36 percent and the workers' share is 7.5 percent.

Exports of frozen shrimp from Chile to the United States have a freight rate of US\$110 per metric ton. Frozen "langostino" rates are US\$100 per ton provided the shipment does not exceed 75 cubic feet per 1,000 kilos (2,204.6 pounds) in size. "Langostino" shipments exceeding 75 cubic feet per 1,000 kilos pay US\$125 a metric ton.

Shrimp landings increased substantially in 1960, and shipments are expected to equal if not exceed those of "langostino." In 1959 exports of shrimp were less than a quarter of "langostino" shipments. The increase is due in part to the declining price of "langostino" and to increased acceptance of small Chilean shrimp. Moreover, year-around fishing has proved to be profitable.

The United States is Chile's only export market for cooked, frozen shrimp. Some frozen "langostino" was sold in European markets during 1960. With increased shrimp landings, frozen cooked shrimp should move into those markets also.

Table 3 - Chile's Exports of Cooked Frozen Shrimp and "Langostinos," 1957-1960

	Shrimp		"Langostinos"	
	Quantity	Value	Quantity	Value
	1,000 Lbs.	US\$ 1,000	1,000 Lbs.	US\$ 1,000
1960 (Jan.-Aug.):				
Total Exports	367	156	740	374
United States	367	156	723	364
Germany	-	-	14	8
United Kingdom	-	-	2	1
Curacao	-	-	1	1
1959:				
Total Exports	74	25	902	445
United States	74	25	896	441
Germany	-	-	6	4
Bolivia	-	-	1/	1/
1958:				
Total Exports	62	-	1,084	2/
To United States	62	-	1,084	761
1957:				
Total Exports	33	23	842	660
To United States	33	23	842	660

1/ Less than 1,000 lbs. and US\$1,000.

2/ Detailed data not available.

Note: Values converted as follows: 1957 and 1958, Chilean peso 4.85461 gold weight 6 drams equals US\$1; 1959 and 1960, Chilean escudos 1.051 equals US\$1.

Expansion in Chile's shrimp industry will be in the number of plants processing shrimp rather than the types produced. Locally-made cans do not meet United States Government specifications. The Chilean Government permits the import of foreign tinplate for canning purposes provided the product is for export. To date none of the fish-canning plants have entered the export market. (United States Embassy, Santiago, December 12, 1960.)



Colombia

FISHERIES NEED GOVERNMENT SUPPORT:

Landings of fish and shellfish in Colombia amounted to 30,102 metric tons in 1957 and 24,909 metric tons in 1958, mainly from the Magdalena River and tributaries. The fishing industry, which recently attracted considerable private investment, is in danger of dying out for lack of resources, if the Government does not carry out some investigations



Wood fishing boats carved from a single trunk on Richacha Beach, Colombia.

on the extent of the fish and shellfish stocks and institute conservation measures. Deep-sea fishing combined with a shrimp fishery could be profitable, with special incentives from the Government such as, marketing facilities, legislative measures, etc. In developing tropical river fishing, it would be necessary to create an extension fishing service. The fisheries training center in Buga could be used in the initial stage. (United States Embassy in Bogota, January 6, 1961.)

* * * * *

FISHERY TRENDS, DECEMBER 1960:

An official of the Colombian Hunting and Fishing Department of the Ministry of Agriculture will be assigned to Buenaventura as Chief of a new fishery research laboratory (Centro Piscicola de Buenaventura) scheduled to be opened in January 1961. This new laboratory will concern itself primarily with research in the Pacific coastal fishing grounds between Boca San Juan and Tumaco.

According to the official, fish research stations are already in operation at Buga (Valle) and Lake Tota, with a new center to be opened at Ciénaga shortly, which will be in addition to the Buenaventura station.

He also said that he recently spent about ten days in the Pacific coastal areas assisting a Japanese in making soundings and studying the possibilities for tuna operations along that coast. The Japanese also operate one tuna vessel along the Atlantic coastal areas,

which presently constitutes the only tuna operation in Colombian waters, states a December 19, 1960, dispatch from the United States Embassy in Bogota.



Costa Rica

SHRIMP INDUSTRY:

The fishing companies on the Pacific Coast of Costa Rica engaged in the shrimp fishery have not yet been able to overcome the economic and technical difficulties which have plagued them for years. Because of the virtual impossibility of obtaining bank credits, and the lack of interest by the National Production Council of Costa Rica, the shrimp fishermen have been obliged to sell exclusively to two shrimp-packing concerns. These concerns have been able to dictate their own price and terms as they are the only ones in a position to liquidate accounts with the fishermen upon their return to port with their catches. The Fishermen's Association of Puntarenas states that a loan of about US\$65,000 for financing is needed in order to place the industry on a sound footing. The Association claims that \$45,000 is needed to pay off an existing indebtedness with the present buyers, and \$20,000 for working capital from which fishermen could be paid for their catches, and which would be restored after final liquidation of the purchase with the foreign importer.

Total direct investment in the Costa Rica shrimp and fish industry is estimated at 9.5 million colones (about US\$1.4 million). Total direct and indirect investment (including ice plants, ship chandlers, boat repair, etc.) is calculated at 20 million colones (about US\$3.0 million). Roughly 800 families depend upon the industry, and this figure, in turn represents about 25 percent of the population of puntarenas.

The physical facilities of the Costa Rica shrimp industry are generally inadequate. Cold-storage facilities available on the mainland are operated by the National Production Council and the two independently-operated plants in Puntarenas. Handling and processing facilities ashore and aboard vessels could be improved upon without any significant additional cost. The poor local handling of shrimp generally results in a loss of at least 10 cents a pound.

Costa Rica (Contd.):

The Pacific Coast shrimp fleet of Costa Rica in the past operated only inside the Gulf of Nicoya in a fairly limited area and in shallow waters along the western shore, fishing at approximately 8 fathoms. As this protected area no longer produces suitable shrimp in commercial quantities, the fleet has extended its explorations into the coastal waters of the Pacific Ocean, from Cabo Blanco (at the mouth of the Gulf of Nicoya) as far north as the Nicaraguan border, offshore to about 60 fathoms. By operating at night, the catches of shrimp have improved. Shrimp caught in these open waters, upon being landed, are of a pronounced red coloration, and shortly thereafter turn a pinkish hue. Although not as big as the white shrimp, they are of a size big enough for export to the United States. The amount of shrimp caught in these open waters, as compared to previous catches in the protected waters of the Gulf, is more than twice as much. However, only 60 percent of Costa Rica's small fishing fleet is able to operate in the more hazardous open waters. A substantial quantity of "small shrimp" are still being caught along the coast south to Golfito.

On November 18, 1960, the Regional Advisor for Latin America, Fishing Division, of the Food and Agriculture Organization (FAO), was in San Jose to consult with the Minister of Economy and Finance and offer FAO scientific and technical assistance to the fishing industry. The project discussed would cost in the neighborhood of US\$993,000 of which Costa Rica would contribute about \$331,000, payable \$30,000-40,000 annually for a period of approximately five years. This matter, which is still in the tentative stage, would offer technical assistance in the fields of industrial processing, marketing, nutrition, location of shrimp-fishing grounds, and scholarships to qualified Costa Ricans to study marine biology and oceanography. Two fully-equipped boats would be sent to Costa Rica to conduct the ocean studies. The Minister of Economy reportedly was receptive to the proposed project.

There are no shrimp breeding or canning plants in Costa Rica, and heading, peeling, and deveining are done by hand. While the need for mechanization is generally recognized, there does not appear to be any effective program under way to achieve this improvement.

Landings of heads-on shrimp (including "tinies") during 1959 amounted to about 1,471,725 pounds. Estimated landings for 1960 are expected to fall short of the 1959 level by approximately 500,000 pounds. However, the 1960 figure, based on operational capacity, is more nearly normal. The 1959 figure was unusually high as an abnormally large number of young immature shrimp unsuitable for export were caught in the Gulf of Nicoya, prompting the Ministry to place restrictions on Gulf fishing in 1960. According to the statistics compiled by the Ministry of Agriculture and Industries, landings of shrimp during the years 1954-1958 inclusive, were as follows: 1954, 64,108 pounds; 1955, 304,720 pounds; 1956, 590,718 pounds; 1957, 187,240 pounds, and 1958, 782,120 pounds.

About 85 percent of the total landings is exported and the remainder consumed in the country. About all shrimp exports from Costa Rica are peeled and deveined and about 95 percent of the exports are destined for the United States. Small amounts have been exported to Curacao and Guatemala. The shrimp landings in 1959 had an export value of about \$675,000. In 1960, the value was expected to amount to about \$425,000.

The fleet of fishing vessels operating out of Puntarenas late in 1960 numbered 40 or double the number in operation about the middle of 1959. The boats include a few which are 65 feet long, about 50-ton displacement, equipped with modern double-trawling gear, and powerful engines. Most carry a crew of five, including the captain, and almost all have insulated holds.

The vessels of the Costa Rica shrimp fleet are mostly locally built and owned and are quite seaworthy. However, only two vessels are equipped with ship-to-shore radio and echo-sounders. A compass only is used for navigational purposes. In order to protect the marginal operations of the shrimp fishermen of Costa Rica, the use of foreign-built vessels has been prohibited. Because the better fishing grounds now are located further out to sea, and outside the territorial waters of Costa Rica, the restriction will hamper the effective development of the shrimp industry. Foreign-built vessels with modern fishing gear and equipment could do much to increase the shrimp catches of Colombia. The Association of Fishermen concedes

Costa Rica (Contd.):

that the law should be rescinded but feels the industry should be on a sounder footing before broaching the subject with the legislature of Costa Rica.

Construction work on six new boats in Puntarenas shipyards is temporarily suspended because of lack of funds. When complete, however, these are not expected to improve materially upon the present level of operations.

Local shrimp exporters pack shrimp in accordance with customary practice, i.e. in cartons of either under 10, 10-15, 16-20, 21-25, 26-30, 31-35, 36-40, 50-60, and 70-100 shrimp to the pound.

November 1960, reported by the Customhouse of Costa Rica are shown in table 2.

Month	Colones	US\$
January	5, 124	771
February	2, 584	389
March	2, 025	305
April	1, 810	272
May	3, 190	480
June	2, 410	362
July	2, 044	307
August	3, 191	480
September	3, 414	513
October	17, 571	2, 642
November	10, 752	1, 617
Total 11 Months	54, 115	8, 138

Table 1 - Costa Rica's Shrimp Export Prices for a Single Shipment in December 1960

Quantity and Type	Shrimp Per Lb.	Lbs.	U.S. Cents a Lb.
43 x 50 lbs. P & D ¹ / Shrimp . . .	50-60	2, 150	63
316 x 50 lbs. P & D Shrimp	70-100	15, 800	of which
		(3, 250)	(52)
		(3, 500)	(55)
		(9, 050)	(54)
450 x 24 lbs. P & D Shrimp No. 1 Pkgs.		10, 800	50
40 x 50 lbs. Shrimp, Shell on . .	Under 10	2, 000	100
53 x 50 lbs. Shrimp, Shell on . .	Under 15	2, 650	87
25 x 50 lbs. Shrimp, Shell on . .	16-20	1, 250	86
19 x 50 lbs. Shrimp, Shell on . .	21-25	950	78
13 x 50 lbs. Shrimp, Shell on . .	26-30	650	72
3 x 50 lbs. Shrimp, Pink	21-25	150	70
5 x 50 lbs. Shrimp, Pink	26-30	250	68
7 x 50 lbs. P & D Shrimp	26-30	350	75
8 x 50 lbs. P & D Shrimp	36-42	400	70
Total		37, 400	

¹/Peeled and deveined.

From the final total in table 1, the United States importer deducted his 10 percent commission, and the Letter of Credit advances made against warehouse receipts. The Costa Rican exporter is authorized by the United States company to obtain advances of approximately 75 percent of the total value of a given shipment.

Shrimp prices during 1960 were reported from 10-15 U. S. cents a pound less than in previous years.

There are export controls and a subsidy applicable to the fishing industry. An export tax of 2 percent ad valorem, based on the f.o.b. Puntarenas cost, is collected by the Government of all export shipments of "Crustaceans and Mollusks" (Public Law 1738 of March 31, 1954). Customs receipts in this category, which includes spiny lobster and shrimp, collected from January through No-

Customs receipts during December 1960 were expected to be about equal or slightly less than those in November. Prior to October, tax receipts were predominantly from shrimp exports. The significant rise in October was due to the lobster catch off Limon on the Atlantic side, which was unusually large in 1960.

A subsidy is received in the form of a preferential exchange rate at which dollars earned may be sold in the local exchange market. Formerly, 35 percent of dollars earned had to be sold at the official rate of 5.60 colones to US\$1; the balance at the legal free rate of 6.63 colones. From March 1960 to March 1961, the fishing industry can sell 99 percent of its dollars at the 6.63 rate. This, in a sense, is a subsidy which, it is understood, is being passed on to the fishermen in the form of higher prices paid for their catches. An export license is required for each shipment.

The customary method of shipping Costa Rican shrimp to the United States has been via air-cargo planes of the Costa Rican airline, from Puntarenas to Miami, Fla.--a flight of some 7 hours. At the insistence of his United States principal, one of the exporters still ships via this means for the New York market, and this costs the local exporter about 11 U. S. cents a pound, calculated on gross weight. The other local exporter is allowed to ship via ocean freight to New York, and benefits substantially from the approximate 4 cents a pound rate.

The processes of deheading, peeling, deveining, and packaging are performed by women and girls who are employed on a piece-work basis. A rate of 1.5 U. S. cents a pound is paid for deheading; 4.5 cents a pound is

Costa Rica (Contd.):

paid for peeling and deveining; and 15 cents a pound is paid for packaging. At such rates, girls earn from \$0.90-1.25 per hour. Working hours, however, are very irregular, coinciding with vessel arrivals.

The customary charge for freezer storage is CR\$0.10 (1.5 U. S. cents) a pound per month or fraction thereof. However, the refrigeration plant generally is asked to put an ice glaze on the shrimp, making the rate CR\$0.15 (2.26 U. S. cents) a pound. There are four ice-manufacturing concerns in Puntarenas. The customary charge for ice is 3 colones (about 45 U. S. cents) per 100-pound block. One refrigeration plant has a storage of 11,000 cubic feet, and the other in Puntarenas has a 100-ton normal storage capacity and a freezing capacity of 20 tons in 24 hours.

The Puntarenas shrimp industry calculates that an average of 6 U. S. cents a pound is spent on local processing, before refrigeration.

The average vessel catch, according to reliable sources at Puntarenas, is about 1,700 pounds of fish, 800 to 1,200 pounds of large shrimp, and 2,000 to 2,500 pounds of small shrimp. The sums realized by a vessel per trip, and the manner in which it is divided among the crew, is variable. Generally speaking, and with regard to the large shrimp, one-third of the catch is given to the crew which normally does not exceed five persons including the captain. However, each boat also brings in a substantial catch of small shrimp; and edible fish which is purchased by the National Production Council--50 percent of the tiny shrimp and fish catch goes to the vessel. Cost of provisions consumed during the trip is absorbed by the crew. The Council pays CR\$1.20 (about 18 U. S. cents) a pound for fish weighing 5 pounds or more; CR\$0.90 (about 13.5 U. S. cents) a pound for fish weighing from 2 to 5 pounds; and \$0.70 (about 10.5 U. S. cents) for fish weighing $\frac{1}{2}$ to 2 pounds.

Shrimp packers and exporters generally purchase headless shrimp from fishermen at the following rates: large shrimp, CR\$3.50 (about 52.6 cents) a pound; "pinkies," CR\$2.65 (about 40 cents) a pound; "tinies," CR\$0.80 (about 12 cents) a pound. As the small shrimp ("tinies") generally are purchased heads-on packers pay 40 centimos (about 6 U. S. cents) a pound less when purchased with heads-on.

Fishermen average about 600 to 800 colones (US\$90-100) per month in wages.

The possibility of expanding the annual landings of shrimp in Costa Rica appears to be favorable. Additional boats are under construction, but it is felt that because of its relatively small size, Costa Rica cannot support a shrimp fleet much in excess of the present size. Physical expansion could take place through the use of larger and better-equipped vessels. For this purpose, however, it is felt that the law which prohibits the use of foreign-built vessels should be rescinded, in order to permit the utilization of such vessels by Costa Rican owners. Financial assistance, either governmental or private, also is needed to enable vessel owners to acquire needed radio and echo-sound equipment. A general lack of funds on all levels is reducing the efficiency and profitability of the local fishing industry. (United States Embassy in San Jose, December 19, 1960.)



Cuba

FISHERIES TRENDS, DECEMBER 1960:

According to a Cuban newspaper article of November 27, 1960, six vessels 28 feet in length have been purchased by the Matanzas Fishing Cooperative for expanding its activities.

Mention was also made of the inauguration of a new fisheries center building at Tunas de Zaza, Las Villas Province, on November 4, 1960.

The processing of dried turtle meat was also mentioned in the article as constituting a new industry at Isle of Pines, under the control of Cuba's Fishery Department. (United States Embassy, Habana, December 5, 1960.)



Denmark

FISH MEAL AND SOLUBLES PRICES, DECEMBER 4-10, 1960:

Export prices for Danish herring meal were being quoted at 780-790 Danish kroner per metric ton (US\$102.60-103.92 a short ton) f.o.b. Esbjerg, during the week of December 4-10, 1960. Protein content averaged about 70 percent. A week earlier, shipments to

Denmark (Contd.):

various destinations of herring meal of varying protein content had averaged 860 kroner per metric ton (US\$113.13 a short ton).

A single, small shipment of fish solubles to West Germany sold for 600 kroner per metric ton (US\$78.93 a short ton). (United States Embassy in Copenhagen, December 21, 1960.)

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**SHRIMP INDUSTRY
(INCLUDING GREENLAND):**

Denmark's shrimp industry was based for many years on the landings of the common shrimp (*Palaemon fabricii*) primarily to meet domestic demand. However, as demand began to outstrip the supply of this variety in the nearby waters of The Belt, Danish shrimp fisherman, in the years immediately preceding World War II, began to push out into the Skagerrak in pursuit of the deep-water shrimp (*Pandalus borealis*). After the War, while the landings of common shrimp leveled off to an annual average of about 200 metric tons, landings of deep-water shrimp gradually increased to 771 tons by 1956; and during the past four years deep-water shrimp output has tripled, reaching an estimated 2,450 tons in 1960. While expanding domestic demand continues to take the larger share of Danish shrimp production, there has been an equally sharp rise in exports, especially to the United States, in recent years.

Virtually all of the Danish catch of deep-water shrimp comes from the Skagerrak, from fishing grounds north of Skagens Gren, and the waters between Hanstholm and the Norwegian coast. The heaviest landings are made between March and October. Landings of common shrimp are concentrated between June and September, with most of the catch coming from waters of The Belt, especially from SmaalandsHAVET.

Located both in Copenhagen and at the major fishing ports throughout Denmark, the shrimp-processing plants are mostly small and independently operated, with no single company in a dominating position. There are presently about 25 canning plants and five freezing plants in Denmark which process shrimp. Most of the plants are highly mechanized, with a number of United States shrimp-peeling machines in operation.

Table 1 - Danish Pack of Canned Shrimp, 1956-59

Year	Raw Shrimp (Heads-on) Utilized	Pack of Canned Deep-Water Shrimp ^{1/}		
	Quantity	Quantity	Value	
	Metric Tons	Metric Tons	1,000 Kroner	US\$ 1,000
1959 . . .	2,170	643	12,532	1,814
1958 . . .	1,449	414	8,696	1,259
1957 . . .	982	273	5,170	748
1956 . . .	697	205	3,766	545

^{1/}Includes a small amount of common shrimp (estimated 50 tons annually).

Shrimp production in Greenland is a more recent enterprise, the shrimp-fishing grounds in Disko Bay, off Christianshaab and Jakobshavn, not having been discovered until 1948. Each of those beds, often described as the richest in the world and inexhaustible, is about 50 miles square, on a level sea floor.

In addition, some catches of deep-water shrimp are taken off Narssaq, further south along the West Greenland coast. Fishing and processing take place only during the summer months.

There are now two shrimp-canning plants in operation at Christianshaab, the second one having been opened during 1960. They employed 57 men, and 318 women during the 1960 season, turning out about 2.1 million 80-gram (2.5 oz.) cans and jars, almost double the 1959 output of the single plant that operated that year. A third factory for exploiting the Disko Bay beds is expected to be opened in Jakobshavn in 1961. There is also a shrimp-canning plant at Narssaq which turned out an estimated one million cans during the past season. A United States shrimp-peeling machine was installed in the factory which was opened in 1960. As a result of its satisfactory performance, another machine has been ordered for installation in the projected Jakobshavn plant. Freezing facilities exist at Egedesminde, also on Disko Bay, but so far they have used less than one-tenth of the Greenland shrimp landings.

The processing of, and trade in, shrimp is monopolized by the Royal Greenland Trade Department, as are most major Greenland economic activities. However, a proposal to permit a private Danish firm to construct and operate a shrimp plant at Godhavn, on Disko Island, is reportedly under consideration.

Landings of all varieties of shrimp by Danish and Greenland fishermen during the 1960 season are estimated at more than 4,500

Denmark (Contd.):

metric tons. While the Danish catch of common shrimp has not changed appreciably since 1956, landings of deep-water shrimp have increased threefold, and the total Greenland catch has shown an even greater increase.

of fresh and frozen shrimp almost tripled to 32 tons. In Greenland, starting from a higher 1956 base, the increase was not quite as great, but it reached 286 tons of canned and 35 tons of frozen shrimp in 1959.

The United States and the United Kingdom have become the principal export markets for

Table 2 - Landings of Shrimp (Heads-on) in Denmark and Greenland, 1956-1960

Year	Denmark						Greenland
	Common Shrimp			Deep-Water Shrimp			All Varieties
	Quantity	Value		Quantity	Value		Quantity
Metric Tons	1,000 Kroner	US\$1,000	Metric Tons	1,000 Kroner	US\$1,000	Metric Tons	
Jan. -Oct. 1960 ^{1/}	215	2/	2/	2,450	2/	2/	1,900
1959	195	1,649	239	2,191	6,573	952	949
1958	158	1,292	187	1,563	5,482	794	759
1957	294	1,297	188	1,051	3,426	496	673
1956	159	1,122	162	771	2,556	370	528

^{1/}Estimated.

^{2/}Unavailable.

Statistics are not available on what portion of the Danish fleet is devoted to shrimp fishing; Danish marine fisheries have traditionally relied largely on smaller inshore vessels. The small shrimp cutters used in the Skagerrak are generally operated by a skipper-owner with perhaps one or two crewmen, while most of the shrimp fishing in waters of The Belt is undertaken in small boats.

Sixteen small shrimp cutters were operating in Greenland waters during the 1960 season, one with a Danish shipper and the others operated by Greenlanders. During 1959, these vessels averaged a catch of about 500 pounds per vessel per fishing day. The fleet may be expected to grow with the opening of the new processing plant in Jakobshavn.

Little official information is available on shrimp prices in Denmark beyond an average yearly price computed by the Ministry of Fisheries.

Table 3 - Danish Average Ex-Vessel Prices for Shrimp, 1956-60

Year	Heads-on			
	Common		Deep-Water	
	Kroner Per Kilo	U. S. Cents a Pound	Kroner Per Kilo	U. S. Cents a Pound
1959	8.48	55.7	3.00	19.8
1958	8.17	53.7	3.51	23.0
1957	4.41	28.9	3.26	21.4
1956	7.05	46.3	3.32	21.8

While domestic users still account for the larger share of the consumption of fresh, frozen, and canned Danish and Greenland shrimp, more than one-third of the combined product is now being exported to foreign consumers. Between 1956 and 1959 exports of canned Danish shrimp increased fivefold by weight to 243 tons, while the less important exports

Denmark's canned shrimp, each taking close to 70 tons during 1959. France was the chief buyer of frozen shrimp, taking almost 25 tons.

During the first 10½ months of 1960 Denmark's exports of fresh shrimp totaled 6.3 tons valued at 19,000 kroner (\$2,755) and those of frozen shrimp (mostly re-exports from Greenland) totaled 24.1 tons valued at 139,000 kroner (\$20,155). France took the bulk of the frozen shrimp; 18.7 metric tons valued at 94,000 kroner (\$14,630). Sweden took most of the remaining frozen as well as most of the fresh shrimp exports.

Greenland's shipments of canned shrimp rose from 126 tons in 1956 to 171 tons in 1957, 266 tons in 1958, and 286 tons in 1959. While an exact breakdown is not available, somewhat over one-half of those amounts were shipped to Denmark, where they were either consumed locally or re-exported and included in the Danish export figures. The remainder were directly exported from Greenland ports to about 50 foreign countries.

With production of canned shrimp doubling in Greenland in 1960, it can be assumed that exports increased by a similar amount for that year.

In addition, Greenland exported 6 tons of frozen shrimp in 1956, 2 tons in 1957, 25 tons in 1958, and 35 tons in 1959, mostly via Denmark for re-export to France or Sweden.

With the Danish fishing industry highly efficient and competitive, government support schemes are of small importance and protection is moderate. Official fishery policies appear to be aimed at maintaining and improving the relatively favorable situation.

Denmark (Contd.):

A Danish Fisheries Bank facilitates the granting of loans to the fishing industry at slightly lower than the usual interest rates. Prior to 1959 the State Treasury had in effect guaranteed repayment of these loans, but now that function is performed by the Fisheries Bank itself through the issuance of second priority credits. These loans are limited to the construction or modernization of vessels and motors.

restrictions to these exports as the welfare of the Danish fishing industry may appear to require. Exports of fresh, frozen, and canned shrimp require licenses, though their issuance is largely a matter of formality for shipments to the dollar and European Payments Union areas.

Imports of canned shrimp from OEEC countries (and the dollar area, as well) are wholly liberalized; imports of fresh or frozen shrimp are not. There is no duty on fresh or

Table 4 - Denmark's Exports of Shrimp, 1956-60^{1/}

Destination	Jan.-June 1960			1959			1958			1957			1956		
	Quantity		Value	Quantity		Value	Quantity		Value	Quantity		Value	Quantity		Value
	Metric Tons	1,000 Kr.	US\$ 1,000	Metric Tons	1,000 Kr.	US\$ 1,000	Metric Tons	1,000 Kr.	US\$ 1,000	Metric Tons	1,000 Kr.	US\$ 1,000	Metric Tons	1,000 Kr.	US\$ 1,000
Canned:															
United States	35.2	299	43	66.1	547	79	58.9	519	75	32.6	282	41	11.0	113	16
West Germany	18.2	163	24	4.1	43	6	2.2	31	4	1.8	22	3	0.1	1	-
United Kingdom	7.8	80	12	68.2	727	105	27.5	281	41	4.2	46	7	5.8	57	8
Sweden	6.3	73	11	10.0	121	18	13.1	169	24	10.0	126	18	12.2	147	21
South Africa .	6.3	55	8	9.9	84	12	8.9	73	11	13.3	107	15	1.2	14	2
Italy	6.8	53	8	6.6	50	7	7.5	60	9	3.0	27	4	-	-	-
France	6.2	46	7	11.8	112	16	1.5	12	2	1.9	19	3	2.1	22	3
New Zealand .	2.0	27	4	1.7	29	4	3.8	44	6	12.3	116	17	-	-	-
Rhodesia . . .	3.5	24	3	20.0	191	28	3.3	33	5	2.4	22	3	0.5	8	1
Others	19.4	178	26	45.2	450	65	23.7	243	35	21.2	221	32	11.6	146	21
Total	111.7	998	146	543.6	2,354	340	150.4	1,465	212	102.7	988	143	44.5	508	72
Other Than Canned:															
France	8.4	24	3	24.9	141	20	21.9	123	18	9.9	50	7	1.3	2	-
Sweden	0.8	4	1	4.1	47	7	2.2	36	5	8.4	50	7	3.0	14	2
United States .	-	-	-	-	-	-	0.1	1	-	1.4	17	2	4.5	66	10
Others	1.7	9	1	3.7	18	3	0.1	1	-	1.2	22	3	3.7	84	12
Total	10.9	37	5	32.7	206	30	24.3	161	23	20.9	139	19	12.5	166	24

^{1/}Include re-exports of shrimp delivered to Denmark from Greenland.

Exporters of shrimp to the dollar area could presumably benefit from provisions of the Danish dollar export premium scheme, which in effect permits the shipper to realize a four percent net premium on exports to that area. This little used scheme is due to expire at the end of 1961.

frozen shrimp imports, but there is a one krone per kilogram duty (about 6.6 U.S. cents a pound) on imports of prepared or preserved shrimp in hermetically-sealed containers, and of 0.50 krone per kilogram (about 3.3 U.S. cents a pound) in other than hermetically-sealed containers.

Table 5 - Value of Greenland's Direct Exports of Canned Shrimp to Countries Other Than Denmark, 1956-59

Destination	1959		1958		1957		1956	
	1,000 Kroner	US\$1,000	1,000 Kroner	US\$1,000	1,000 Kroner	US\$1,000	1,000 Kroner	US\$1,000
United States . .	311	45	256	37	216	31	105	15
United Kingdom	146	21	131	19	-	-	-	-
Sweden	138	20	169	24	143	21	145	21
South Africa . .	79	11	57	8	115	17	13	2
France	57	8	12	2	18	3	18	3
Italy	48	7	60	9	27	4	-	-
Nigeria	46	7	36	5	11	2	13	2
Switzerland . . .	43	6	-	-	-	-	-	-
Rhodesia	34	5	38	6	15	2	-	-
Belgian Congo .	32	5	36	5	16	2	-	-
Ghana	28	4	11	2	12	2	-	-
Other	138	20	78	11	131	19	91	13
Total	1,100	159	884	128	704	103	385	56

While there are no special taxes on the shrimp industry, the Ministry of Fisheries has very broad control powers over exports of fish and fish products, and can apply such

The 1960 average hourly wage (full "wage package") for women employed in fish- and shrimp-processing plants in Denmark is 4.07 kroner (about 59 U.S. cents). In Greenland

Denmark (Contd.):

women employed in the shrimp factories earn an average wage of only 2.60 kroner (about 38 U. S. cents) per hour. However, this Greenland average includes underage girls employed part-time during the rush season, and excluding them the average rises to about 3.00 kroner per hour (about 44 U.S. cents).

Danish fishing boats are, as a rule, owned and operated by individual fishermen and the crews generally work on a share basis. In addition to the full-time fishermen, there are a considerable number of part-timers who work on their own small farms or are employed as unskilled laborers when they are not occupied in fishing. While exact information about the income of the fishermen is not available, it appears that full-time fishermen earn incomes comparable to those of industrial workers. For example, in the important west coast fishing town of Esbjerg a recent survey put the average annual income of a fishing skipper at about 18,000 kroner (about US\$2,614), that of a part-time fisherman at about 14,500 kroner (about US\$2,106), that of a cannery worker at about 15,000 kroner (about US\$2,179), and that of an unskilled metal worker at about 13,000 kroner (about US\$1,888).

There is no evidence that the immediate further expansion of the Danish shrimp industry is hampered by any lack of shrimp resources, but tight money and full employment might have the effect of slowing down such expansion. Rationalization of the processing industry could presumably provide a way around the labor shortage, but the tight liquidity situation hampers the floating of loans for industrial expansion.

In Greenland, there is still unexploited shrimp resources, and with a third cannery due to be opened soon in the Disko Bay area, production and exports of canned shrimp can be expected to continue to grow. (United States Embassy in Copenhagen, December 1, 1960.)

Note: Kroner converted at following rates: 1956 and 1957 - 6.914, 1958 - 6.906, 1959 - 6.908, and 1960 - 6.885 kroner equal US\$1.



Ecuador

NATIONAL INSTITUTE TO EXPAND AND STUDY FISHERIES:

The Ecuadoran Registro Oficial No. 18 of September 21, 1960, contained the Plan of Operations for the National Fisheries Institute in Guayaquil agreed to by the Government of Ecuador and the Food and Agriculture Organization (FAO) of the United Nations on behalf of the United Nations Special Fund.

The Plan provides for four-year financing through contributions of US\$633,800 by the Special Fund and the sucre equivalent of US\$663,050 by the Government of Ecuador. The FAO will operate the Institute in collaboration with the Ministry of Development. According to the Plan, the Institute will assist the Government in substantially expanding Ecuador's fishing and related industries by studying the distribution and density of fish in Ecuadoran waters and the best ways of exploiting such resources, as well as assisting the Government in establishing an adequate fisheries administration and analyzing the judicial, administrative, and institutional factors which bear on the development of the fishing industry.

The Plan provides that FAO will supply the Director of the Institute, technicians, necessary equipment not supplied by the Ecuadoran Government, and scholarships for Ecuadorans who would eventually replace FAO technicians. The cost of these items is estimated at \$45,800 and is part of the Special Fund's contribution of \$633,800. The Government of Ecuador will provide a building for the Institute, equipment and laboratory space in Manta, and ships, equipment, and personnel of the Ecuadoran Navy. The value of these items is set at \$150,000 and credited against the Government's scheduled contribution of \$663,050. (United States Embassy in Quito, December 20, 1960.)

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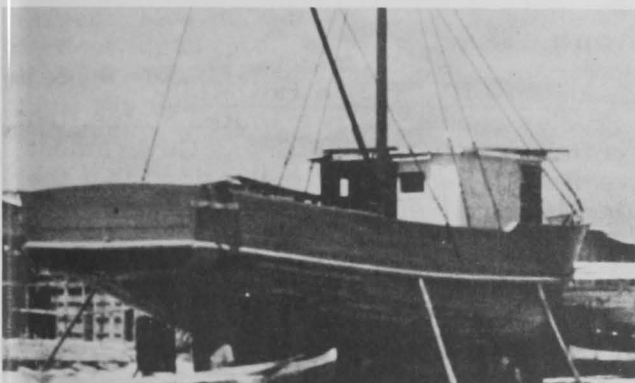
SHRIMP INDUSTRY:

Although Ecuador's shrimp exports in 1959--all of which went to the United States--represented only slightly more than 3 percent of the country's exports, they ranked fourth in value among export items and were the only significant evidence of progress towards diversification in Ecuador's export trade pattern. The recently inaugurated Velasco Administration has announced its intention to develop further Ecuador's largely unexploited fisheries.

In a recent press conference, the Director of Fisheries in Guayaquil stated that the Ministry of Development will put into action a fisheries development program which

Ecuador (Contd.):

will provide for scientific efforts to increase landings of fish and the creation of fishing cooperatives along the coast which will receive Governmental aid in the form of equipment. The National Fisheries Institute, supported jointly by the Ecuadoran Government and the United Nations Special Fund, was expected to be inaugurated in January 1961 and will play a significant role in developing Ecuador's fisheries.



A shrimp trawler under construction on a beach in Ecuador.

Considering that there has to date been only haphazard exploitation of Ecuador's fisheries, the application of modern methods and a conscious effort to expand the industry will almost certainly increase Ecuador's landings of fish over the long term, perhaps significantly. Shrimp will probably continue to be the most actively exploited fish export.

By the end of 1959, Ecuador's shrimp fishing fleet had increased to 165 vessels, all under domestic ownership. This total compares with 119 vessels in 1958 (includes 3 foreign-owned vessels), 144 vessels in 1957 (includes 29 foreign-owned vessels), and 107 vessels in 1956 (includes 27 foreign-owned vessels). Landings of shrimp in Ecuador during 1959 amounted to 2,843 metric tons valued at US\$4.2 million (probably export value).

Table 1 - Ecuador's Shrimp (Heads-On) Landings, 1956-59

Year	Quantity	Value
	Metric Tons	US\$1 Million
1959	2,843	4.2
1958	1/ 2,721	4.1
1957	2,137	3.0
1956	2,342	2.5

1/ Landings were reported on a gross basis in 1958; for other years data are net tons. Source: "Memoria del Gerente del Banco Central," 1959.

Exports of frozen shrimp by Ecuador of 2,569 metric tons in 1959 were just about double the 1,284 tons exported in 1956. From 1956 to 1959 shrimp exports increased steadily, but probably leveled off at about the 1959 total or less in 1960.

Table 2 -Ecuador's Shrimp (Heads-Off) Exports, 1956-59 and Jan.-June 1960

Year	Country of Destination	Quantity	Value ^{1/}
		Metric Tons	US\$1,000 (f.o.b.)
1960 (Jan.-June)	United States	2/ 1,126.44	1,464.4
1959	United States	2/ 2,569.35	3,854.0
1958	United States	2/ 2,221.00	3,331.5
	Bolivia	.55	.8
	Total	2,221.55	3,332.3
1957	United States	3/ 1,858.00	2,601.2
1956	United States	3/ 1,284.00	1,412.4

1/ Value converted at estimated f.o.b. prices of: 1956, US\$1,100 per metric ton; 1957, US\$1,400 per ton; 1958, US\$1,500 per ton; 1959, US\$1,500 per ton; and 1960, US\$1,300 per ton.
2/ Gross tons.
3/ Net tons.
Source: Central Bank statistics.

In accordance with Monetary Board Resolution No. 342 of April 1, 1960, exporters must surrender \$100 per metric ton of proceeds from exported shrimp to the Central Bank at the official rate of 15.00 sucres to US\$1.00. The excess over \$100 per metric ton (about \$1,200) may be exchanged in the free market where the rate is currently about 18.00 sucres to US\$1.00. Resolution 342 was actually favorable to shrimp exporters in that it reduced the amount of export proceeds required to be surrendered to the Central Bank at the official rate by \$200.

Duties on Shrimp Exports: Frozen shrimp S/0.40 per net kilogram (about 1.21 U. S. cents a pound), and dried shrimp S/0.15 per net kilogram (about 0.363 U. S. cents a pound).

Annual Taxes on Vessels and Fishermen: S/25.00 (about US\$1.67) per net registered ton for Ecuadoran flag vessels of less than five tons; S/50.00 (about US\$3.33) per net registered ton for all vessels exceeding five tons; S/3.00 (about 20 U. S. cents) on each fisherman's registration card; and S/5.00 (about 33.3 U. S. cents) on each fisherman's registration in addition to ordinary stamp tax payment.

Other Taxes on All Exports, Including Shrimp: 1/2 percent ad valorem for Manabi, Esmeraldas, Los Rios, and El Oro port improvement; 1/4 percent ad valorem for Guayaquil and Babahoyo port improvement; 1 percent on freight charges and passenger fares; and 1 percent ad valorem on exports through Guayaquil and El Oro Province.

Port and Other Fees: S/10.00 (about 66.7 U. S. cents) per ton as port fee; S/1.00 (about 6.7 U. S. cents) per ton as statistics fee; S/0.05 on each 300 pounds (about 2. U. S. cents a short ton) for inspection and stamps. (United States Embassy, Quito, December 7, 1960.)

Note: All duties, taxes, port and other fees are converted at rate of S/15 equal US\$1.



German Federal Republic

FISH MEAL PRICES, DECEMBER 7, 1960:

Prices reported at Hamburg Commodity Exchange as of December 7, 1960, for fish meal delivered ex-Hamburg warehouse, or c. & f. West German sea port:

German Federal Republic (Contd.):

Type of Fish Meal	Protein Content (%)	Delivery	DM/Metric Ton	US\$/Short Ton
German fish meal	50-55	prompt/Dec. 1960	445.00	96.08
" " "	55-60	" " "	462.50	99.86
" " "	60-65	" " "	485.00	104.71
" " " standardized brands	60-65	Dec. 1960	550.00	119.82
Angola fish meal	65-70	Dec. 1960	1/	1/
Peruvian fish meal	65-70	prompt	475.00-480.00	102.55-103.63
" " "	65-70	Jan. 1961	415.00	89.60
" " "	65-70	Feb.-Dec. 1961	395.00	85.28

1/Not available.
Note: Values converted at rate of 4,2017 deutsche marks equal US\$1.

As compared with November 25, 1960, fish meal prices on the West German market on December 7, 1960, were higher for prompt delivery, but prices for Peruvian fish-meal futures (Feb.-Dec. 1961) were down \$1 a short ton. (United States Consulate, Bremen, December 12, 1960.)

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FISH MEAL PRICES, JANUARY 6, 1961:

Prices reported at Hamburg Commodity Exchange as of January 6, 1961, for fishmeal delivered ex-Hamburg warehouse, or c.&f. West German sea port were as follows:

Type of Fish Meal	Protein Content (%)	Delivery	DM/Metric Ton	US\$/Short Ton
German fish meal	50-55	prompt/Jan. 1961	450.00	97.16
" " "	55-60	" Apr. 1961	477.50	103.09
" " "	60-65	" " "	497.50	107.41
" " " standardized brands	60-65	Jan. 1961	550.00	118.75
Angola fish meal	65-70	Jan. 1961	515.00	111.20
" " "	65-70	Feb. 1961	450.00-455.00	97.16-98.24
Peruvian fish meal	65-70	prompt	497.50-505.00	107.41-109.04
" " "	65-70	Jan. 16-31, 1961	470.00-472.50	101.48-102.01
" " "	65-70	Feb. 1-15, 1961	447.50	99.62
" " "	65-70	Feb. 16-28, 1961	437.50	94.46
" " "	65-70	Mar. 1961	420.00	90.68
" " "	65-70	Apr.-June 1961	400.00	86.37
Norwegian herring meal	72.75	Jan. 1961	560.00-565.00	120.91-121.99

Note: Values converted at rate of 4,2017 deutsche marks equal US\$1.

As compared with December 7, 1960, fish meal prices on the Hamburg exchange on January 6, 1961, were higher for both domestic and imported fish meal. (United States Consulate, Bremen, January 11, 1961.)

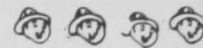
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FISHING INDUSTRY PREFERS STERN TRAWLING:

It is reported from Hamburg that German fishing vessel owners are not building any more side trawlers. All existing German contracts for side trawlers have been converted to stern trawlers.

The changeover is being effected so quickly that people in the German fishing industry

are now describing side trawlers as "modern scrap." Owners are finding it difficult to procure crews for the obsolete types. (Fishing News, December 16, 1960.)



Ghana

TUNA FISHERY SHOWS PROMISE:

Studies conducted by a United States firm in collaboration with the Ghana Government have shown preliminary indications that the Guinea Gulf has an abundance of tuna particu-

larly during the summer and fall. A single Ghana-registered purse-seiner is now fishing tuna for local consumption and fleets of United States and Japanese vessels based in Takoradi are catching tuna for shipment elsewhere.

A fleet of Soviet trawlers, also based in Takoradi, is fishing for other species, some of which are being sold in Ghana to meet local refueling costs. Local sales by Japanese and Russian trawlers have had a noticeable downward effect on fish prices. (United States Embassy in Accra, January 10, 1961.)



Greece

**IMPORT DUTIES ON
SELECTED FISHERY PRODUCTS:**

Current ad valorem duty rates on fishery products imported into Greece are:

Crustaceans and molluscs, whether or not in shell, fresh (live or dead), chilled, frozen, salted, in brine or dried; crustaceans in shell, simply boiled in water: (1) crustaceans such as lobsters, shrimp, crawfish, crabs, etc., 30 percent; (2) molluscs (mussels, clams, oysters, snails, etc.), 30 percent; and (3) octopus, cuttlefish, squid, etc., 25 percent.

Canned fish and shellfish: tuna and salmon, 22 percent; canned fish other than sardines or the like, tuna, and salmon, 25 percent; oysters and mussels and the like, 22 percent; lobster, shrimp, and crawfish, 25 percent; crab, etc., 25 percent; cuttlefish, octopus, squid, etc., 20 percent; and red caviar, 480 drachmas per 100 kilograms (about 0.73 U. S. cents a pound).

Byproducts: fish meal, inedible, 6 percent; and fish meal and shellfish meal edible, 15 percent. (United States Embassy in Athens, November 25, 1960.)

**STERN FREEZER-TRAWLER FINDS
FISHING POOR OFF NEWFOUNDLAND:**

The Greek stern trawler Evangelistria IV which fished the Newfoundland banks in November 1960 did not get a very good return from the trip, according to the December 1960 issue of Alieia, a Greek fishery periodical. The vessel fished for cod on the Flemish Cap and sought ocean perch on other Newfoundland banks, but the results were unsatisfactory. When the weather conditions off Labrador became poor, fishing was discontinued in that area and the vessel headed for the banks it usually fishes off the coast of Mauretania, Northwest Africa. The vessel reported that no Russian factoryships were seen while fishing off Newfoundland. (Fiskets Gang, January 5, 1961.)



Greenland

**LARGE FISH-PROCESSING
PLANT PLANNED:**

There are plans to build a large fish-processing plant in Godthaab, Greenland, with an annual capacity of 10,500 metric tons of raw fish, from which quick-frozen fillets will be produced and exported. The operation will be a joint venture by Greenland, Danish, and Faroe Island interests.

SHRIMP LANDINGS SET RECORD IN 1960:

Shrimp landings during the 1960 season at Christianshaab, Disco Bay, Greenland, set a new record, according to the December 1960 issue of Dansk Fiskeritidende, a Danish fishery periodical. The 16 small shrimp cutters based there caught almost 1,500 metric tons of shrimp with an ex-vessel value of 1,196,679 Danish kroner (about US\$174,000). The new shrimp-processing factory which began operations during the past summer made it possible to increase production 81.3 percent. (Fiskets Gang, January 5, 1961.)



Iceland

**EX-VESSEL FISH PRICES
BEING NEGOTIATED:**

Late in December 1960, negotiations were under way between representatives of Icelandic fishing vessel owners and the fishermen's unions regarding ex-vessel prices for the main fishing Icelandic season from January-May 1961. As of the end of 1960, the negotiators were still far from reaching an agreement. The fishermen on the vessels were demanding a wage increase of 77 percent.



Typical Icelandic fisherman.

**FISH LANDINGS IN WEST GERMANY
UPSET MARKET:**

The West German fishing industry claimed late in December 1960 that direct landings of

Iceland (Contd.):

fresh fish by Icelandic fishing vessels at German ports during the Christmas season upset the market and price situation. West German industry charged that the Icelandic vessels failed to conform to the usual agreement on landings and were largely to blame for sharply lower prices and the large amount of fish sold to the reduction plants.

The Icelandic vessels were unable to land at British ports because of the dispute between Iceland and Britain over fishing limits off the coast of Iceland. Therefore, about the only fresh fish market available to the Icelandic fishing vessels is that in Germany.

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SHRIMP INDUSTRY:

The shrimp industry of Iceland had its beginning in small experiments carried out between 1935 and 1937. It did not assume the proportions of a full-scale industry until 1945. At present, this industry is relatively small as compared with the cod and herring fisheries. However, its potential for expansion is considerable, particularly if the present trend toward mechanization of processing continues.

Mechanization offers the best hope of overcoming the manpower shortage which handicaps this industry as it does most other sectors of Icelandic industry. A further advantage of mechanization lies in the fact that by reducing the number of persons employed at relatively high wages, it may enable the industry to lower prices.

The high quality of the small Icelandic cooked shrimp (*Pandalus borealis*) assures a good demand and markets for the product.

The shrimp fishing grounds are located off the northwest coast of the Island; the Isafjordur area is the center for processing. Recently there has been some investigation of shrimp fishing possibilities off the east coast of the Island. Shrimp are available from the end of August through the early part of May.

There are five shrimp-processing plants in the northwest part of the Island. Three are located in Isafjordur and two are located, respectively, in Langeyri (Alftafjordur) and Bildudalur. Each of the plants employs between 40 and 60 workers, except the one new plant at Langeyri which is entirely mechanized and employs six persons. Two of the plants at Isafjordur and the one at Bildudalur peel shrimp entirely by hand. At the third plant in Isafjordur the shrimp are peeled principally by machinery. The single plants at Langeyri and Bildudalur do their own freezing. The plants at Isafjordur have their freezing done in fish-freezing plants.

Except in the case of those lacking freezing facilities, complete processing operations are carried out in each plant, i.e., peeling, canning, and packing. No shrimp bread-ing is done in Iceland. There is a decided trend toward mechanization, but its growth will depend in large measure on market demand. For example, in Great Britain and France there is a marked and traditional preference for hand-peeled shrimp, probably due to the latter's more pleasing appearance inasmuch as mechanization tends to deform the shrimp in contrast to hand-peeling.

The only available statistical estimates in Iceland place the annual landings of shrimp at 2,000 metric tons (heads-on) for the years 1956-1960. As packed, the weight is considered to be 17 percent of the whole heads-on weight.

The number of vessels participating in shrimp fishing varies somewhat from year to year. In 1959 it was 14; in 1960 it was 19.

The size of the vessels also varies, being from 7 to 18 gross registered tons. The average-size vessel is of 12 gross registered tons. All boats are equipped with Diesel engines of 30-100 hp. The average vessel has a motor of 50-60 hp.

There are no special construction programs nor definite plans for additions to the present shrimp fleet. Such programs or plans are not needed. There are only two known shrimp grounds at present, although investigations might lead to the discovery of more which could be exploited commercially. This, of course, limits the number of vessels that can pursue this type of fishing. On the other hand, funds are now available for research trips to be organized next summer in search of new grounds. The catch per boat is relatively small and as the main catch is taken in shallow waters ("infjord"), large vessels are not used. Almost any of the smaller multi-purpose fishing boats can be converted to shrimp vessels inexpensively. Therefore, special shrimp boats are not required.

Future discoveries of new and promising shrimp grounds will determine whether a vessel-building program will be necessary.

All shrimp vessels are locally owned and run by individuals who, however, may enter into specific agreements with the processing factories.

Table 1 - Iceland's Export Prices (f.o.b.) for Processed Shrimp, 1957-59 and January-October 1960

Product	1960 ¹	1960	1959	1958	1957
	Mar.-Oct.	Jan.-Feb.			
(Kronur per Kilogram).....				
Shrimp, frozen 2/	69.45	38.89	33.19	27.54	35.99
Shrimp, canned	82.91	46.45	47.88	42.81	46.32

¹New exchange rates for Icelandic kronur.
²Both in the shell and peeled.
 Note: Value of Icelandic kronur: 1957-59 and Jan.-Feb. 1960--16.26 kronur equals US\$1; March-Oct. 1960--38.00 kronur equals US\$1.

The shrimp industry, like all other Icelandic export industries, is subject to export licensing. In order to obtain a license, the individual exporters must apply to the Ministry for Commerce which controls issuance.

Table 2 - Iceland's Exports of Processed Shrimp, 1956-60

Product & Destination	1960	1959	1958	1957	1956
(Metric Tons).....				
Frozen shrimp:					
United States	36.7	14.6	10.5	27.8	40.9
United Kingdom	59.4	41.8	57.6	12.4	10.5
Other	1/ 21.4	1.2	1.4	2/ 31.1	0.1
Total	117.5	57.6	69.5	71.3	51.5
Canned shrimp:					
United States	3.6	-	-	-	-
United Kingdom	-	33.1	11.0	0.5	-
Finland	24.5	27.6	17.9	11.3	31.1
Denmark	9.9	8.5	29.1	11.7	0.4
Czechoslovakia	-	6.0	19.7	5.3	-
Other	0.9	10.2	0.1	-	-
Total	38.9	85.4	77.8	28.8	31.5

¹Mostly Denmark, Netherlands, and West Germany.
²Includes 31.0 tons exported to East Germany.

Since the February 1960 devaluation, a temporary export tax of 2.5 percent on fish products has been in effect. It was expected to remain in effect until at least the end of 1960.

There is an identical wage rate of Icelandic kronur 22 (57.9 U.S. cents) per hour in all sectors of the processing operations (peeling, canning, freezing, etc.). Workers in the in-

Iceland (Contd.):

dustry are also protected by various social security fringe benefits.

Payment of fishermen is effected as follows: there are two men per boat and they each are entitled to one-third of the catch; the other third goes to the owner of the boat. The canning factories pay the fishermen for the raw material as follows: 3 kronur 25 aurar per kilo (about 3.9 U.S. cents a pound) with heads on. During the off-season, the fishermen obtain employment in other activities. (United States Embassy, Reykjavik, December 2, 1960.)



Italy

FISHERY TRENDS, JANUARY 1961:

Italy and Yugoslavia have signed an agreement, effective until February 28, 1962, which allows Italian fishermen to fish in certain limited zones of the Adriatic Sea claimed by Yugoslavia as territorial waters. Negotiations for a similar agreement with Tunisia are being conducted in an attempt to end a fishery dispute which has led to the seizure of Italian trawlers operating off the coast of Tunisia.

The Italian Ministry of Merchant Marine has announced that it will present to Parliament a plan called "Piano Azzurro" for the Italian fishing industry. The principal features of the plan are: (1) industrialization of the fisheries; (2) creation of additional cooperatives for fishermen; and (3) extension of Italian fishing activities to Atlantic Ocean waters in addition to the Adriatic and Mediterranean Seas, where Italian fishing is presently concentrated. (United States Embassy in Rome, January 13, 1961.)

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FISHING FLEET:

Because of restrictions imposed by some Mediterranean countries like Tunisia and Yugoslavia, the Italian Government is studying a plan to develop its ocean-going fishing fleet.

The Ministry of Merchant Marine divides the motorized fishing fleet into two categories: (1) Vessels of 100 gross registered tons and over and (2) Vessels of under 100 gross tons, both types provided with the "Nationality Act," a certificate which authorizes the vessel to operate beyond territorial waters. As of July 1, 1960, the first group consisted of 54 vessels totaling 14,338 gross

tons, and the second group 1,725 vessels totaling 52,683 gross tons.

A vast program for the complete reorganization of the motorized fishing fleet is being studied by the Italian government. As of July 1, 1960, there were being built in Italian shipyards, for Italian owners, 5 trawlers totaling about 1,000 gross tons.

There is only one well organized fishing company in Italy which employs its vessels (6 units totaling 7,000 GRT) in North Atlantic waters to fish for cod, etc. The company owns freezing plants. (United States Embassy, Rome, November 30, 1960.)

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PARTICIPATION IN ATLANTIC FISHERIES CONSIDERED:

Italian Government circles believe that the territorial-water situation in the Mediterranean is making it necessary for Italy to develop an Atlantic Ocean fishing fleet. Fishing fleet operators in south Italy are considering this possibility and have been encouraged by the recent appropriation of 1 billion lire (about US\$1.6 million) for aid to fishermen. This amount is in addition to the recent "Tambroni Law" amendment which extends shipbuilding subsidies and various fiscal exemptions to fishing vessels. During 1960, several large used fishing trawlers were purchased from foreign owners to be reconditioned and equipped for Atlantic fishing. (U. S. Embassy in Rome, December 30, 1960.)

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SHRIMP INDUSTRY:

Landings of shrimp in Italy during 1959 amounted to 2,811 metric tons, somewhat less than the 2,924 tons reported for 1958. Two types of shrimp are included in the landings--white (averages 2.5 inches long with head on) and red (5 inches long with head on). The white variety made up about 60 percent of the total shrimp landings in both 1958 and 1959. Most of the shrimp landed in Italy are caught by trawlers in the waters of the Adriatic Sea and south of the Island of Sicily and are sold fresh in domestic markets. There are no shrimp-canning plants in Italy, and very little is frozen. Shrimp landings are fairly steady throughout the year. However, landings of crabs and lobsters are more important than shrimp. Landings of all crustaceans (including shrimp) amounted to 7,632.5 tons in 1957, 8,155.5 tons in 1958, and 8,523.3 tons in 1959.

Italy (Contd.):

Table 1 - Italy's Imports and Exports of Crustaceans^{1/}, 1957-59

Origin or Destination	Imports			Exports		
	Quantity Metric Tons	Value		Quantity Metric Tons	Value	
		1,000 Lire	US\$1,000		1,000 Lire	US\$1,000
1959:						
France	2,052.9	339,651	547	178.5	155,715	251
Yugoslavia	568.8	128,311	207	-	-	-
United Kingdom	935.2	217,980	351	-	-	-
Other	1,059.8	244,297	394	13.6	14,215	23
Total	4,616.7	930,239	1,499	192.1	169,930	274
1958:						
France	-	-	-	91.0	80,618	129
Yugoslavia	508.8	117,312	188	-	-	-
Other	45.8	20,400	33	56.1	37,115	59
Total	554.6	137,712	221	147.1	117,733	188
1957:						
France	-	-	-	169.0	156,269	250
Yugoslavia	431.4	120,015	192	-	-	-
Other	43.7	16,743	27	25.7	22,793	36
Total	475.1	136,758	219	194.7	179,062	286

1/Includes fresh, cooked, salted, and dried.

Italian statistics on imports and exports of fishery products do not separate shrimp from the other crustacean species. In 1959, imports of fresh, cooked, salted, or dried crustaceans amounted to 4,617 metric tons valued at about US\$1.5 million. This represents a sharp increase over the 555 tons valued at US\$221,000 imported in 1958. Exports of crustaceans in 1959 amounted to 192 tons as compared with 147 tons in 1958 and 195 tons in 1957. (United States Embassy, Rome, November 30, 1960.)



Japan

AGREEMENT ON TRANSHIPMENTS OF ATLANTIC TUNA DRAFTED:

The Japanese Export Frozen Tuna Fisheries Association met on December 15, 1960, to discuss the problem of Atlantic tuna brought home to Japan by common carriers, which has been under study for some time as a means of stabilizing the world tuna market. The Association approved the Board of Directors' draft agreement on the condition that shipments be continued on a flexible basis.

For the period between March and June of 1961, it is decreed that the shipment of 7,000 metric tons of Atlantic tuna to Japan would be mandatory, but the shipment of an additional 3,000 tons would be voluntary. The losses resulting from marketing the fish in Japan would be shared equally by those engaged in the Atlantic tuna fisheries.

Following the discussions on the Atlantic tuna problem, the freezer carriers' proposal to increase the quota of frozen albacore for shipment to the United States was presented. A lively discussion was held on the following points: (1) The present quota (30,000 tons) of frozen albacore for shipment to the United States does not meet the needs of the United States. Perhaps the quota is inadequate. (2) Twenty thousand tons (of the export quota) have been consumed between April and November 1960. It would seem that this could be interpreted very favorably. In the end it was agreed that a study regarding the disposition of the present albacore quota, whether adequate or not, would be conducted. (Nippon Suisan Shimbun, December 16, 1960.)

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INCREASED EXPORTS OF ATLANTIC ALBACORE TUNA TO U. S. UNDER STUDY:

The Japanese Export Frozen Tuna Fisheries Association is studying the problem of increasing exports of frozen albacore tuna to the United States in anticipation of a good albacore season in the Atlantic Ocean.

The present quota of Atlantic Ocean frozen albacore for export to the United States is 5,000 short tons for the Japanese fiscal year which ends March 31, 1961. Of this amount, nearly 3,500 tons have already been exported. A catch of 4,500 tons was expected for January to March 1961, which means an excess of 3,000 tons over the present quota. The Association was studying problems involved in exporting this 3,000 tons to the United

Japan (Contd.):

States. (Nippon Suisan Shimbun, January 13, 1961.)

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1961 AGREEMENT ON CANNED TUNA-IN-BRINE EXPORTS TO U. S.:

The Japanese Canned Food Exporters Association's standing committee on tuna met in December 1960 to study the agreement on the export of canned tuna-in-brine to the United States. This agreement was to be submitted for approval to the Association's general meeting on December 16, 1960. The new agreement is effective January 1, 1961, to November 30, 1961. Affected are canned tuna-in-brine, tuna spread, and tuna pet food. Canned tuna-in-brine quota is 2,200,000 cases.

The first sale, which was arranged with the Tokyo Canned Tuna Joint-Sales Company, consisted of 200,000 cases (150,000 cases of whitemeat and 50,000 cases of lightmeat) and was scheduled for loading in December 1960 and January 1961. The price per standard case was the same as before, whitemeat \$9.15 a case and lightmeat \$6.80 a case. (Nippon Suisan Shimbun, December 16, 1960.)

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EXPORTS OF CANNED SKIPJACK TUNA IN OIL, 1959:

Exports of canned skipjack tuna in oil by Japan in 1959 amounted to 1,288,726 cases. Japan's best customer for the product in 1959 was West Germany with imports of 518,236 cases, or 40.2 percent of the total exports.

Country of Destination	Quantity
	Cases
Canada	23,720
Netherlands	49,538
Belgium	76,248
Britain	67,080
West Germany	518,236
Switzerland	39,253
Italy	39,511
Marta	32,528
Egypt	39,178
Syria	70,279
Lebanon	82,029
Other countries (Middle Near-East)	191,487
Others	59,639
Total	1,288,726

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EXPORTS OF FROZEN TUNA TO YUGOSLAVIA, JANUARY-MARCH 1961:

The Japan Frozen Food Exporters Association has started to handle all frozen tuna exports to Yugoslavia through one channel--the association itself--for delivery in January-March 1961. During that period, 11 Japanese vessels are scheduled to deliver 4,380-4,480 metric tons of frozen tuna to Yugoslavia.

The prices are \$300 c.i.f. & c. on albacore and \$280 c.i.f. & c. on yellowfin. As the Yugoslavian side had offered to pay \$290 on albacore and \$270 on yellowfin, negotiations took place and both sides agreed on \$280 on yellowfin. Talks in mid-December were still going on and they were expected to result in a price of around \$290 on albacore. The Yugoslavian side is said to be satisfied with the quantity offered (Suisan Tsushin, December 13, 1960.)

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PRICE SET FOR CANNED TUNA EXPORTS TO WEST GERMANY:

Fifteen large Japanese exporters holding actual export records of canned tuna in oil to West Germany held a meeting and established prices on exports to that country. They also agreed not to sell at lower prices in the future. The agreed prices are: US\$7.30 c.i.f. a case on canned skipjack and yellowfin, 48 7-oz. cans; \$4.50 c.i.f. a case on canned skipjack and yellowfin, 48 3½-oz. cans; \$6.80 c.i.f. a case on canned big-eyed and Indian tuna, 48 7-oz. cans; \$4.00, c.i.f. a case on canned big-eyed and Indian tuna, 48 3½-oz. cans.

The canned tuna in oil market in West Germany is making rapid strides, and it is now the major importing country for Japan's pack of canned tuna in oil. (Japanese newspaper, December 2, 1960.)

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50,000 CASES OF CANNED TUNA IN BRINE SHIPPED TO UNITED STATES:

The Tokyo Canned Tuna Sales Company shipped 50,000 cases of canned tuna in-brine to the United States in December 1960. This shipment, which was loaded by December 10, included 20,000 cases of whitemeat tuna (7-oz. cans at \$9.15 per case) and 30,000 cases of lightmeat tuna (7-oz. cans at \$6.80 per case). Including the 1,880,000 cases shipped previously, exports for 1960 as of December 10

Japan (Contd.):

totalled 1,930,000 cases. (Nippon Suisan Shimbum, December 16, 1960.)

EXPORTS OF CANNED TUNA OTHER THAN IN BRINE OR OIL, 1956-59:

Japanese exports of miscellaneous packs of canned tuna (other than canned tuna in brine or oil, in 1959 amounted to 20,900 cases (valued at US\$122,706). This amount was down sharply from the 58,984 cases exported in 1958, but was higher than the exports for 1956 and 1957.

pete with United States products. In fact, a plan for consolidating brands has been suggested. However, the basic problem is high raw tuna prices. To correct this, it will be necessary to establish a fund for stabilizing fish prices, according to Nippon Suisan Shimbum, January 11, 1961.

NEW POLICY ANNOUNCED ON LICENSING TUNA VESSELS:

On December 4, 1960, the Japanese Fishery Agency announced a new policy concerning the licensing of tuna vessels. The purpose is to offset the depressive conditions facing the Japanese tuna fleet.

Japanese Exports of Canned Tuna (Other than in brine or oil), 1956-59								
Country of Destination	Quantity				Value			
	1959	1958	1957	1956	1959	1958	1957	1956
 (Cases) (US\$)			
United States	3,265	3,744	2,483	3,154	17,964	19,000	15,761	26,958
United Kingdom	4,819	15,876	-	-	36,417	108,494	-	-
Canada	159	1,493	17	2	1,292	10,917	142	17
West Germany	962	18,350	-	-	5,542	100,089	-	-
Ryukyu Islands	500	1,825	15,887	2,883	2,167	5,011	46,411	9,881
Italy	2,586	6,139	595	-	7,806	33,269	3,681	-
Others	8,609	11,557	426	476	51,518	75,212	2,622	2,006
Total	20,900	58,984	19,408	6,515	122,706	351,992	68,617	38,862

PACKERS ASK FOR SUBSIDY TO STABILIZE RAW ALBACORE TUNA PRICE:

Some Japanese tuna packers are calling for adoption of measures to stabilize raw albacore tuna prices. The Japanese price of raw albacore tuna has crept beyond the packers' profit-making level of 60 yen per kilogram (US\$166.70 a metric ton) due to poor albacore catches for the past three years.

In January 1958, raw albacore in Japan sold for 65 yen per kilogram (\$180.50 a ton); in June 1959, 155 yen per kilogram (\$430.50 a ton). The price per kilogram paid for raw albacore in 1960 was: March, 85 yen a kilo (\$236.10 a ton); April, 110 yen a kilo (\$305.50 a ton); May, 115 yen a kilo (\$319.40 a ton); June, 115 yen a kilo (\$319.40 a ton); July, 123 yen a kilo (\$341.60 a ton); August, 111 yen a kilo (\$308.30 a ton); September, 95 yen a kilo (\$263.80 a ton).

The Japanese export price for whitemeat tuna canned in brine, on the other hand, has decreased. Some exporters hope to export only name Japanese brands which can com-

The salient features of the policy are:

A. Medium-Class Tuna Vessels (over 40 tons but less than 100 tons): (1) Vessels under 70 tons, after reaching a stipulated age (wooden vessels - 6 years, steel vessels - 12 years) and vessels in this size category lost at sea, can be replaced with vessels up to 100 tons. Tonnage replacement shall not be required. (To build a new vessel, say one of 100 tons, a vessel owner has to furnish a license for a vessel of the same size. The old vessel would then be taken out of the fishery. If a shipowner wanted to build a vessel of 100 tons and owned a vessel of only 50 tons, he has to purchase the license of another 50-ton vessel from another shipowner or possibly go into partnership with him. He can then build a 100-ton vessel by putting up the licenses of the two 50-ton vessels, providing other requirements can be met. The two 50-ton vessels would then be taken out of the fishery. The purpose of this practice is to control the size of the fishing fleet.) (2) Vessels over 70 tons but less than 100 tons, after reaching a stipulated age (wooden vessels - 6 years, steel vessels - 12 years), by following certain procedures, can be classified as distant-water vessels through an exchange of licenses with distant-water vessels eligible for tonnage replacement purposes.

B. Distant-Water Fishing Vessels: (1) Vessels which previously had been allowed to increase their tonnage up to 160 tons shall now be permitted to increase their tonnage up to 180 tons. Tonnage replacement shall not be required. (2) Vessels under 180 tons, after reaching a stipulated age (wooden vessels - 6 years, steel vessels - 12 years) and those in this size category which have sunk, can be replaced with vessels up to 240 tons. Tonnage replacement shall not be required. (3) Previously, only medium-class tuna vessels could be used for tonnage replacement for the purpose of constructing larger vessels. Henceforth, distant-water vessels less than 180 tons can also be used for tonnage replacement under certain conditions (See A-2). (4) In the past when replacing vessels of over 240 tons with new larg-

Japan (Contd.):

er vessels, the allowable increase in tonnage was calculated by subtracting 200 tons from the proposed total tonnage of the new vessel, then taking one percent of the balance, and adding seven tons to it. This practice shall henceforth be discontinued.

C. Vessels Engaged in Two Fisheries: (1) Regardless of type of vessel, the licensing period shall be for six months or less. (2) Restrictions on ports of landing shall be eliminated.

D. Special Licenses: (1) Special licenses can be granted to medium-type vessels (engaged in one fishery only) under 70 tons. They shall be good for a period of five years or less.

E. Vessels Changing over from Salmon Fishery to Tuna Fishery: (1) The "carry over" of licenses shall be permitted. (2) Vessels after reaching a stipulated age (wooden vessels - 6 years, steel vessels - 12 years) and vessels in this group which have sunk, can be replaced with vessels up to 100 tons. Tonnage replacement shall not be required.

F. Others: Concerning items A-1, A-2, B-2, and E-2, vessels reaching the stipulated age can be replaced with larger vessels if they have engaged in their respective fisheries continuously for three years or longer. However, once conversion is made and the vessels engage in the fishery continuously for three years beginning December 2, 1960, then these vessels can be replaced with larger vessels even if management has not operated the vessels for three years. Tonnage replacement in this case shall not be required.

The Fishery Agency undertook a study of the Japanese tuna fishery for the first time in 1960 because of the depressed conditions facing the fishing fleet in the 70- to 180-ton class. The smaller vessels in the 70- to 80-ton range were hard pressed economically by the well-equipped vessels under 40 tons, which require no license; those in the 180-ton group which primarily fish for tuna and bonito were also showing signs of operational stagnation.

Until now, the tuna fleet has been unable to build suitable vessels due to many existing restrictions. For example, vessels under 100 tons were classified as medium-type and those over 100 tons as distant-water type. At the same time the fisheries themselves were divided into a medium-type fishery and distant-water tuna-bonito fishery. Vessels classified as medium-type were not allowed to operate in areas classified as distant-water fishing grounds. Also, the construction of new larger vessels was not permitted without tonnage replacement.

The Fishery Agency felt that these policies were not suitable to existing conditions and came out with its new policy concerning the licensing of the tuna fleet. There still remains a distinction between medium-type vessels and distant-water vessels but this appears to be a formality only and a way has been opened for medium-type vessels to switch to distant-water type. This is covered in provision A-2.

In the past, only the medium-type vessels could be scrapped for tonnage replacement. This practice is now being extended to the distant-water vessels as well. In this case, one-half of the tonnage of the distant-water vessel (to be scrapped) can be used by a party seeking to build a larger vessel, and this 50 percent has to be put up as tonnage replacement. In the case of medium-type vessels, the practice has been to allow one-third of the tonnage of the vessel (to be scrapped) to be used as tonnage replacement for the construction of one boat. (Nippon Suisan Shimbun, December 7, 1960.)

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COMPANY FILES APPLICATION TO FISH FOR TUNA OFF URUGUAY:

One of the large fishing Japanese companies filed an application late in November 1960 with the Japanese Fishery Agency for approval of the company's plan of sending its vessel Eikyo Maru, a 250-ton tuna long-liner, on charter to Uruguay. If approved, the Eikyo Maru was to depart from Tokyo before the end of 1960. On arrival in Uruguay, the vessel will engage in tuna fishing in the adjacent waters off the Rio de la Plata under a 3-year fish sales contract with Uruguay's national fisheries organization. The operation base will be Montevideo.

The Atlantic area off Uruguay had been under study by the Japanese company since 1958. The Uruguay organization has been asking for the tie-up with the Japanese for some time. (Japanese newspaper, November 30, 1960.)

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ITALY IMPORTANT USER OF FROZEN TUNA:

Italy, an important user of Japanese frozen tuna, especially that produced by Japanese vessels in the South Atlantic, is receiving considerable attention in Japanese fishery periodicals. There is a difference of opinion as to the amount of frozen tuna Italy can use. One group in Japan claims the Italian market can absorb 50,000-70,000 metric tons, but Japanese exporters set the figure at some 30,000 tons.

Judging from the fact that 26,000 tons were shipped to Italy in 1960 and the price declined to as low as \$200 per ton, an issue of the Fisheries Economic News in November 1960 pointed out that 20,000 tons can possibly be shipped to Italy under the present system of unregulated shipments and far in excess of 30,000 tons if shipments are regulated.

Japanese vessels operating in the Indian Ocean are prevented from shipping to the Atlantic European countries because of the poor market conditions.

The Japanese periodical also points out that new countries are starting to fish for tuna. For example Yugoslavia is pushing the construction of tuna vessels of its own.

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Japan (Contd.):

TUNA FISHING TRENDS IN INDIAN OCEAN AND SOUTH PACIFIC:

Tokai University's Fisheries Research Institute released a report on Japanese tuna fishing in the South Pacific and the Indian Ocean.

Indian Ocean: Indian tuna (a variety of tuna found in the Indian Ocean related to bluefin) fishing had rapidly improved in the latter part of August 1960 in the eastern Indian Ocean (sea area off Java and the small Sunda Islands) but it fell off in mid-October 1960 to 4.4 metric tons a day on the average. Although Indian tuna fishing on the high seas declined to 5.5 tons a day, its operational area was spreading and catches were comparatively good. In mid-November schools of Indian tuna were discovered around 30°-31° S. latitude. Albacore fishing was good in the western Indian Ocean and around Madagascar at 5 tons a day. Yellowfin fishing around the equator continued poor.

South Pacific: In the sea area southeast of Hawaii, 125°-155° W. longitude, Japanese tuna fishing was generally poor while fishing grounds at the south latitudes were improving gradually, especially for big-eyed. Yellowfin fishing became active between 6° and 7° S. latitude, 117°-121° W. longitude. Both albacore and yellowfin fishing was quiet between 26°-27° S. latitude in the Coral Sea. Not much yellowfin was seen around Palau, New Guinea, Kusai, and Jaluit in the central southern sea area, but small-sized yellowfin fishing was comparatively good at the fishing grounds, south side of the Solomon Islands. (Fisheries Economic News, November 22, 1960.)

CATCHES OF INDIAN OCEAN TUNA DROP DRASTICALLY:

According to information obtained in December 1960, Japanese catches of Indian tuna in the area west of Australia extending from 102° E. to 109° E. and from 22° S. to 28° S. had fallen drastically. Fishing operations were started a month earlier in 1960 and catches remained good, averaging 5 to 6 tons per day in early November. Approximately 50 vessels were concentrated in that area in November and December.

However, from November 27 on, catches fell drastically and in December averaged 1

to 2 tons a day. This is the first time that this has happened, occurring just when fishing was expected to reach its peak. The fishermen were having difficulty locating good fishing grounds.

One explanation given for this poor fishing is the appearance in substantial numbers of killer whales, which were not seen on the tuna grounds in past years. Killer whales were in evidence in the area 100° E. to 105° E. and as far south as 28° S. and they are said to have chased the tuna away. Some feel that the large number of killer whales appearing in the area may have caused the Indian tuna to leave the grounds temporarily or may have caused them to move to distant areas completely. At any rate, the fluctuation in the catch of Indian tuna coming as it did towards the beginning of the new year was expected to push up the price. (Nippon Suisan Shimbum, December 12, 1960.)

PACKS OF CANNED FISHERY PRODUCTS LOWER IN 1960:

Exports of canned fishery products for 1960 by Japan were estimated at the beginning of the year to exceed 10 million cases. Actual exports, however, amounted to about 85 percent of the 9.6 million cases exported in 1959. The exports of canned fish and shellfish in 1960 were affected by poor tuna fishing and decreased production of canned salmon, trout, and crab.

The decrease from 1959 to 1960 was considerable in the packs of canned salmon and trout--dropped to almost half of the 2,830,000 cases packed (flat No. 2 can, 96 cans per case) in 1959. Canned crab meat pack in 1960 did not exceed 500,000 cases or not quite 75 percent of 1959's 658,000 cases.

The decreased exports of canned salmon and crab meat were caused by (1) reduced catch quota, and (2) the small carryover from 1959. Tuna canned in oil exports in 1960 were only about 70 percent of the 1.6 million cases exported in 1959 due to poor skipjack tuna fishing.

Canned oysters and cuttlefish pack in 1960 amounted to about 70 percent of the 1959 pack due to poor fishing (280,000 cases of canned oysters and 200,000 cases of canned cuttlefish in 1959). Tuna canned in brine and canned sardine packs in 1960 were slightly less than in 1959 (2,070,000 cases of canned tuna in brine and 630,000 cases of canned sardines in 1959).

Japan (Contd.):

Increases in the packs of canned fishery products in 1960 as compared with 1959 occurred for mackerel and horse-mackerel. The pack of horse-mackerel is estimated to be about three times the 200,000 cases packed in 1959. Although the 1960 pack of canned mackerel-pike was extremely poor, the 1960 exports are expected to exceed the 800,000 cases exported in 1959. (Suisan Tsushin, January 4, 1961.)

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CRAB FISHERY COMMITTEE PROPOSALS FOR 1961:

The Japan Fishery Society is reported to have held the meeting of its crab committee and discussed the industry's attitude on crab fishing for 1961 during Japan-Soviet fishery talks. The following three points were decided to be presented to the Japanese Fishery Agency:

(1) Quota for 1961 to be 280,000 cases for Japan's four factoryship fleets as compared with 260,000 cases in 1960;

(2) Abolish regulations (prohibited areas, the length of nets, etc.) on operations in order to permit both Japan and Russia to carry out operations in accordance with their capacities; and

(3) Change the opening day for fishing from the 1959 date of April 13 to April 1, 1961. (Japanese newspaper, January 4, 1961.)

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STUDIES ON BROWNING OF CANNED CRAB MEAT:

Crab meat, soaked and washed in water to extract and remove amino acids and reducing sugars, shows less browning on canning than untreated crab meat. Temporary preservation of the boiled meat in ice water is also effective.

Browning may occur if crab meat is heat-processed at 110° C. (230° F.) for 85 minutes. The degree of the browning of the claw meat is distinctly greater than that of meat from other parts, whereas no visible difference is apparent between the browning of the shoulder and leg meat. The amounts of volatile basic nitrogen, total nitrogen, amino nitrogen, and reducing sugars are larger in

claw meat than in meat from other parts. When the pH of meat is over 6.5, browning increases with increasing pH. (Bulletin of the Japanese Society of Scientific Fisheries, 24(12):971-77, 1959.)

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FISH MEAL PRODUCERS BEING ORGANIZED:

The Japanese Fisheries Agency is actively pushing the establishment of an organization to represent the manufacturers who use waste to produce fish meal. Already, an organization called the "Japan Fish Meal-Fish Oil Producers Association" has been established in Hokkaido.

The Fishery Agency hopes to begin by organizing regional groups, then establish a national organization encompassing the fish flour industry as well. For the present, the regional associations would not engage in economic ventures, such as joint marketing, but would concentrate on controlling production, exchanging information, and conducting political activities directed towards domestic and foreign consumer groups.

The problem of Japanese imports of Peruvian fish meal had not been resolved between the Fishery Agency and livestock people and the Fishery Agency hoped to seek an amicable settlement through the establishment of an association which would serve as chief spokesman for the meal industry in negotiations to maintain a balance in the feed-supply market, as well as improve the preparation of data and background information. (Nippon Suisan Shimbum, December 7, 1960.)

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FISH MEAL PARLEY ENDS WITHOUT AGREEMENT:

Japan's Second Conference for Adjusting the Supply and Demand of Fish Meal was held on December 2, 1960, in Tokyo. Participants included the Fishery Agency, meal factory (mothership) companies and producers, and users representing their respective interests. The problems of supply and demand and Peruvian fish meal imports were discussed, but the meeting ended in a deadlock with the producers and users holding divergent views.

Informed circles in the Fishery Agency feel that the discussions have been exhausted and the problem will now be resolved through political settlement.

Japan (Contd.):

Japanese market conditions for the period November 1960 to March 1961 are forecast by the different groups to be as follows:

Fishery Agency: Fish meal (from waste)--79,764 metric tons, Northern Pacific meal--52,537 tons, Total--132,301 tons. Exports--4,155 tons. Potential supply--128,146 tons.

Livestock Bureau: Demand: 78,500 tons through allocated channels; 4,000 tons for independent raisers; total--82,500 tons, in storage: 23,000 tons.

Supplies to meet these demands are forecast by industry as 7,000 tons from waste; 40,000 tons from the North Pacific operation; total--47,000 tons. Should 30,000 tons be imported for January-March 1961, this will total 77,000 tons.

On the other hand, the producers claim that of the 15,000 tons of North Pacific meal consigned earlier to the domestic users, deliveries up to November 15 (until which date the producers had to pay storage) amounted to only 5,552 tons. This seems to indicate that the users have more than enough on hand.

FISH-MEAL PRICES, 1960:

Average wholesale fish-meal prices quoted by the Aquatic Oils Association of Japan and export prices based on Japanese Customs returns by months for 1960 were as follows:

Japanese Fish-Meal Average Prices, 1960 by Months				
1960 Average Prices	Domestic Wholesale Prices		Export Price (f.o.b.)	
	US\$ per Metric Ton	US\$ per Short Ton	US\$ per Metric Ton	US\$ per Short Ton
January	153.33	189.10	130.00	117.94
February	143.33	130.03	140.00	127.01
March	135.83	123.22	135.00	122.47
April	129.72	117.68	125.00	113.40
May	131.39	119.20	120.00	108.86
June	130.28	118.19	123.00	111.59
July	129.72	117.68	123.00	116.12
August	119.17	108.11	120.00	108.86
September	121.94	110.62	136.00	123.37
October	141.67	128.52	1/	1/
November	147.22	133.56	1/	1/
December (10-day average)	148.61	134.82	1/	1/
1/Not available.				

(United States Embassy, Tokyo, January 3, 1961.)

AGREEMENT REACHED ON FACTORYSHIP FISH MEAL PRICE:

Following negotiations between Japanese buyers and producers regarding prices for 40,000 metric tons of factoryship fish meal scheduled for release on the Japanese market, agreement was reached on the price of 56,500 yen (US\$156.94) per metric ton (about US\$142.38 a short ton) for January 1961 deliveries.

Considerable differences existed in the original prices asked by each group. Originally, the producers wanted 56,800 yen (\$157.78) per metric ton. On December 24, 1960, the buyers offered 55,700 yen (\$154.72) a ton for December deliveries and 56,500 yen (\$156.94) a ton for January deliveries. Not wishing to protract negotiations further, the producers agreed to accept the January price offer. (Nippon Suisan Shimbun, January 9, 1961.)

OUTLOOK FOR FISHERIES IN 1970:

A division of the Japanese Economic Council has submitted to the Government plans to double Japan's gross national product by 1970.

Outlook for Japanese Fisheries in 1970 as Compared With the 1956-58 Average		
Fishery	1970	Average 1956-58
	(1,000 Metric Tons)	
Total fisheries production	7,401	5,228
Pelagic fisheries	4,236	2,839
Salmon-trout fisheries	190	181
Crab fishing	61	61
Large-size and other trawling in northern seas	612	35
Large-size and other trawling in South China Sea	15	12
Large-size trawling, west of 130°	18	18
Other trawling, west of 130°	351	319
Skipjack hook-and-line	223	179
Tuna long-line (mothership type and landings abroad included)	477	276
Medium-size trawling	650	534
Purse seining	820	681
Mackerel-pike dip nets	614	427
Mackerel hook-and-line	205	123

Note: Sum of fisheries categories does not equal grand total since there seems to be some duplication among the categories listed.

The committee's report on the modernization of Japanese agriculture includes the outlook on fisheries production by principal species in 1970. (Suisan Tsushin, December 7, 1960.)

FISHERY AGENCY AUTHORIZES CONSTRUCTION OF 840 FISHING VESSELS:

From April 1 to December 5, 1960, the Japanese Fishery Agency had approved the

Japan (Contd.):

construction of 840 fishing vessels. Of this number, 570 are wooden vessels (22,621 gross tons) and 270 steel vessels (82,329 gross tons). The steel vessels include large supply vessels and trawlers.

Bonito-tuna vessels totaling 295 make up about one-third of the new construction. Most of these are under 40 gross tons, reflecting the switchover made by fishermen from other less stable fisheries following the Fishery Agency announcement that bonito-tuna vessels in that category will not require licenses. Only two tuna vessels in the medium-class category (70-ton range) are being constructed. However, this figure does not include some vessels which will be fishing for tuna part of the time. (Fishing Industry Weekly, No. 296, December 25, 1960.)

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TRAWLER FISHING REPORTED GOOD OFF NORTHWEST AFRICA:

A Japanese company reports that its vessel Amagi Maru (large-size trawler of 2,350 tons) began fishing near the Canary Islands, off the northwest coast of Africa early in December 1960. The vessel reported a catch of several species, including high-priced sea bream. Catches exceeded expectations. As much as 40 metric tons of fish a day were caught on the average, and the freezing equipment could not keep up with the catch. This made it necessary for the vessel to discard the lower-priced species. (Fisheries Economic News, December 8, 1960.)

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LARGE FISHING COMPANY PLANS TO INVEST OVER \$13 MILLION:

The president of the largest Japanese fishing company plans to invest 5 billion yen (US\$13.9 million) for facilities and equipment in 1961.

The following outlays are planned: (1) Construction of a new fodder (feed) plant (expected to be completed in April 1961). (2) Construction of a 5,000-ton class freezer-vessel. (3) Construction of two 1,500-ton distant-water trawlers. (4) Construction of ten two-boat trawlers as replacements. (5) Construction of new cold-storage facilities and food canneries and expansion of existing facilities (a 4,000-ton capacity cold-storage plant will be built at Osaka). Plants at Shimo-

noseki, Nagasaki, and Shiogahama will be expanded. (6) Construction of several tuna long-line vessels. (7) Expansion of mink farm in Hokkaido; and (8) Investment in an oil company. (Nippon Suisan Shimbun, December 12, 1960.)



Korea

EXPANSION OF OFFSHORE FISHERIES PLANNED:

The Korean Office of Marine Affairs of the Ministry of Commerce and Industry plans to send a fishing fleet to the Bering Sea, according to a press report in the January 12, 1961, issue of Pacific Business Service. Reported plans call for a 5,000-ton factoryship which will process the catch for export, and eight 80-ton trawlers. In addition, plans are being made, according to the press report, to increase the number of deep-sea vessels operating off Samoa and to promote fishing in the Indian Ocean and around the "Peace Line" (United States Embassy in Seoul, January 13, 1961.)



Kuwait

SHRIMP INDUSTRY:

The shrimp industry of Kuwait as of late 1960 was confined to a single Kuwaiti firm. The two active shrimp vessels fish about 35-40 miles off the Kuwaiti coast, east and south of the island of Failaka. The only processing plants are those on board ship. The shrimp are deheaded, machine-sorted for size, packed by hand in five-pound boxes, and blast-frozen aboard the vessels. The five-pound cartons are then packed in 50-pound master cartons and stored on the vessels until transferred to ships in Kuwaiti harbor. The shrimp season runs from August to May as a rule.

The partial 1959/60 season's catch of about 240,000 pounds will probably be increased sharply in the 1960/61 season. Assuming no major voluntary or forced alteration of the potential pattern, the two Kuwaiti vessels should land about 500,000 pounds of shrimp this season. This figure will increase substantially if the two new vessels ordered for this season arrive in time for operations. One large 150-ton-capacity vessel was due in December 1960 and it was expected to be

Kuwait (Contd.):

in operation in the last half of the season. The time of arrival of a fourth vessel of less than 10-ton capacity was uncertain as of November 30, 1960.

The shrimp trawlers carry on the average 6 to 8 natives to assist in the manual tasks of trawling and deheading the shrimp. The bulk of the other tasks are handled by United States experts.

Persian Gulf shrimp, according to the United States observers, is the "white" variety. The 1960 catch, made toward the end of the August 1959-May 1960 season, averaged 16-20 count. Catches in November 1960 were mostly 21-25 count, but the trawlers expect larger shrimp as the season ends. Practically all shrimp caught by the Kuwaiti shrimp vessels are larger than 35 shrimp per pound.

In 1960, shrimp processing for export was a monopoly of a single company. Another group, sponsored by a leading Kuwaiti shaykh, has established contact with a British firm to launch a wide-scale fishing industry in the Gulf and seeks a United States connection especially for the shrimp industry. As currently conceived, the operation would include fishing in the entire Gulf, with processing plants located further south in Dubai. This company expects to utilize the native fishing fleets, the United States Consul in Kuwait reported on November 30, 1960.



Malaya

**JAPANESE-MALAYA FISHERY
COMPANY PLANS TUNA
PLANT CONSOLIDATION:**

The joint Japanese-Malaya fishery products company at Penang planned to combine its two canneries (each has a packing capacity of 200 cases a day) in March 1961 in view of the favorable acceptance of its canned tuna in oil in West Germany, Denmark, Sweden, and the Netherlands.

The corporation's largest customer is West Germany. A British firm is presently handling sales to that country at a contract price of \$100,000 for 15,000 cases. This contract expires in April 1961.

Sales in Denmark and Holland are being handled exclusively through a Japanese company. The export price is said to be over \$6.00 per case f.o.b. Penang, which is higher than the \$7.30 c.i.f. price in the exporters' agreement set by the Japanese Canned Food Exporters Association.

The company in Malaya was established jointly by the Overseas Fishing Company of Japan and by Malayan packers. At present, four vessels, each of about 100 tons, fish for the company. They average about one trip of albacore and yellowfin a month. (Nippon Suisan Shimbun, December 19, 1960.)



Mexico

**ENSENADA SPINY LOBSTER
FISHERY TRENDS, DECEMBER 1960:**

As of December 20, 1960, a total of 742,174 pounds of spiny lobsters had been landed by lobstermen along the coast of Baja California. This total is said to be below normal, but it is expected that by the end of the October 1, 1960-March 15, 1961 season, a total of 1,400,000 pounds will have been produced.

One reason for the lower total at the end of the year was some bad weather around Ensenada. It was also due in part to the inactivity of the lobstermen at the Bahia de las Tortugas, one of the most productive areas. The lobster cooperatives there did not work during October pending resolution of a dispute over the management of the cooperatives. The dispute was resolved by placing new men in charge of the cooperatives. (United States Consulate in Tijuana, January 16, 1961.)

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SHRIMP INDUSTRY:

Statistical data on landings of shrimp in Mexico by species or size are not collected. The only available statistics are those of the Direccion General de Pesca e Industrias Conexas which collects data on cooked-peeled, dry with shell, dry without shell, fresh heads-on, and fresh headless shrimp.

The Statistical Office of the Mexican Bureau of Fisheries estimates that the heads-on weight of the 1960 shrimp catch will amount to about 76,000 metric tons, or about 25 percent more than the 1959 catch of 61,000 tons. Other sources believe that this estimate for 1960 landings is too high and that 1960 landings will be about 10 percent above the 1959 landings, or about 67,000 metric tons.

According to the National Chamber of the Fishery Industry there are 995 shrimp trawlers operating in Mexico--357 in the Gulf of Mexico and 638 in the Pacific. It is believed that not all of these trawlers are operating. One source, for example, said that on a recent count there were only 105

Mexico (Contd.):

Table 1 - Mexico: Production of Shrimp Products Converted to Heads-On Weight to Estimate Shrimp Landings, 1959

Area	Products Produced					
	Cooked Peeled	Dry with Shell	Dry Peeled	Fresh Heads-On	Fresh Headless	Estimated Total Landings
 (Heads-On Weight in Metric Tons)					
Pacific	8.8	2,132.4	16.8	2,488.7	39,586.7	44,233.4
Gulf of Mexico	271.0	1,694.4	125.6	95.9	14,615.8	16,802.7
Total	279.8	3,826.8	142.4	2,584.6	54,202.5	61,036.1
Conversion Factor used	3.25	3.00	7.30	1.00	1.68	-

Table 2 - Mexico: Production of Shrimp Products Converted to Heads-On Weight to Estimate Shrimp Landings, 1960

Area	Products Produced					
	Cooked Peeled	Dry with Shell	Dry Peeled	Fresh Heads-On	Fresh Headless	Estimated Total Landings
 (Heads-On Weight in Metric Tons)					
Pacific	10.4	2,559.0	20.4	2,986.4	49,483.2	55,059.4
Gulf of Mexico	325.3	2,033.1	150.4	115.1	18,269.8	20,893.7
Total	335.7	4,592.1	170.8	3,101.5	67,753.0	75,953.1

working trawlers in Salina Cruz. More trawlers were present but they were tied up.

Vessel distribution by ports is as follows: Gulf Coast: Tampico, 24; Frontera, 10; Ciudad del Carmen, 229; and Campeche, 94. Pacific Coast: San Felipe, 26; Golfo Santa Clara, 21; Puerto Penasco, 47; Guaymas, 185; Topolobampo, 53; Mazatlan, 191; and Salina Cruz, 115.

In addition to the above there are four vessels in the Pacific equipped for freezing on board. There are no freezer ships in the Gulf of Mexico. The trawlers are all Diesel-powered and vary in length from 40 to 70 feet.

In addition to the trawlers there are a number of outboard and sail-powered dugouts operating on shrimp in the bays, estuaries, and lagoons where trawling is prohibited. Cast nets are used from these craft.

Shrimp vessel construction is at a standstill in Mexico. The various industry sources contacted indicated that they had no plans at this time for increasing their fleets.

Practically all Mexican shrimp are sold on consignment, consequently export prices can be calculated from United States wholesale prices. Mexican export prices would be United States wholesale prices less: (1) brokerage fee of usually 7 or 8 percent; (2) export duties and severance taxes: (a) 3.24 U.S. cents a pound from Pacific coast except Salina Cruz and Santa Rosalia, and (b) 3.31 U.S. cents a pound for Gulf of Mexico ports and the Pacific Coast ports of Salina Cruz and Santa Rosalia; (3) transportation charges: (a) 2.5 U.S. cents a pound for Guaymas, (b) 3.0 U.S. cents a pound for Gulf ports except for breaded shrimp which is 4.0 U.S. cents, (c) 4.5 U.S. cents a pound for Salina Cruz when transported across Isthmus for shipping from Puerto Mexico; and (4) loading, unloading, storage, and miscellaneous port and handling charges, 1.0 to 2.0 U.S. cents a pound.

During 1960 Mexico exported an increasing amount of peeled and deveined shrimp until at mid-year it was estimated that about 80 percent of the Carmen and Campeche exports to the United States were peeled and deveined or individually quick frozen. Since then exports of these types have declined and latest estimates run a little less than 50 percent of peeled and deveined from the Campeche-Carmen area.

Several sources have suggested that a fair average for Mexican exports to the United States during 1960 of peeled and deveined and individually quick-frozen shrimp would be 50 percent of the exports from the Gulf of Mexico and 10 to 15 percent of the exports from the Pacific. The peeled and deveined shrimp exported from the Pacific Coast have been mostly broken and seconds.

Breaded shrimp exports in 1960 also increased over 1959. It is estimated that about 2.2 million pounds of breaded shrimp were exported to the United States in 1960.

Total exports of Mexican shrimp to the United States during 1960 are expected to be larger than for 1959. It is estimated that Mexican shrimp exports to the United States during 1960 may reach or exceed 75 million pounds. However, about 1.2 million pounds of Mexican imported shrimp (mostly 16-20 count) were reported lost in a warehouse fire in Nogales, Arizona, early in November 1960. Furthermore, it is understood that Mexican export figures do not include the catches of the 5 Guatemalan trawlers that land in Salina Cruz and process their catches under bond in that free port.

Wages for regular shrimp plant laborers vary from 15-22 pesos (US\$1.20-1.76) a day. These laborers are paid for seven days a week, but they work six. They are paid double for overtime and for Sundays when they work.

Peeling and deveining is done by piecework according to the size of shrimp at so much per kilogram of shrimp meats peeled and deveined. The following rates have been reported by two Mexican shrimp-processing plants: Plant No. 1: 15-20 count, 0.4 pesos per kilo (1.45 U.S. cents a pound); 21-30 count, 0.5 pesos per kilo (1.81 U.S. cents a pound); 31-50 count, 0.6 pesos per kilo (2.18 U.S. cents a pound); and 51-65 count, 0.7 pesos a kilo (2.54 U.S. cents a pound). Plant No. 2: 30 count and under, 0.4 pesos per kilo (1.45 U.S. cents a pound); 31-50 count, 0.75 pesos a kilo (2.72 U.S. cents a pound); and 51 count and over, 1 peso per kilo (8.0 U.S. cents a pound). Good workers are reputed to make 40-50 pesos (US\$3.20-4.00) a day doing peeling and deveining.

One breeding plant has the breeders working in teams. If the team breeds 4,000 pounds or less per day the rate is 0.75 U.S. cents a pound; if more than 4,000 pounds the excess is paid for at 1 U.S. cent a pound.

Mexico (Contd.)

Table 3 - Mexico's Exports of Shrimp, January-October 1960

Country of Destination	Frozen				Canned	
	Gulf of Mexico, Salina Cruz, Oaxaca and Santa Rosalia		Pacific Except Salina Cruz, and Santa Rosalia		Metric Tons ^{2/}	US\$1,000
	Metric Tons ^{1/}	US\$1,000	Metric Tons ^{1/}	US\$1,000		
United States	8,571.1	8,841.9	14,963.9	15,479.2	85.4	25.5
Canada	8.3	9.6	-	-	75.9	78.8
Germany	0.1	0.1	-	-	-	-
Great Britain	-	-	-	-	6.5	6.9
Total	8,579.5	8,851.6	14,963.9	15,479.2	167.8	111.2

1/Net weight.
2/Gross weight.

Note: In addition, a small amount (0.6 tons) of fresh or iced shrimp from the Gulf of Mexico and the Pacific were exported to the United States; and small amounts (0.1 tons) of dried shrimp were exported to the United States, Great Britain, and Guatemala. Values converted at rate of 12.49 pesos equal US\$1.

In the Carmen-Campeche area it is reported that an average skipper earns 3,400 pesos a month (US\$272); an average engineer 2,350 pesos (US\$188); an average winchman 1,850 pesos (US\$148); and an average cook 1,350 pesos (US\$108). An average skipper is reported to earn between 3,500 and 4,000 pesos (US\$280-320) a month at Salina Cruz and between 4,000 and 4,500 pesos (US\$320-360) from Mazatlan north. In addition to wages the fishermen are furnished food. One source reported his food costs to be 12 pesos (96 U.S. cents) per-man-per-day at Salina Cruz and 15 pesos (US\$1.20) per-man-per-day from Mazatlan north.

The seven species of shrimp comprising the bulk of the commercial shrimp catch in Mexico are all exported. They are as follows: East Coast: *Penaeus setiferus*; *P. aztecus*; and *P. duorarum*. West Coast: *Penaeus stylirostris*; *P. vannamei*; *P. californiensis*; and *P. brevis*.

Mexico has the physical capacity of plants and fishing gear to produce a considerably greater quantity of shrimp than she has yet produced. A lesser number of trawlers were operating in Mexico during 1960 than during 1958 but it is estimated that the total shrimp catch for 1960 will be about 30 percent greater than for 1958. Mexico's increasing shrimp production during the past three years can be attributed to three good crop-years along the Pacific Coast and a better than usual fall-run in the Gulf of Mexico during 1960.

Mexican capacity to expand production appears to depend upon the ability of the shrimp populations to produce good annual crops of young. At present this ability seems to depend upon those factors that cause good, mediocre, or poor crop-years for young shrimp. These factors in most part are unknown but, apparently, they differ with each species of shrimp.

Of the seven species only one, *P. vannamei*, which predominates in the area between Mazatlan, Sinaloa, and San Blas, Nayarit, has been studied sufficiently to obtain some idea of one of the factors which cause fluctuations in the annual crop in that area. Conditions were such in 1960 that the production of *P. vannamei* in the area under consideration was less than half that of 1959. Nevertheless, in areas to the north the production of other species was sufficiently great to more than offset the drop in catch from the Mazatlan-San Blas area.

With current knowledge it is impossible to predict what the Mexican 1961 catch might be. However, since the bulk of the catch seems to come from summer- and fall-spawned shrimp, it is probable that production for the first five or six months of 1961 will exceed that of 1960. After that it will depend upon the success of the 1961 spawning, which is unknown.

Until further knowledge is gained concerning the factors causing good and bad years, it is futile to predict Mexico's shrimp future. The known fishing grounds are now being fished heavily to a depth of about 45 fathoms and there does not appear to be any additional grounds within this depth range in Mexico. There is some possibility of increased

catches of *P. brevis* along the west coast of Mexico in depths greater than 45 fathoms but it is probable that the majority of the catch would be too small for commerce. This, however, will not be known until tried. (United States Embassy, Mexico City, November 30, 1960.)

Note: Values converted at rate of 12.49 pesos equal US\$1.



Morocco

FISH-MEAL PRICES FOR EXPORT, SEPTEMBER 1960:

Export prices for Moroccan fish meal during September 1960 varied between 35,783 and 70,000 Moroccan francs (US\$70.72-138.34) per metric ton. Average export prices for the month were 44,489 francs (\$87.92) a metric ton, or about \$79.76 a short ton.

The prices reported covered prices for export to East Germany, Spain, Singapore, France, Algeria, and Madagascar. The highest price was for exports to Madagascar and the lowest for exports to France. There is no significant domestic market in Morocco for fish meal and oil.

No fish oil was exported during September 1960. In August 1960, the export price of fish oil to France was 61,893 francs or about \$122.32 a metric ton (US\$110.97 a short ton or 5.55 U. S. cents a pound).

The only available chemical analysis of Moroccan fish meal is: water 5.7-10 per-



Morocco (Contd.):

cent; nitrates 58-70 percent; animal fats 4-11 percent; chlorides 0.61-5.26 percent; silica (SiO₂), 0.28-0.61 percent. (United States Consulate, Casablanca, December 23, 1960.)



Netherlands

ANTARCTIC WHALING OPERATIONS AS OF JANUARY 8, 1961:

The Netherlands Whaling Company released its first interim production figures for the 1960/61 whaling season, on January 25, 1961.

Operations started on November 28, 1960. Production figures on January 8, 1961, for the company's factoryship *Willem Barendsz* were: whale oil 39,180 barrels (6,530 metric tons), sperm oil 1,728 barrels (288 tons), whale meat meal 1,389 tons, and frozen whale meat 509 tons.

Comparable figures for the previous season, when operations started on December

Japan. It is reported that the ship was sold for 4.4 million guilders (about US\$1,166,000). The Netherlands Whaling Company further reported that the ship sailed for Yokohama on January 2, 1961. (United States Consulate, Amsterdam, January 4, 1961.)

Note: Also see *Commercial Fisheries Review*, June 1960 p. 57.

CANNED SARDINE (PILCHARD) IMPORTS:

A rather small quantity of California-type pilchards or sardines is imported by the Netherlands. A substantial portion of the total imports is supplied by Japan, while imports from the United States rank second. Although imports from the United States are generally of better quality than

Table 1 - Quantity of Netherlands Imports of Canned Pilchards, 1956-59 and Jan.-Sept. 1959 and 1960

Country of Origin	Jan.-Sept. 1960	Jan.-Sept. 1959	1959	1958	1957	1956
 (1,000 Lbs.)					
Japan	172	137	212	313	203	209
United States ..	51	99	115	20	20	146
South Africa ..	143	31	37	53	126	112
South-West Africa	-	-	35	35	26	-
Other	13	22	15	9	4	24
Total	379	289	414	430	379	491

Table 2 - Value of Netherlands Imports of Canned Pilchards, 1956-59 and January-September 1959 and 1960

Country of Origin	Jan.-Sept. 1960		Jan.-Sept. 1959		1959		1958		1957		1956	
	US\$ 1,000	1,000 Guilders	US\$ 1,000	1,000 Guilders	US\$ 1,000	1,000 Guilders	US\$ 1,000	1,000 Guilders	US\$ 1,000	1,000 Guilders	US\$ 1,000	1,000 Guilders
	Japan	35	133	28	106	44	164	61	232	40	153	40
United States	11	42	22	84	26	98	4	15	4	14	30	113
South Africa	26	99	6	21	7	26	10	36	22	85	21	80
South-West Africa	-	-	-	-	6	24	7	25	4	17	-	-
Other	3	10	5	17	3	12	2	7	1	3	5	19
Total	75	284	61	228	86	324	84	315	71	272	96	366

Note: Guilders converted at following rates: 1956 at 3.88, 1957 at 3.791, 1958 at 3.775, 1959 at 3.77, Jan.-Sept. 1959 at 3.773, and Jan.-Sept. 1960 at 3.771 guilders equal US\$1.

16, 1959, were: whale oil 30,939 barrels (5,157 tons), sperm oil 225 barrels (38 tons), meat meal 1,058 tons, and frozen meat 241 tons. (United States Embassy, The Hague, January 25, 1961.)

SALE OF WHALING FACTORYSHIP TO JAPAN CONFIRMED:

The management of the Netherlands Whaling Company on December 29, 1960, confirmed a Tokyo report that the former Dutch whaling factoryship *Bloemendael* has been bought by the Nittoh Whaling Company of

imports from Japan, the latter are lower in price. Imports from the United States have fluctuated rather widely in recent years. The sharpest drop took place in 1957 when imports dropped about 90 percent from 1956. Imports from the United States increased again substantially in 1959 when 115,000 pounds were imported as compared with 20,000 pounds in 1958, but dropped again by 50 percent in the first nine months of 1960.

Fluctuations in United States imports are caused largely by sharp changes in the catch of pilchards in California. A leading Dutch importer states that the raising of Dutch import duties on pilchards in compliance with the gradual adaptation to the common external tariff of the European Economic Community will not seriously harm the market position of pilchards. (United States Embassy, The Hague, December 5, 1960.)

Netherlands (Contd.):

FREEZER-TRAWLER STARTS FISHING:

The first Netherlands' freezer-trawler, the Egmont, has completed her trials in the North Sea and started operating in that area. Her owners claim she is the first West European trawler which can freeze its whole catch without prior processing. (Fishing News, December 16, 1960.)

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SHRIMP INDUSTRY:

The Dutch shrimp fishery is conducted in the coastal waters of the Netherlands from the Prisian Islands in the north to Goeree Bank in the south. Small vessels with a crew of 2 or 3 men are used in the shrimp fishery. Shrimp caught in those waters are extremely small and fishing takes place throughout the year.

Table 1 - Dutch Landings of Shrimp, 1956-60

	1960 ^{1/}	1959	1958	1957	1956
	(1,000 Lbs.)				
Shrimp, edible . . .	9,921	10,362	9,259	9,700	13,007
Shrimp, non-edible ^{2/}	17,637	18,519	14,771	15,873	23,148
Total	27,558	28,881	24,030	25,573	36,155

^{1/}Estimated.
^{2/}Very small shrimp.

The shrimp are cooked on board the vessels immediately after capture and are sold both peeled or unpeeled. The peeling of the shrimp takes place in private homes in the

Table 2 - Average Export Prices for Dutch Shrimp, 1956-59

Shrimp Product	1959				1958				1957				1956			
	(Guilders a Kilogram)				(U.S. Cents a Pound)				(U.S. Cents a Pound)				(U.S. Cents a Pound)			
Unpeeled shrimp	2.61	2.61	2.63	2.05	31.4	31.3	31.5	24.3	2.61	2.61	2.63	2.05	31.4	31.3	31.5	24.3
Peeled shrimp	7.40	7.01	6.71	6.03	89.0	84.2	80.3	71.4	7.40	7.01	6.71	6.03	89.0	84.2	80.3	71.4

fishing villages. Only manual labor is used for the peeling because the shrimp are too small to allow mechanical processing. However, research has been under way for several years to find a mechanical peeling device for the small shrimp, thus far without success. Some canning plants process

shrimp, but it is of only minor importance relative to other fishery products. There are no special processing plants for the shrimp industry.

Total landings of shrimp (heads-on) in 1960 were estimated to be about 27.6 million pounds, down about 3 percent from the 1956-60 average landings.

There are 375 vessels (maximum 80 hp.) used in the shrimp industry. There is no vessel construction program, but the general tendency is to replace old vessels with vessels which have a higher-powered engine. The average engine power of old vessels varies between 20 and 40 hp., while the average hp. of new vessels is about 60.

Domestic as well as export prices fluctuate during the course of the year. They tend to decline in the spring when the supply reaches its annual peak and reach their highest level in December because of high seasonal demand. The number of shrimp per pound varies between 80 and 300. The largest shrimp are selected for export.

During the first eight months of 1960 the average domestic and export price of unpeeled shrimp was fl. 2.91 per kilogram (35 U.S. cents a pound), a 32-percent rise over the average price in the same period of 1959. It may be assumed that the average export price also tends to be substantially higher in 1960 as compared to 1959.

Both peeled and unpeeled shrimp are exported, chiefly to France and Belgium-Luxembourg.

Wage rates for peeling vary between fl. 1.25 and fl. 1.50 per kilogram (15-18 U.S. cents a pound) of peeled shrimp.

A gradual but modest increase in the shrimp catch is likely to materialize. Export opportunities are excellent because of

Table 3 - Dutch Exports of Shrimp, 1956-59

Product and Destination	Quantity				Value			
	1959	1958	1957	1956	1959	1958	1957	1956
	(1,000 Lbs.)				(US\$1,000)			
Peeled:								
Belgium-Luxembourg	1,323	1,323	1,102	882	1,220	1,139	950	522
United Kingdom	22	66	110	22	27	26	53	131
France	88	44	88	132	80	53	79	78
Total	1,433	1,433	1,300	1,036	1,327	1,218	1,082	731
Unpeeled:								
France	3,968	2,866	2,646	4,409	1,273	927	923	1,097
Belgium-Luxembourg	1,102	882	1,102	882	345	265	290	157
Total	5,070	3,748	3,748	5,291	1,618	1,192	1,213	1,254

Netherlands (Contd.):

the limited shrimp catch in French and Belgian coastal waters. The shrimp catch could be sharply increased if shrimp can be found outside coastal waters. Dutch biologists are examining this possibility. (United States Embassy, The Hague, November 29, 1960.)

Note: Values in guilders converted to U. S. dollar at following rates: 1960 and 1959, 3.770, 1958, 3.775; 1957, 3.791; and 1956, 3.830 guilders equal US\$1.



Norway

DECIDES NOT TO WITHDRAW FROM WHALING CONVENTION:

On December 29, 1960, the Norwegian Government decided against withdrawing a second time from the International Whaling Convention. The decision for continued adherence was taken in the light of moves toward a meeting of the United Kingdom, the Netherlands, Japan, and Norway in London on February 20, 1961, to try to reach agreement on an equitable distribution of whaling quotas. Confirmation that Russia was still willing to limit its catch to 20 percent of the total quota was a further favorable factor in the decision.

The Norwegian whaling industry and all the members of the Norwegian Whaling Council except its Chairman have strongly urged the Government to withdraw, since it was considered that continued adherence only accelerated the decline of the industry. The Norwegian press has reported that the industry is deeply disappointed with the decision and has quoted a leading spokesman as saying it will cost the industry about 30 million kroner (US\$4.2 million).

Norway readhered to the Convention in September 1960, but conditioned its adherence, however, on the readherence of the Netherlands and the establishment of international quotas satisfactory to Norway.

The Norwegian whaling industry opposed readherence on the grounds that the conditions should be fulfilled before, rather than after readherence. The Norwegian industry has repeatedly urged withdrawal from the Convention, asserting that the decline of the Antarctic whaling industry was being has-

tened by adherence. (United States Embassy in Oslo, December 28, 1960 and January 10, 1961.)

MARKETING OF FROZEN FISH IN EUROPEAN MARKETS TESTED:

A sample shipment of about ten tons of Norwegian frozen fish was sent to markets in France and Northern Italy to test the chain of refrigerated transport and storage facilities required to deliver the fish to the consumer in first-class condition.



The experiment, undertaken under the sponsorship of the European Productivity Agency, aims at finding the cheapest and most efficient method of transporting fish to these markets. Norwegian engineers planned to accompany the consignment on its journey by rail to North Italy and France, making tests during the trip to determine whether satisfactory standards of refrigeration are maintained. They also expect to test conditions at the refrigerated storage plants that will receive the fish, in the refrigerated vans that will distribute it, and in the deep-freeze counters from which it will be sold. (Canadian Foreign Trade, December 17, 1960.)



Pakistan

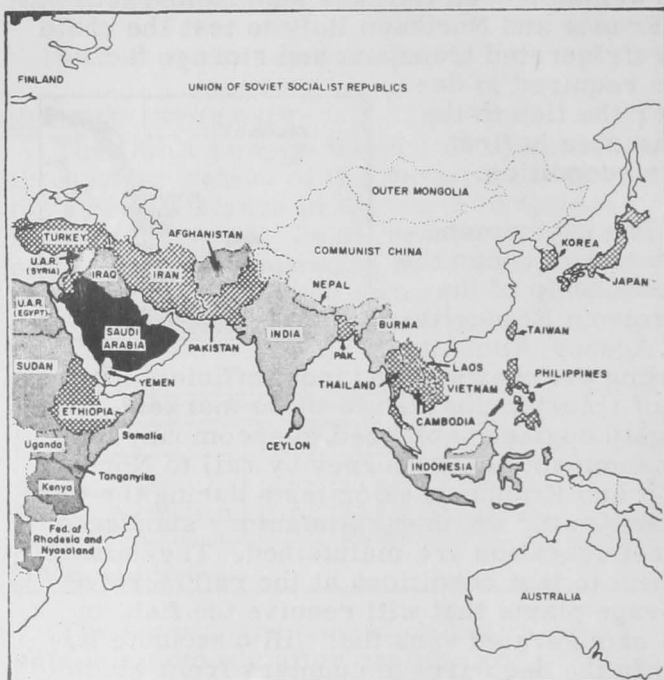
SHRIMP INDUSTRY:

Shrimp are caught in both East and West Pakistan on a commercial basis. Shrimp fishing is concentrated in the creek system of the Indus River in West Pakistan and the delta region of Brahma-Ganjes in East Pakistan, particularly in the district of Khulna. Along the Mekran Coast shrimp are caught in Kalmat Bay, Soumiani Bay, Pasni Bay, Gwadar, and Ganz Shore.

The Government has done very little work to determine the extent or location of the shrimp grounds, and has only gone out to depths of 11 fathoms. However, the Government believes that the untapped resources of shrimp are great.

Pakistan (Contd.):

Although shrimp are caught throughout the year, the catch during the monsoon season is very insignificant. The bulk of the catch is from November to March in the creek system of the Indus River, from October to April on the Mekran Coast and in East Pakistan.



The shrimp freezing and canning industry is of fairly recent origin; the first shipments were exported in 1956. This infant industry has slowly developed its overseas markets.

At present, there are 3 freezing plants operating in West Pakistan all located in Karachi. The oldest of these has a freezing capacity of 5 tons per day and cold-storage space for 80 metric tons. It freezes by the blast-freezing method. Another plant has a freezing capacity of $3\frac{1}{2}$ -4 tons per day, an ice-making capacity of 33 tons per day, and cold storage space of 300-400 tons. The blast-freezing method is also used in this plant. The third plant is a new plant, which went into operation in 1960. It has a blast-freezing capacity of 10-15 tons per day and plate freezing of 5 tons, and can produce 10-15 tons of ice daily. The cold-storage capacity is 250-300 tons.

Besides the freezing plants in Karachi, there is one canning plant. It has a capacity of 5,000 cans ($3\frac{3}{4}$ -5 oz.) per day.

For the Karachi area the Government has sanctioned 4 additional freezing plants, 2 canning plants, and 1 combination freezing and canning plant. The sanctions have been based on value and not on plant capacity, so that the production potential can not be gauged. In addition to these sanctions already granted, the Government has under consideration another proposal for location in Karachi in which United States capital investment would be involved.

In East Pakistan only 1 freezing plant is in operation. This plant has a 5-ton-a-day freezing capacity. In East Pakistan the Government has sanctioned 4 additional plants. The sanctions are also based on monetary value of plants rather than freezing capacity. Consideration is also being given to a proposal for another plant in East Pakistan. This too involves possible United States investment.

The Government has plans for 3 freezing units to be located on the Mekran Coast, but the sanctions have not yet been given.

Peeling and deveining of the shrimp is done by hand. Sorting by sizes, as well as freezing and actual canning is mechanized. Because of labor costs it is not anticipated that peeling and deveining processes will be mechanized in the near future.

Landings of shrimp (heads-on) for the years 1956-59 were as follows: 1959, 27.0 million pounds; 1958, 32.0 million pounds; 1957, 34.6 million pounds; and 1956, 25.1 million pounds.

The mechanized fishing vessels in West Pakistan totaled 153 in 1960 and in East Pakistan number 19. These vessels are not all involved in shrimp fishing. In West Pakistan, private industry saw in the shrimp industry a field in which it believed large profits could be made supplying raw shrimp for processing. A number of private investors undertook construction of shrimp trawlers. Operating out of the port of Karachi there are 39 trawlers devoted exclusively to shrimp. These range from vessels the smallest of about 20 feet long, a beam of 5 feet, a depth of 2 feet, and a tonnage of less than 2 to a large one measuring 82 feet in length, a beam of 22 feet, a depth of 12 feet, and tonnage of about 133. In addition to these vessels there are between 30 and 40 improvised beam trawlers operating.

The response by the private investor has been so great that if trawler construction con-

Pakistan (Contd.):

tinues at the present rate there will be an oversupply of raw shrimp which can not be absorbed by the shore installations. For this reason the Government at the present time is discouraging the construction of additional trawlers until such time as the new shore plants are in operation. The Government is encouraging the trawler operators to outfit their trawlers with gill nets so that they may be used for fishing other than shrimp.

All of the trawlers at present are owned by private investors of Pakistani nationality with the exception of 2 trawlers which are the property of the Central Fisheries Department, Government of Pakistan.

Frozen shrimp (heads-off) are exported to the United States in the following packs (all five-pound cartons): 10-15 a pound, 36-40 a pound, and 51-60 a pound. The largest percentage of the shipments consist of 36-40 count per pound. One freezing plant stated that the average price of all types of frozen shrimp to the United States, f.o.b. Karachi, was 53 U.S. cents a pound. The plant, also stated that the average price per pound for 10-15 count shrimp was 71 cents and for the 51-60 count shrimp was 35 cents; no price was available for the 36-40 count shrimp, the most popular size shipped to the United States.

Based on the statistics of exports, the following average prices f.o.b. Karachi were calculated: January-June 1960, 38 U. S. cents a pound; 1959, 53 cents a pound; 1958, 45 cents a pound; 1957, 53 cents a pound; and 1956, 37 cents a pound.

be said there are no subsidies, exporters of processed shrimp are entitled to export bonus vouchers. For the canned and frozen shrimp the exporter is entitled to a voucher authorizing him to use 40 percent of the foreign exchange earned for the import of items which can be selected from a list of over 200 products. These vouchers can be sold in the open market where the premium is currently around 130 percent of face value. Hence there is an element of subsidy. If dried shrimp is exported, the voucher entitlement is 20 percent.

In the processing plants (freezing and canning) the workers employed in shelling and deveining are paid on the basis of 3 rupees 8 annas (about 74 U. S. cents) per maund (82.3 pounds) of unshelled shrimp. Those working on the freezers and canning equipment are considered semiskilled workers and are paid 3 rupees (about 64 U. S. cents) per 8-hour shift in the day time and 4 rupees (about 85 U.S. cents) per 8-hour shift at night time.

Although some of the fishermen are paid on a share basis, this is not the usual method. It is customary to employ the crew on a salary, food, and bonus basis. Rates of monthly pay are as follows: Captain, Rs. 600 (about US\$127); Mate, Rs. 300 (about US\$64); Engineer, Rs.200 (about US\$42); and Crew member, including cook, Rs. 150 (about US\$32). The bonus per crew member for a good catch may amount to US\$6-8 per month.

Very few trawlers, in fact, have persons holding a captain's license. The senior officer usually is one holding a mate's rating. On vessels up to 60 tons the normal complement is 6 to 9 persons; those of larger size number 9 to 13, but there is only 1 trawler that carries a crew of 13.

Table 1 - Pakistan's Exports of Processed Shrimp, 1956-59 and January-June 1960

	Frozen Shrimp ^{1/}			Dried Shrimp ^{2/}			Canned Shrimp ^{3/}		
	Quantity 1,000 Lbs.	Value		Quantity 1,000 Lbs.	Value		Quantity 1,000 Lbs.	Value	
		Rs. 1,000	US\$1,000		Rs. 1,000	US\$1,000		Rs. 1,000	US\$1,000
Jan.-June 1960 . . .	472	838	188	-	-	-	23	126	27
1959	761	1,908	404	785	1,142	242	80	686	145
1958	726	1,531	324	901	1,287	273	66	350	74
1957	754	1,868	396	177	296	63	-	-	-
1956	136	240	51	723	465	99	-	-	-

^{1/}All exports of frozen shrimp were made to the United States.
^{2/}Exports mostly to Burma, Hong Kong, Kuwait, and South Africa.
^{3/}Practically all exports of canned shrimp made to United Kingdom.
 Note: Rupees converted at rate of 4.72 Rs. equal US\$1.

The exporters of frozen, canned, and dried shrimp are required to obtain an export license. This is pro forma and all licenses are granted. There are no export taxes on shrimp. While technically it may

During the monsoon season when the trawlers are not operating, the owner keeps the mate (or captain) and the engineer on half pay for the months of June, July, and August.

Pakistan (Contd.):

Central Fisheries Department, Government of Pakistan, estimates that the annual income of the ordinary fisherman is probably in the neighborhood of Rs. 1,600 to Rs. 1,750 (US\$339-371) including bonuses, but excluding the value of food received.

Although information is lacking on the extent of the shrimp stocks, it is believed that the resources are extensive. Accordingly it seems possible that the annual catch of shrimp could physically be expanded. However, it is not expected that increased production in frozen shrimp, which is normally shipped only to the United States, will be possible until new shrimp-freezing plants are established in Pakistan.

The single shrimp-canning company has shown little interest in entering the United States market since its markets in other countries absorb its production.

If the trawler fleet continues to increase and is capable only of shrimp fishing, then the only possible outlet for the catch would be for dried shrimp until such time as other processing facilities are constructed. (United States Embassy, Karachi, December 12, 1960.)



Peru

AVERAGE EXPORT PRICES FOR FISH MEAL:

November 1960: The Peruvian National Fisheries Society--the trade organization for the fisheries industry--reported in December 1960 that the average export price for fish meal (65-67 percent protein) during November 1960 was about US\$60 a metric ton (US\$54.43 a short ton). Average prices for all fish meal exported in November (including fish meal contracted for at higher prices prior to November) was US\$75 a metric ton or about US\$68.04 a short ton.

The domestic price for fish meal is about the same as the export price for the same quality meal. However, as a rule the fish meal sold on the domestic market is much lower in quality and is made from waste rather than from whole fish.

December 1960: The Peruvian National Fisheries Society--trade organization for

the fisheries industry--reported in January 1961 that the average export price for fish meal (65-67 percent protein) during December 1960 was US\$61 a metric ton (US\$55.34 a short ton). (United States Embassy in Lima, December 21, 1960 and January 19, 1961.)

* * * * *

EXPANSION OF FISH-MEAL INDUSTRY
CREATES WORLD PROBLEM:

The sudden, even explosive development of anchoveta fishing off the coast of Peru--which can serve as both an inspiration and a warning to countries seeking to develop fishery resources--has had worldwide repercussions, according to an FAO spokesman.

Up to ten years ago the Peruvians caught less than 50,000 metric tons of fish a year. In 1959 they caught about 2 million tons, of which anchoveta and similar species accounted for 1.8 million tons. Almost all the Peruvian catch of anchoveta is used to make fish meal.

This dramatic development has brought with it complications and problems.

The Peru Current, which flows northward along the Peruvian coast, is immensely rich in aquatic resources, including anchoveta, bonito, whales, dolphins, and seals, and supports huge flocks of guano birds. But, rich as these resources are, they may not be able to stand up to the present rate of exploitation, particularly if the traditional guano bird population is to be maintained.

This represented one of the main problems which had arisen because of the intensity of fishing. The other was concerned with the fish-meal industry.

When fishing for anchoveta was started on a large scale a few years ago, the conditions were such that the fish-meal manufacturers were able to make fortunes very quickly. They had no difficulty in obtaining the raw materials--anchoveta--as boats could go out twice a day and come back loaded with fish. So, in view of the abundance of raw material, low operating costs, and other favorable factors, the fish-meal industry in Peru expanded rapidly, much of it financed by loans from banks and other private sources. Almost all the fish-meal production was sold to the export market, but when such large quantities became available the price for fish meal fell drastically from about \$130 a metric ton to its present level of about \$75 a ton. This drop has had widespread repercussions not only on the Peruvian industry but also on the fish-meal industry throughout the world.

Some idea of the importance assumed by the fishing industry to Peru is gained by the fact that marine products now contribute more than 3 percent of the gross national income and account for about 7 percent of Peruvian exports. At the same time, it provides employment for more than 27,000 people.

Linked with this problem of the expanding fishing industry is the problem of guano production.

The guano birds feed on the anchoveta and it is estimated that the birds eat at least 4 million tons of this fish per year. The population of these birds fluctuates from about 30 million to 10 million but no one knows why. Some people believe the birds die off when the stocks of fish fail or decline, while others contend that the birds die because they are infected by parasites or some other form of disease, but it does seem true that the birds can only exist in great numbers if fish are there for them to feed on.

And there is no doubt that guano, which is the droppings of these birds, is of great importance to the farmers in Peru. About 6½ million tons of guano are collected each year and of

Peru (Contd.):

this only a little over a million tons are exported. The rest is sold at a cheap price to Peruvian farmers as a kind of subsidy.

The Peruvian Government has been, naturally, much concerned as to the effects of heavy fishing of anchoveta stocks and, indeed, for a time prohibited new fish-meal plants.

The rapidly rising production of fish meal and the drastic fall in market price have aroused concern among both Government and the industry about future developments. FAO has been asked by Governments and by the fish-meal industry in various countries to call a meeting to consider what can be done to ensure a stable future for the industry. The present situation has reduced output in a number of countries, affecting the incomes of fishermen and others concerned with the industry. The meeting will be attended by Government representatives, accompanied by advisers from their fish-meal industries. It will attempt to assess the world demand for fish meal and to consider ways and means of increasing effective demand.

The situation resulting from the sudden development of the Peruvian fishing industry in one direction only provides a very good example of the kind of danger inherent in unplanned and unbalanced exploitation of natural resources.

It is an example which should be studied carefully by many countries now seeking to develop their natural resources, whether in fisheries, forestry, or in other fields. It calls attention once again to the fact that such countries need a balanced development program so that progress made in one sector of an industry should not have an adverse effect on other sectors. A proper balance is particularly needed between primary production on the one hand and the marketing and use of the product on the other. The lack of such balance can completely frustrate the objective of development and, moreover, as in the case of Peru, be damaging on an international scale.

* * * * *

FISH MEAL EXPORTS LIMITED TO 600,000 TONS IN 1961:

The Government of Peru has responded to a request by Peruvian producers of fish meal for governmental measures to aid the industry, whose exports during the first nine months of 1960 reached 383,600 metric tons, valued at 850.2 million soles (US\$30.8 million), 10 percent of the value of Peru's total exports for that period. According to the President of the National Fisheries Society (Sociedad Nacional de Pesqueria), the trade organization of the Peruvian industry, governmental action was deemed necessary to save it from "imminent paralyzation" as a result of the continued decline in the world market price, which is now said to be below the cost of production.

Through the Society and other channels, the industry has been endeavoring, without success, to find ways of regulating production or exports of fish meal through voluntary action. For the first time, all Peruvian fish-meal producers and exporters will now be working together to that end because, under a recently-issued decree, prior approval by the Society will be required before export licenses will be granted by Peru's Bureau of Fish and Wildlife, Ministry of Agriculture.

At a meeting of principal world fish-meal producers held in Paris in October 1960, where Peru was represented by observers only, it was determined that world fish-meal exports in 1961 would be approximately one million metric tons. As the world's largest producer and exporter of fish meal, Peru's suggested allocation was 60 percent, or 600,000 metric tons, a figure which proved to be acceptable to the Peruvian industry. Although the Government of Peru adheres to the policy of free enterprise and has heretofore refused to depart from it, on behalf of the fish-meal industry, it has been

persuaded to institute controls in response to the industry's request. In doing so, the Government has taken into account not only the situation of the industry itself and unfavorable repercussions of the situation upon the economy of the country as a whole, but also the necessity of conserving natural resources. Therefore, the Government officially ratified the agreement reached at the Paris meeting, and has given the force of law to the export quota of 600,000 metric tons for 1961. This has been accomplished by the issuance of Supreme Decree No. 18, dated December 16, 1960 (published in El Peruano of December 20).

The General Manager of the National Fisheries Society reports that the Society has worked out a formula for determining individual export quotas for Peruvian producers for the first quarter of 1961, within the 600,000 metric ton annual quota established at the Paris meeting. A number of factors have been used in determining them, including stocks as of October 31, production during November and December (seasonally good months for anchovy fishing), respective capacities of each plant as determined by the Society earlier in the year, historical sales patterns, and future contracts. Individual quotas are to be adjusted quarterly, in accordance with performance. The system began to function January 1, 1961, and all producers are included in it, since approval of the Society will be prerequisite for obtaining export licenses.

The Society proposes to be in constant touch with the Central Committee of Fish Meal Exporters, being formed in London as a result of the Paris meeting, to be the focal point for all fish-meal marketing information, and it will assure that all shipments from Peru are made in accordance with the quota. Decisions of the Central Committee are to be made by vote based upon quota. It is understood that Peru, entitled to 60 out of the total 100 votes, renounced ten on condition that 51 votes should constitute a majority. In these circumstances, Peruvian producers are in a position to dominate the Committee's decisions.

Concurrently with the establishment of the export quota, Peruvian fish-meal producers have been organizing a marketing organization called "Consorcio Pesquero del Peru, S. A.," a cooperative corporation to which approximately 93 percent of all Peruvian producers belong. Only one major producing company, with three fish-meal plants, has not become a member. The purpose of the organization is to enable producers, some of whom operate with very limited capital, to withstand price speculation and manipulation by working together, and thus to provide for a more orderly marketing of Peruvian fish meal. It was anticipated that the Consortium would be in operation about mid-January.

According to information available, the Consortium will sign an enforceable contract with each of its members to sell only through the cooperative, and brokers will no longer purchase fish meal from individual producers, but from the organization. Procedures are not yet known, but it is possible that already well established sales channels will be used.

The Consortium contemplates the necessity of establishing a price stabilization fund in order to support prices when, because of unreasonable purchase offers, it becomes necessary to prohibit sales and to finance producers with limited capital who must sell in order to stay in business.

Peru's annual fish-meal exports have not yet reached the 600,000-metric-ton level established by the quota. However, the successful operation of the system should, by placing a known limit on Peruvian exports, help to stabilize the Peruvian industry and, considering Peru's dominant position as primary world producer, the world situation also. This would come about because the quota may be expected to put a floor under prices, help to maintain the level of prices, and avoid speculation and sudden price changes. While Peruvian producers have never before found a formula for working together for their mutual welfare, they appear to have made a good start by accepting the Paris agreement and in the setting up of the Consortium.

Peru (Contd.):

Through increased revenue from export taxes, the Government of Peru should also gain from any improvement in the export price of fish meal. Since export taxes are based upon the difference between an officially established production cost figure and actual selling prices, which have been lower than the cost figure in recent months, the Government has been receiving little, if any, revenue from that source.

The Decree which gives the force of law to Peru's export quota of 600,000 metric tons may be summarized as follows:

Preamble: The sea and fish therein are natural resources belonging to the State, which is responsible for conservation and supervision required to protect the living resources of the sea; the accelerated growth of the fish-meal industry, requiring ever increasing quantities of raw fish (anchovy or anchoveta), makes conservation and supervisory measures necessary until such time as hydrobiological studies now being made shall provide a definite basis for regulating the industry; increased Peruvian production and exportation of fish meal has caused the decline of the world price of the product, endangering the stability of the industry and related activities; fish-meal producers from principal exporting countries have entered into the Paris Agreement of October 1 providing for regulation of the international market through the establishment of flexible quotas, and this agreement has been approved by the National Fisheries Society; approval of the Paris agreement is in the national interest, since it should serve to improve the price of fish meal, benefiting the industry and the Government. Therefore it is decreed:

Art. 1. The Paris Agreement of October 1, 1960, reached by fish-meal producers of principal exporting countries and adopted by the National Fisheries Society, is approved.

Art. 2. For three years from January 1, 1961, the exportation of fish meal is prohibited in quantities exceeding the limit established in accordance with the system of export regulation adopted by the National Fisheries Society in order to comply with the Paris Agreement, which established a quota for 1961 of 600,000 metric tons, subject to variations that may be established in subsequent agreements.

Art. 3. The National Fisheries Society is authorized to enforce strict compliance with the system of quotas approved at the General Meeting held on October 26, 1960.

Art. 4. Export licenses for fish meal will be without value unless authorized by the Bureau of Fish and Wildlife of the Ministry of Agriculture, which will not issue such authorization unless the license has been approved by the National Fisheries Society in accordance with the export system adopted by the Society and approved by this Decree. Peruvian Customs officials will not issue fish-meal export policies when the respective license fails to comply with the two requisites indicated in this Article, as well as with legal requirements and regulations.

Art. 5. The National Fisheries Society will immediately undertake to make a general inspection of actual conditions in the fish-meal industry at all establishments along the coast of Peru, to determine in detail the number, location, class, volume of production, and condition of the companies established, the resulting information to be presented to the Government within a period of 90 days, considering also the regularization of stocks. The Bureau of Fish and Wildlife and political, fiscal, and maritime authorities will provide all necessary facilities to assist the Society in this mission.

Art. 6. No license for the manufacture of fish meal shall be issued by the Ministry of Agriculture without appropriate reports from the Ministry of Marine, the Council of Hydrobiological Investigations, the Industrial Bank of Peru, and the National Fisheries Society, with prior consideration in each case of compliance with legal requirements and corresponding regulations, and of the national interest.

Art. 7. The same requirements apply in cases of modification of the license to expand production capacity.

Art. 8. Each company which, in accordance with the report of the National Fisheries Association referred to in Article 5 is not in a position to produce immediately, shall revalidate the license it holds pursuant to the requirements set forth in Articles 6 and 7 above.

Art. 9. The present decree and limitations established in it shall remain in effect until abrogated by new Executive action, on the termination of the economic and hydrobiological studies now being made regarding fisheries, and the industrialization of anchovy. No permit, receipt, document or instrument of any kind may be issued by authorities which might have the effect of evading or impairing the limitations established by this Decree.

Art. 10. Insofar as they are not modified by the present Decree, the provisions of Supreme Decree No. 9 of the Ministry of Agriculture, dated October 9, 1959, and other pertinent dispositions remain in full effect.

Art. 11. This Decree is to be countersigned by the Ministers of Foreign Affairs, Finance, Marine and Agriculture. (United States Embassy, Lima, December 20, 1960.)



Philippine Republic

SHRIMP INDUSTRY:

There are no commercial vessels in the Philippines that fish exclusively for shrimp. Shrimp make up part of the regular catch.

Table 1 - Philippine Shrimp Production, 1956-59^{1/}

Year	By Vessels Over Three Gross Tons	Total Production ^{2/}
..... (Metric Tons)		
1959	4,485	14,000
1958	4,067	13,000
1957	2,492	9,000
1956	3,702	12,000
1/Heads-on weight.		
2/Estimated.		

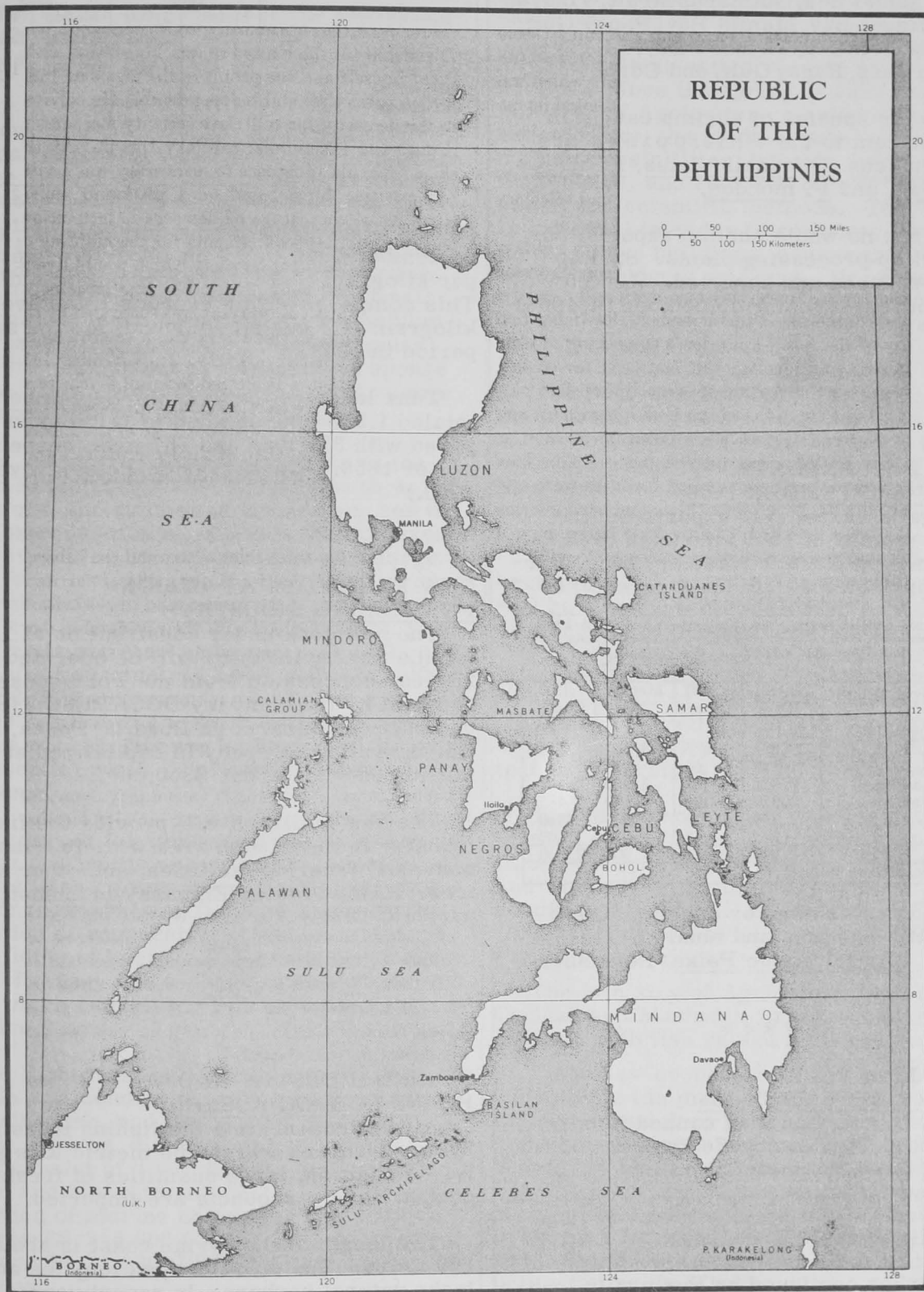
No shrimp fishing ground, as such, has been discovered, but the Bureau of Fisheries is attempting to find the shrimp-breeding grounds. Shrimp are caught in the following fishing grounds where they are available throughout

Table 2 - Philippine Exports of Shrimp Paste, 1956-1959

Year	Country of Destination	Quantity	Value
		Pounds	US\$
1959:	Continental United States	7,769	1,786
	Guam	3,232	700
	Hawaii	1,631	279
	Total	12,632	2,765
1958:	Continental United States	1,102	504
	Guam	4,409	444
	Hawaii	4,502	549
	Total	10,013	1,497
1957:	Continental United States	11,173	1,876
	Guam	459	90
	Hawaii	7,385	873
	Total	19,017	2,839
1956:	Continental United States	4,634	950
	Guam	2,156	301
	Hawaii	-	-
	Total	6,790	1,251

Note: Values converted at rate of 2.004 pesos equal US\$1.

Philippine Republic (Contd.):



Philippine Republic (Contd.):

the year: Samar Sea, Guimaras Strait, Visayan Sea, San Miguel Bay, Manila Bay, Panay Gulf, Bacuit Bay, Sulu Sea, Tayabas Bay, Lingayen Gulf, Cuyo Pass, Ragay Gulf, and Coron Pass.

The major species of shrimp caught in waters adjacent to the Philippines are *Penaeus indicus*, *P. canaliculatus*, *P. affinis*, *P. incisipes*, and *P. mondon*.

There are no whole shrimp exports, nor whole shrimp-processing plants. Shrimp paste is produced and exported. (United States Embassy, Manila, December 14, 1960)



Portugal

CANNED FISH EXPORTS, JANUARY-SEPTEMBER 1960:

Portugal's canned fish exports for the first nine months of 1960 amounted to 42,648 metric tons, or 2,336,000 actual cases. Sardines comprised the bulk (83.6 percent) of

Portuguese Canned Fish Exports, January-September 1959-1960

Product	January-September			
	1960		1959	
	Metric Tons	1,000 Cases	Metric Tons	1,000 Cases
<u>In Oil or Sauce:</u>				
Sardines	35,654	1,876	38,789	2,011
Chinchards	1,135	60	1/	-
Tuna and tunalike . .	2,318	83	3,200	114
Anchovy fillets . . .	2,920	291	4,870	486
Mackerel	378	14	2,909	116
Others	243	12	2,036	103
Total	42,648	2,336	51,804	2,830

1/Probably included in "Others."

those exports, followed by anchovy fillets (6.8 percent) and tuna and tunalike fish (5.4 percent). (*Conservas de Peixe*, November 1960.)

CANNED FISH PACK, JANUARY-SEPTEMBER 1960:

The Portuguese pack of canned fish, in oil or sauce, for January-September 1960 amounted to 36,593 metric tons or 1,972,000 actual cases. Sardines accounted for the bulk (72.9 percent) of the pack, followed by tuna and tunalike fish (12.4 percent).

Matasinhos continued as Portugal's leading sardine port. The average ex-vessel

Portuguese Canned Fish Pack, January-September 1959-1960

Product	January-September			
	1960		1959	
	Metric Tons	1,000 Cases	Metric Tons	1,000 Cases
<u>In Oil or Sauce:</u>				
Sardines	26,677	1,404	26,932	1,417
Sardinelike	-	-	544	28
Chinchards	1,770	94	-	-
Mackerel	410	16	533	21
Tuna and tunalike . .	4,525	162	4,065	145
Anchovy fillets	2,666	267	4,343	434
Others	545	29	1,081	57
Total	36,593	1,972	37,498	2,102

price for sardines during July, August, and September 1960 was 3 escudos 73 centavos per kilogram (5.9 U. S. cents per pound). This compares with 3 escudos 1 centavo per kilogram (4.7 cents per pound) for the same period in 1959.

Tuna landings for January-September 1960 totaled 1,909 tons and bonito 110 tons as compared with 377 tons and 187 tons, respectively, for 1959. (*Conservas de Peixe*, November 1960.)

NEW FACILITIES AT LISBON FOR FISHING INDUSTRY:

The new dock under construction at Lisbon for the fishing industry will be operated on a 25-year concession from the Portuguese Government by the company DOCAPESCA (Sociedade Concessionaria da Doca de Pesca, Sarl). The operating company is capitalized at 10 million escudos (about \$350,000).

The new facilities will provide the fishing industry in the Lisbon area with distribution services, freezing facilities, and other services. (United States Embassy in Lisbon, January 19, 1961.)



Syria

FISHING INDUSTRY AND PLANS FOR EXPANSION:

At the present time the fishing industry in Syria produces 500 to 700 metric tons yearly. In addition, large quantities of fresh and canned fishery products are imported.

The length of the Syrian coast is about 109 miles. The coast is open to gales and lacks natural harbors. In recent years, the coastal fisheries have produced from 300 to

Syria (Contd.):

500 tons of fish. There are more than 1,243 miles of rivers in Syria, plus the equivalent of 50 square miles in lakes and other water sources, producing about 200 tons of fish annually.

Around the Island of Arwad and in the regional waters of the United Arab Republic and the Lebanese Republic there are sponge resources. In normal years, the average production is 3 tons. The season is between June 1 to September 30. In 1958, production reached 5 tons which resulted in depletion, as the increase was made up of the small and cheap sponges. About 20 to 25 medium-size vessels equipped with Diesel engines and diving equipment are engaged in sponge fishing. There are still a number of sponge fishermen who prefer free diving.

The landings of fishery products in the Syrian Region is small compared with water resources, the number of fishermen, and the need for consumption. This is due to several factors: (1) the use of dynamite on a large scale for a long period; (2) the drainage of the Ghab and the expansion of irrigation; and (3) lack of modern fisheries equipment, technique, and poor marketing methods. The income of a fisherman is £S. 800 to £S. 1,000 (US\$223-279) per year in return for 6 to 8 months' work, which is the lowest income of an unskilled laborer in Syria and below the essential needs of a worker's family of 5 persons.

A program for improving the fisheries aims at continuing research for fish resources, fish culture, exploitation, training fishermen, marketing fish and sponges, the formation of cooperatives, and expansion in the building of basins. This requires large sums of money and a large amount of exports which cannot be realized during the next five years.

The Fisheries Institute planned for Latakia will conduct research on resources of marine fish, and on the best methods for fishing, storing, distribution, and marketing. It will consist of a building for the administration and laboratories, and a hall for a collection of marine animals. The project requires £S. 215,000 (US\$60,000) as investment and £S. 21,000 (US\$5,866) for operating expenses.

Due to the decline of fish production from 1,000 to 200 tons annually from fresh-water rivers and lakes as a result of irrigation and dams, the Major Projects Institute has established in the al-Madiq Fortress area ponds for fish culture with a view to improving production. Since the spring of 1959, when the Ministry of Agriculture started these pond experiments, the studies have indicated production possibilities, but this fish farm is far from cities, and requires on-the-spot observation and scientific methods. Therefore, it is essential in order to complete the experiment to have buildings, equipment, and a sufficient number of workers. Necessary investments for the project are estimated at £S. 85,000 (US\$23,743) and operating expenses of £S. 244,000 (US\$68,156).

The Butayhah fish farm aims at exploiting the stream waters entering the Lake of Tiberiad and gathered in the lowlands situated east of the bank between the two gulfs of Mas'adeh and Zakiyah, lands unfit for other exploitations.

The area planned for basins is about 10 hectares (24.7 acres). The construction costs will be about £S. 150,000 (US\$41,900). The expenses of operations will be £S. 5,000 (US\$1,397) annually. The annual production is estimated at 25 tons of carp and mabruk fish, valued at £S. 35,000 (US\$9,777). The private sector will undertake this project to which the Ministry of Agriculture will give technical services with its present machinery.

The Ghab project includes the establishment of three farms for fish raising in artificial lakes at 'Ayn al-Taqa, al-Hawwash, and 'Ayn al-Na'ur, the total area of which is about 750 hectares (1,853 acres). The Ministry of Public Works will undertake the execution of this project.

The Ministry of Agriculture will stock the Qatinah and Mas'adah Lakes and other rivers in Syria with fish raised in fish culture ponds.

Fisheries cooperatives are planned to consolidate the productive capacities of the fishermen and their gear with the aid of equipment, marketing, and financing. It has been decided to form five cooperatives, one in Latakia including Banias and Tartus, a sponge cooperative in Arwad, a fishery cooperative in Qatinah Lake including the Orontes Valley, and a fish cooperative in the Euphrates Valley including the Khabur.

Syria (Contd.):

The cooperatives will be financed by short-term loans not exceeding one year, and long-term loans not exceeding 5 years, from credit facilities extended by the Agricultural Bank.

Necessary investment for the fisheries cooperative program is estimated at about £S.1,075,000 (US\$300,270), and current development expenses amounting to £S.48,000 (US\$13,408). (United States Embassy in Damascus, December 3, 1960.)



Turkey

SHRIMP INDUSTRY OF SOUTHERN TURKEY:

Iskenderun is the center of the shrimp industry for southern Turkey. The main shrimp grounds are located in the Gulf of Iskenderun and off the coast of Mersin-Karatas-Yumurtalik. Exploration for shrimp in offshore waters has not been undertaken as equipment is not adequate, and knowledge is limited.



Shrimp vessels fish from mid-October until April. During winter, shrimp are in fairly good supply on the local market. In summer, the Government-run EBK-Meat and Fish Combine has some frozen shrimp available, in 2-kg. (4.4 pound) packages.

The only processing plant in the area is the freezing plant of EBK. Mechanization is limited; the shrimp are headed by hand, then frozen in cartons. Further processing is not contemplated.

Estimated total annual shrimp landings for Iskenderun vary from 60 tons for a good year (1957), to 40 tons for a bad year (1959).

As of December 1960, there were 26 Diesel-powered boats averaging 30 ft. in

Table 1 - Annual Average Export Prices for Heads-Off Shrimp F.O.B. Iskenderun, Turkey, 1958-60

Year	Fresh	Frozen	
		Small	Large
1960	750-800	600-650	1,100-1,200
1959	680-700	500	800
1958	665-700	-	-

(US\$ Per Metric Ton)

length operating out of Iskenderun, and two from Mersin. These boats are designed for general trawling, and all but one (a 50-ft. steel trawler) was built locally. Local vessels are not equipped with freezing facilities. Future expansion of the fleet is not anticipated. Iskenderun fishing boats are owned locally.

Table 2 - Turkish Shrimp Exports, 1956-1960

Year	Destination	Fresh		Frozen	
		Metric Tons	US\$	Metric Tons	US\$
1960 (Jan. -Oct.):	Lebanon	18	12,904	-	-
	Syria	19	14,180	-	-
1959:	United States	-	-	2	1,325
	West Germany	-	-	2	1,590
	Syria	20	13,990	-	-
	Lebanon	8	5,541	-	-
1958:	United States	-	-	2	3,330
	Syria	19	17,972	-	-
	Lebanon	9	9,640	-	-
1957:	(Not available)				
1956:	United States	-	-	3	3,650
	Lebanon	38	20,187	-	-
	Syria	4	2,089	-	-

There are no skilled workers in the shrimp processing industry. Unskilled labor in shrimp-freezing plants receive approximately 25-30 U. S. cents per hour.

Iskenderun fishermen receive a salary which ranges from about US\$33 per month for unskilled men to about US\$133 per month for the captains and mechanics. Wages are paid only during the fishing season--October-May.

There is little possibility of expanding the annual local catch of shrimp with the equipment used. It was stated that the shrimping grounds are in danger of being fished out unless control is exercised, either through stricter governmental controls or on a voluntary basis.

There are two sizes of shrimp caught--7-8 and 15-20 count (heads-on). An appreciable expansion of Iskenderun exports of shrimp to the United States is not likely. (United States Consulate, Iskenderun, December 12, 1960.)



Union of South Africa

FISH-MEAL INDUSTRY LOWERS RAW FISH PRICE:

As an economy measure, the South African fish-meal industry has adopted a reduced price per ton of raw fish, which has been accepted by private vessel owners. Privately-owned vessels account for an estimated one-third of the South African catch.

Wages or shares paid to the crews of company vessels have also been cut. Exact figures are not available but it is believed that company-vessel crews now receive about £2 (US\$5.60) per ton (down from £2.12 (US\$7.28)). Private vessel owners are believed to have accepted a 20-percent price cut and a loss of fuel allowances and bonuses. In the redistribution of wages on privately-owned vessels, the captains have taken a maximum of nearly a 50-percent cut in pay.

Captains of privately-owned vessels have been earning up to £4,000 (US\$11,200) for seven months' work, four times a crewman's wage. The industry felt it could not support this in view of depressed fish-meal prices. (United States Embassy, Pretoria, December 29, 1960.)

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PERU INTERESTED IN PURCHASING FISHING VESSELS:

The Honorary Consul of Peru in Cape Town, Union of South Africa, has asked a Cape Town firm of naval architects for plans and estimates for the design and construction of steel-hulled, bare-bottom carriers for the Peruvian fishing industry. Seventy-foot steel pilchard vessels built in South Africa suit the Peruvian specifications. Some have already been built for the South African fishing industry. Present capital costs for these vessels are estimated at £310 (US\$868) per foot of length, or about £21,700 (US\$60,760) for a 70-foot vessel with fishing gear and engines installed.

It is understood that the Peruvians have purchased similar vessels from American shipyards in the past, but are interested in South Africa as a lower-priced supplier. South African labor and steel are understood to be significantly lower. (United States Embassy, Pretoria, December 29, 1960.)

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TUNA FISHERY INITIATED:

Three of the leading companies in the South African fishing industry initiated a joint tuna-fishing venture in January 1961. The joint effort calls for the use of five pilchard (sardine) vessels which normally operate out of South-West Africa's Walvis Bay during the pilchard fishing season. Plans call for the vessels to fish for tuna off South Africa's Western Cape from January-April. A separate tuna fishing company may be formed by the group at a later date.

The three companies involved are interested in the United States market for frozen tuna and expect to be able to compete with Japanese selling prices, the United States Consul in Cape Town reported on January 11, 1961.



U.S.S.R.

FISHERY ATLAS ISSUED FOR NORWEGIAN AND GREENLAND SEAS:

Soviet scientists have prepared a fishery atlas for the Norwegian Sea and the Greenland Sea, according to the December 28, 1960, issue of Fiskaren, a Norwegian fishery trade periodical. The atlas contains 150 charts with details on the fishery importance of the areas, fishery statistics, herring biology, and information on fluctuations in the fishery stocks, etc.

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NEW FACTORYSHIP TRAWLER TO FISH IN THE NORTHWEST ATLANTIC:

A new factoryship trawler Angaretis has been turned over to the Lithuanian base for fisheries, according to the November 15, 1960, issue of Sovjetskaja Litva. In addition to refrigerated space, the vessel has equipment for canning cod livers, refining oil for technical use, and producing meal. The vessel was built in Nikolaev. It will lead the next Klaiped fleet's expedition to the Canadian coast. (Fiskets Gang, December 8, 1960.)



United Kingdom

FISH MEAL PRICES, JANUARY 1961:

Fish-meal prices reported by a British trade periodical between November 19, 1960, and January 7, 1961, were as follows:

Type of Fish Meal	Protein Content	Date Quoted	L/s. Per Long Ton	Long Ton (US\$)	Short Ton
South Africa (white fish)	65	11/19/60	48/15	136.50	121.87
Peru (branded)	65	1/ 7/61	36/0	100.80	90.00
Peru (average quality)	65	1/ 7/61	31/10	88.20	78.75
Iceland (white cod)	70-73	11/26/60	42/0-48/16	117.60-136.64	105.00-122.00
Iceland (herring)	70	1/ 7/61	43/15	122.50	109.37
Denmark (herring)	73	11/26/60	45/12	127.68	114.00
Domestic (white fish)	66	1/ 7/61	56/10	158.20	141.25
Domestic (herring)	68-71	1/ 7/61	50/0	140.00	125.00

Note: Imported fish-meal prices are c.i.f. current shipment, and domestic-meal prices (net cash) are ex-plant in 6 long-ton lots and bagged.

(United States Embassy, London, January 9, 1961.)

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SURVEY OF INSHORE FISHERMEN'S EARNINGS, 1959:

British inshore fishermen landed about four percent less white fish in 1959 than in 1958.

The White Fish Authority has published detailed information on its 1959 survey of the costs and earnings of inshore fishermen. They took a sample of 498 vessels--256 from Scottish ports and 242 from England and Wales; all grant-aided. The sample covered 130 inshore ports and included vessels from all the major inshore fishing areas of Great Britain.

The value of the white fish landed by these vessels amounted to 36 percent of the total inshore catch--a higher proportion than has been recorded in previous surveys.

Of the vessels, 410 landed bottom fish; 265 of them exclusively. In Scotland seining predominated. In England and Wales a good proportion were engaged in trawling and pot fishing, but significant numbers carried out line fishing, pot fishing, and drifting, or various combinations of these methods.

Scottish seine and ring-net vessels of an average length of 50.3 feet had an average net surplus per vessel of £1,176 (US\$3,293), representing 13 percent of total earnings. Each member of the crew earned an average £732 (\$2,050) in the year.

At the bottom of the Scottish table in average net surplus were line vessels of an

average length of 31.3 feet. Each made only £67 (\$188), three percent of total earnings, while their crews' average annual wages were £261 (\$731) per man.

In England and Wales, 46-foot seine-net vessels took the highest average net surplus

at £594 (\$1,663) each, 7.3 percent of total earnings, and their crews averaged £675 (\$1,890) per man per annum--highest of all types. Vessels using drift net and pots, and averaging 29.7 feet showed an average loss per vessel of £23 (\$64.40), a debit of two percent on total earnings. Their crews averaged £357 (\$999.60) per man in the year.

The seine-net vessels in the sample for England and Wales were of under 70 feet engaged in fishing trips of not more than one or two days' duration.

The average surplus per stone calculated on the results of vessels for which weight information was given amounted to 10½d. per stone (about 0.857 U. S. cents a pound) in Scotland, and 7¾d. (about 0.607 U. S. cents a pound) in England and Wales. The over-all average surplus per stone was slightly lower than in 1958.

There continued to be a strong correlation between the size of the vessels and the amount of the net surplus, and in most cases between the size of the vessels and the amount of the crews' remuneration.

In Scotland, however, this latter tendency was not clearly established: the highest scale of remuneration was earned in 40-50-foot vessels, and a somewhat lower scale in vessels of over 50 feet.

A member of the crew of a 40-50-foot vessel earned £754 (US\$2,110) in Scottish boats which had an average surplus of £899 (\$2,517). Corresponding figures in England and Wales were £448 (\$1,366) per man, with a boat profit of £337 (\$944).

In vessels of 60-70 feet, a Scottish fisherman drew £709 (\$1,985) against his English

United Kingdom (Contd.):

and Welsh counterpart's £874 (\$2,447), their boats averaging surpluses of £1,195 (\$3,460), and £1,138 (\$3,186) respectively.

The wide disparity in economics of specific kinds of fishing associated with certain districts was manifest in the South of Scotland's average net surplus per vessel of £1,305 (\$3,654) (each crewman averaging £810 or \$2,268) and East England's £77 or \$216 (with crews' wages of £432 or \$1,210 per man per year). (*Fishing News*, December 16, 1960.)



Venezuela

SHRIMP FISHERY TRENDS, DECEMBER 1960:

The shrimp packing and freezing company that was established late in 1959 at Puerto La Cruz, Venezuela, reports that late in 1960 about 20,000 pounds of frozen shrimp were shipped to New York City. In addition, another 15,000 pounds were being processed for shipment.

Landings of shrimp in Venezuela, January-August 1960, amounted to about 1.5 million pounds, heads-on (valued at 871,144 bolivars or about US\$261,605 at exchange rate of 73.33 bolivars to US\$1), according to the Venezuelan Ministry of Agriculture's Division of Fish and Game. In 1959, shrimp landings for the entire year were about 3.5 million pounds.

There is some evidence that Venezuelan and foreign businessmen are becoming interested in freezing and exporting shrimp, the United States Embassy in Caracas reported on December 2, 1960.



Viet-Nam.

SHRIMP INDUSTRY:

With the exception of one modern shrimp-processing firm, the shrimp caught in Viet-Nam are consumed locally and enter into international commerce only in the form of dried shrimp, of which a total of 150 metric tons were exported in the years 1956-59.

Estimates of the number of fishing boats in Viet-Nam run around 37,000. This is a conservative figure supported by a

Fisheries Expert of the U. S. Overseas Mission on the basis of his own extensive inquiries in the fishing areas. About 2,000 of these have been motorized, but the balance are sailing craft of various sizes and probably small sampans. There are no vessels in Viet-Nam devoted exclusively to shrimp fishing. Shrimp are caught with nets in shallow coastal waters, and deep-water shrimp are caught incidentally to the trawling operations. No information is available as to plans for vessel construction. There are continuing plans for motorization of the fleet.



The single shrimp-processing plant in Viet-Nam has been exporting to the United States market since early 1960. As of October 1, 1960, they had shipped about 50 metric tons to the United States (about 90 percent 16 shrimp to the pound or larger). Average selling price was US\$0.841 per pound f.o.b. Saigon. Official statistics for shrimp exports, January-August 1960 were: 22 tons of dried shrimp exported to Hong Kong; and 45 tons of frozen shrimp to the United States.

There are no export controls on shrimp, though an export tax of 5 percent ad valorem is imposed on all shrimp, dried or frozen. Proceeds of exports are given the benefit of the VN\$48=US\$1 rate, and also a subsidy of VN\$18.50 per kilo (about 24 U.S. cents a pound at official rate of exchange, VN\$35 equal US\$1).

The shrimp-processing company reports wage rates of 50-60 piasters (US\$1.43-1.71 at official rate of exchange) a day for employees in the processing end. It also claims that this figure is 10 to 15 percent higher than local wage rates.

The shrimp so far exported to the United States have been purchased from local fishermen at the market rate. The company is also in the process of raising shrimp in ponds in the mangrove swamps along the coast. The shrimp are fed on copra waste, and it is anticipated that the ponds will yield five metric tons of large shrimp per hectare (2,471 acres).

The commercial fish catch in 1959 by Viet-Nam was estimated at 152,000 metric tons, compared with 140,000 tons in 1958, an increase of 12,000 tons or 8 percent. Current expectations are that 1960 will show an even greater percentage increase in total catch. Continuing motorization of the fleet, and construction of freezing plants in various fishing centers are expected to keep raising the catch in the next few years, with concurrent possibilities of increased exports of shrimp. In addition, the shrimp-raising ponds are expected to come into production in the near future. The varieties usually exported are the larger sizes, and in view of the premium prices paid for these, it seems unlikely that Viet-Nam will try to expand exports of the smaller sizes. (U. S. Embassy, Saigon, November 29, 1960.)



West Africa

TUNA FISHERY TRENDS:

A booming development of the tuna fishery in the eastern South Atlantic and a rapid expansion of United States tuna industry interests in West Africa were reported by the Director of the Honolulu Biological Laboratory of the U. S. Bureau of Commercial Fisheries, who attended a tuna biologists' conference at Dakar, Senegal, West Africa, the latter part of 1960.

Two large California tuna-canning companies are setting up refrigeration facilities

in Ghana and Sierra Leone to receive Atlantic tuna for shipment to the canneries which they have built in recent years in Puerto Rico. At present the fish are supplied principally by the Japanese, who have a fleet of 60-80 large tuna long-line vessels fishing in the Atlantic and landing their catches in European, African, and Caribbean ports. French, Spanish, and Italian tuna fishermen and others are also moving into the fishery on an increasing scale. United States tuna clippers and purse-seiners have made several experimental trips into West African waters with promising results.



FISH TEMPERATURES AND THEIR SIGNIFICANCE

During most of 1959 and the early part of 1960, technologists of the National Fisheries Institute have carried metal-stemmed thermometers in their pockets in order to take a large number of temperature readings of fishery products at several stages in the unloading and processing operations and in a variety of plants. Here is a fairly typical series of readings:

Fish in the hold of a trawler, well imbedded in ice, 34° to 37° F. (In all these tests the 5-inch metal-stemmed thermometer was inserted into the center of the fish.)
 The same fish, unloaded and awaiting washing, 36° to 37° F.
 Fish after washing, 42° F.
 Fillets, immediately after cutting, 44° to 46° F.
 Fillets, trimmed, packed in 1-lb. cartons and weighed, 46° to 48° F.
 The water used to wash the fish was 61° F.
 The air temperature of the filleting room was 66° F.

Results such as these were found in almost all filleting operations tested. However in a few cases the finished product temperatures reached as high as 54° F.

What is the significance of these temperature readings? Are they low enough to retard spoilage of fish for a long period? Most certainly not! Castell, a well recognized Canadian researcher, reports that fish with the same historical background when held at different temperatures gave off spoilage odors as follows:

50° F. - 1½ days	37° F. - 5 days
41° F. - 3½ days	32° F. - 8 days

These and other studies emphasize that poorly-iced fish at 37° F. spoil nearly twice as fast as well-iced fish at 32° F. And at 41° F. the useful life of fish is cut to about one-third of that at 32° F.

These findings clearly prove the importance of temperatures in relation to the quality of fish or fishery products. When a producer sells a poorly-iced or refrigerated product he can expect complaints unless the product is marketed in a very short time. To double the time allowed for sale of the product, the only requirement is to reduce the temperature by 5° F.

When taking temperatures of the fish and fillets, it was observed that in many plants where better icing was needed there was an ample supply of ice but it was not being used to chill fish. Another observation was that in too many plants tins or packages of fillets were stacked solidly on trucks or skids, without benefit of ice, too long before removal to cooler.

--By G. Clifford Byrd, N. F. I. Technology Division;
 Review of talk given to Fresh Fish Committee at
 N. F. I. 1960 Convention in Miami Beach.