



## Belgium

FISHERIES REVIEW, 1948: Production and Distribution: The Belgian sailing vessels usually go to sea for periods of one, two, or three weeks. Immediately after being caught, the fish are cleaned and packed in ice. After landing, the fish are sold at the big auction market at Ostend, and are distributed to the retail trade, mostly by rail.

Fresh and frozen fish are introduced into Belgium almost entirely through Ostend and Antwerp, with the Belgian catch coming mostly through Ostend, and imports passing through Antwerp, according to a January 28 report from the American Embassy at Brussels.

Table 1 - Belgian Fish Catch

	Metric Tons	Value
1936-38 Average ...	39,472	\$ 4,078,916
1947 .....	75,370	12,656,440
1948 (Jan.-Nov.) ..	57,663	9,774,793

Several distribution services exist through which individual families and hotels throughout the country can order fish to be sent to them at regular intervals, through the Belgian railroad delivery services. However, the minimum weight of these packages is such that only large families can use these facilities.

In the Belgian long-term program prepared in connection with Marshall Plan requirements, the Belgian 1934-38 average annual production is listed at 54,000 metric tons. The 1948-49 and the 1952-53 production are estimated at 100,000 tons each (35,000 tons of herring and 65,000 tons of deep-sea fish). There seems little doubt that the Belgian fish catch will remain substantially above prewar, thereby reducing Belgian import requirements.

Imports: As compared with 69,096 metric tons of fishery products imported in 1938, Belgium imported 81,139 tons in 1947, and 40,192 tons during the first nine months of 1948 (Table 2).

Table 2 - Belgium Imports of Selected Fishery Products - First Nine Months 1938, 1947, and 1948

	1948	1947	1938
	Metric Tons		
Herring, fresh ...	1,986	2,581	3,152
" , salted ..	6,859	5,576	10,630
Oysters .....	451	315	255
Mussels .....	12,775	12,065	10,038
Canned fish .....	7,522	16,673	6,757
Other .....	10,599	10,295	11,348
Total .....	40,192	47,505	42,180

Of the 1947 imports, 30,948 tons were of canned fish; 19,941, mussels; 12,745, fresh fish; and 9,001, salted herring.

The 1947 imports of canned fish (30,948 metric tons) were especially large and resulted in considerable stocking of canned fish in Belgium. During the last few months of 1947, Belgian importers brought in large quantities of canned

fish in order to avoid paying the Benelux duty of 20 percent which went into effect on January 1, 1948.

The Belgian long-term program prepared for the OEEC listed Belgian 1934-38 average annual imports at 74,000 metric tons, and estimated 1947-48, 1948-49, and 1952-53 import requirements each at 60,000 metric tons. These figures appear to be reasonable if Belgian fish production does not increase beyond current rates.

Exports: In 1937, Belgium exported 16,097 metric tons of fish, and in 1938, a total of 11,116 tons. During 1946, Belgian fish exports totaled 7,134 metric tons. During the first nine months of 1948, the total was only 6,098 tons, as compared with 17,826 tons during the corresponding period in 1947.

The normal export markets for Belgian fish include France, Switzerland, Italy, Germany, and England. Currently, fish exports to Germany, France, and England are restricted by the shortage of foreign exchange in those countries.

Consumption: Despite the fact that Belgium covers only a small area, the consumption of fresh and frozen fish is centered largely in the areas surrounding Ostend and Antwerp. In Brussels, also, there is a substantial consumption, particularly of mussels, but in the interior of the country, the consumption of fresh and frozen fish is relatively small.

Before the war, Belgian fish consumption averaged a little more than 24.2 pounds per capita per annum, based on a total disappearance of somewhat over 90,000 metric tons per year. In 1946, Belgian fish consumption was about 50 percent above prewar, at 36.1 pounds per capita. Total disappearance in 1946 was 136,196 metric tons (based on production of 69,694 tons, imports of 73,636 tons, and exports of 7,134 tons).

In 1947, consumption was somewhat below 1946, the total disappearance being 135,158 metric tons, based on production of 75,370 tons, imports of 81,139 tons, and exports of 21,351 tons. To some extent, the 1947 disappearance figure is artificially high, due to the stocking of canned fish toward the end of the year.

For the same reason, the real 1948 consumption is somewhat greater than the apparent disappearance. In reality, the 1947 and 1948 consumption were probably about the same.

Trade Agreements: The current trade agreement with Switzerland announced on October 3, 1948, for the period through September 1949, provides for Belgian exports of at least 400 metric tons of fish.

Under the current trade agreement with Germany, \$300,000 has been set aside for the purchase of Belgian herring. Although this is not a large amount, it represents at least a token shipment, and it is hoped that next year a greater amount may be taken by Germany.

Towards the middle of January 1949, an agreement was signed by the National Federation of Sea Fishing, the Federation of Coast Fishing and the Middenslagvisserij with respect to sales of spent herring to Germany. Under this agreement, the first 8.8 million pounds to be exported to Bizone Germany will be priced at 1.8 cents per pound, and the remaining 15.4 million pounds at 1.6 cents per pound, these prices to apply to exports made from the Ostend auction market. The small quantities that can be landed at the Montgomery dock at Ostend are to be exported to the Bizone at prices ranging from 1.5 to 1.7 cents per pound.

Frozen Fish and Byproducts: A modern ice, refrigeration, and fish-processing plant has been constructed in Ostend for filleting, packaging, and freezing fish.

The filleted, packaged sole and plaice are for sale to the United States, and the lower-priced fish for sale in Belgium and the Belgian Congo. It is planned to distribute storage cabinets to the important retail outlets to insure adequate handling of the frozen fish. Belgian ships with refrigeration facilities are available to transport fish to the United States and the Belgian Congo.

The iceplant has a capacity of 200 metric tons per day and the freezer is able to handle 100 tons of fish per day. The freezer equipment is of American design, of blower-type construction, and utilizes the Birdseye process. The construction has been supervised by American engineers. The plant has storage facilities for frozen fish and may be utilized for storage of frozen American salmon destined for European markets.

A fish meal plant with capacity to process 50 metric tons of offal and 30 tons of fish waste daily has also been constructed.

Canned Fish: The Belgian fish canning industry is small, consisting merely of three canneries located in or near Ostend. Their production is insignificant. Belgium imports large quantities of canned fish.

Duties on Imports: In general, the regular Benelux duties of 20 percent on all canned fish, and 25 percent on lobsters, crawfish, and shrimp apply to all Belgo-Luxembourg imports. However, by Decree appearing in the Moniteur Belge of December 25, 1948, the suspension of the duty on canned sardines and canned salmon was continued through December 31, 1949. The tariff numbers involved are sardines in oil (tariff No. 120a1) and salmon (tariff No. 120c3A).

A question has arisen with respect to the proper tariff classification for canned California pilchards. To date, the Belgian customs authorities have classed them under tariff No. 120a2 and have collected the full 20 percent tariff on them, whereas, if they were classed as 120a1, they would be exempt from duty. The Belgian customs authorities classify all sardines packed in tomato sauce as pilchards, and all sardines packed in oil as sardines. Only sardines packed in oil are thus duty-free.

Fund for Maritime Equipment and Construction: The Moniteur Belge of September 11, 1948, published a Decree of August 23, 1948, which tends to insure the development of the merchant marine, of maritime fishing, and of maritime construction and which to this end, institutes a Fund for Maritime Equipment and Construction.

Prices:

Retail Price Index (1936-38 = 100)		
Commodity	1948	
	November	December
Salmon ...	507.8	507.6
Sardines .	237.3	236.2

Retail Prices Charged for Canned Portuguese Sardines		
$\frac{1}{4}$ Club, 30 mm.	Jan. 5, 1949	Jan. 20, 1949
	Range in Price--¢ Per Can	
Packed in peanut oil ....	16-18	16-18
Packed in olive oil ....	16 $\frac{1}{2}$ and up	16 $\frac{1}{2}$ and up



## Bizone Germany

FISHERIES PRODUCTION, 1948: During 1948, 597,658 metric tons of fish valued at \$58,620,000<sup>1/</sup> were received at all ports in the Bizone. Of that amount, 17,943 tons were transhipped to Czechoslovakia, according to a January 21 report from the American Consulate General at Hamburg. In addition, 43,787 tons of fish arrived by other than sea transport. Thus, the total receipts of fish for apparent consumption in the Bizone during 1948 amounted to 623,502 tons (approximately double the receipts for apparent consumption in 1947), or 32.8 pounds per capita.<sup>2/</sup> In 1938, the apparent per capita consumption of fish in Germany amounted to only 27.5 pounds.

Table 1 - Bizone Germany Fish Catch and Imports - 1948

	Hamburg, Cuxhaven and Bremerhaven				Smaller Ports				Bizone Germany Total	
	German Landings		Imports		Total Receipts at Three Ports		Landings		Landings and Imports	
	Metric Tons	Value	Metric Tons	Value	Metric Tons	Value	Metric Tons	Value	Metric Tons	Value
1948	263,881	\$25,634,400	261,804	\$23,192,700	525,685	\$48,827,100	71,973	\$9,793,600	597,658	\$58,620,700
1947	212,952	17,576,100	127,447	13,338,000	340,799	30,914,100	48,867	6,843,900	389,666	37,758,000

Of the total 1948 receipts of 525,685 tons of fish (54.2 percent above the 340,799 tons received in 1947) at the three major ports of Hamburg, Cuxhaven, and Bremerhaven, 263,881 tons, or 50.2 percent were landed by German vessels. The German trawler fleet rose to 181 vessels in 1948 (143 in 1947) as a result of repairs and reconversion of older craft, as well as new buildings. The trawler fleet expansion, together with the opening of the Norwegian coastal waters, accounted for most of the increase in German landings. Imports of fish at the three major ports increased to 261,804 tons in 1948, or 105.4 percent above the 1947 imports of 127,487 tons.

Table 2 - Fish Landings at Hamburg, Cuxhaven and Bremerhaven, by Type of Vessel and Grounds - 1948

	1948			1947		
	No. of Trips	Quantity	Value	No. of Trips	Quantity	Value
		Metric Tons	\$		Metric Tons	\$
By trawlers:						
North Sea .....	1,948	150,391	13,247,700	1,740	140,064	10,881,000
Iceland .....	429	39,780	4,872,900	330	34,630	3,183,300
Norwegian Coast .....	299	39,101	3,827,400	76	8,264	648,000
Bear Island .....	36	4,658	383,100	133	15,982	1,269,000
Barents Sea .....	109	15,389	1,241,700	37	5,413	425,700
Total trawler landings ...	2,821	249,319	23,532,800	2,316	204,353	15,407,000
Seagoing Cutters .....	1,310	11,583	1,407,600	1,959	6,587	1,011,600
Coastal Fisheries .....	12,082	2,979	594,000	5,425	2,012	157,500
Grand Total .....	16,213	263,881	25,634,400	9,700	212,952	17,576,100

Landings at the smaller ports of the Bizone totaled 71,973 tons in 1948, or 47.3 percent above the 1947 total of 48,867 tons. All of the landings at the

Table 3 - Hamburg, Cuxhaven & Bremerhaven Herring Catch & Imports - 1948

	German Landings		Imports		Total	
	Metric Tons	Value	Metric Tons	Value	Metric Tons	Value
1948 .....	118,902	\$9,580	183,086	\$21,087	301,988	\$30,667
1947 .....	112,520	7,882	119,037	11,888	231,557	19,770

smaller ports were caught by German fishers. German fishers thus landed 335,854 tons of fish at all ports of the Bizone in 1948, or 28.3 percent above the 1947 total of 261,817 tons.

<sup>1/</sup>Official rate of exchange used - One Deutsche Mark equals 30 cents U. S.

<sup>2/</sup>Calculated on a Bizonal population estimate of 41.8 million.



## Canada

EXPORTS AT RECORD LEVEL IN 1948: In 1948, Canadian exports of fishery products, including oil, meal, etc., attained a new peak value of \$89.8 million, surpassing by a small margin the former peak value of \$89.0 million in 1946, and rising by about 7 percent above the 1947 total of \$84.0 million, according to the January 1949 Monthly Review of Canadian Fisheries Statistics issued by the Dominion Bureau of Statistics. However, since total landed and marketed values increased by over 25 percent above 1947 levels, exports did not increase as much as did the domestic market.

Principal Canadian Fishery Products Exports to United States - 1948<sup>1/</sup>  
(In thousands of pounds)

	QUANTITY			VALUE		
	1948	1947	1935-39 Average	1948	1947	1935-39 Average
				\$	\$	\$
<b>Cod and Other Groundfish:</b>						
Fresh and frozen, dressed .....	7,395	4,146	4,434	726,086	419,574	290,999
" " " , filleted .....	27,252	19,087	-	5,484,029	3,288,204	-
Smoked .....	3,000	2,665	1,726	675,501	576,869	197,879
Green salted or pickled .....	8,560	4,766	12,474	809,935	395,257	333,069
Salted, dried .....	5,813	8,200	6,336	1,009,607	1,377,728	349,547
" , boneless .....	6,260	4,411	2,192	1,577,736	1,058,306	191,072
<b>Halibut, fresh and frozen .....</b>	<b>14,085</b>	<b>13,959</b>	<b>4,618</b>	<b>3,116,302</b>	<b>3,212,438</b>	<b>249,949</b>
<b>Herring:</b>						
Fresh and frozen .....	69,443	74,853	25,601	1,656,487	1,188,457	225,723
Smoked .....	2,029	1,851	896	309,302	255,740	54,771
Pickled .....	8,759	5,243	977	648,202	390,561	28,300
Canned .....	1,990	1,107	3	376,735	204,159	227
<b>Sardines, canned .....</b>	<b>1,112</b>	<b>222</b>	<b>-</b>	<b>253,628</b>	<b>46,316</b>	<b>-</b>
<b>Mackerel, pickled .....</b>	<b>2,267</b>	<b>2,001</b>	<b>2,265</b>	<b>361,177</b>	<b>299,273</b>	<b>121,060</b>
<b>Swordfish .....</b>	<b>2,382</b>	<b>1,726</b>	<b>1,781</b>	<b>1,043,489</b>	<b>732,740</b>	<b>219,583</b>
<b>Salmon, fresh and frozen .....</b>	<b>21,723</b>	<b>21,371</b>	<b>6,822</b>	<b>6,309,350</b>	<b>5,340,868</b>	<b>580,748</b>
<b>Other estuarial fish, fresh and frozen .....</b>	<b>7,658</b>	<b>5,852</b>	<b>7,930</b>	<b>2,026,892</b>	<b>1,455,723</b>	<b>819,691</b>
<b>Lobsters, fresh .....</b>	<b>19,401</b>	<b>15,754</b>	<b>10,387</b>	<b>9,181,986</b>	<b>7,627,133</b>	<b>2,048,523</b>
<b>Whitefish, fresh and frozen .....</b>	<b>13,392</b>	<b>11,642</b>	<b>12,503</b>	<b>3,983,077</b>	<b>2,903,988</b>	<b>1,457,039</b>
<b>Ciscoes, fresh and frozen .....</b>	<b>6,042</b>	<b>7,275</b>	<b>3,213</b>	<b>917,418</b>	<b>1,385,016</b>	<b>287,273</b>
<b>Trout, fresh and frozen .....</b>	<b>3,678</b>	<b>3,983</b>	<b>-</b>	<b>1,145,535</b>	<b>1,088,305</b>	<b>-</b>
<b>Other lake fish:</b>						
Fresh and frozen .....	27,778	27,571	34,032	5,401,436	5,447,659	2,452,568
" " " , filleted .....	4,836	4,475	-	1,797,509	1,607,399	-
<b>Total of Principal Exports to U.S.</b>	<b>264,855</b>	<b>242,160</b>	<b>138,190</b>	<b>48,811,419</b>	<b>40,301,713</b>	<b>9,908,021</b>
<b>Total Canadian Exports .....</b>	<b>486,865</b>	<b>477,000</b>	<b>316,794</b>	<b>85,027,549</b>	<b>82,359,203</b>	<b>25,641,165</b>
Percentage of total principal fishery products exports to U.S. to total Canadian fishery products exports	54%	51%	44%	57%	49%	39%

<sup>1/</sup>Some additional exports to U.S. may be included in a miscellaneous category.

Exports of fresh and frozen fishery products increased from \$38.0 million in 1947 to \$45.3 million, mainly due to the increasing demands of the United States market. Sales of cured fish increased from \$12.3 million in 1947 to \$14.9 million in 1948, based mainly on the strength of Latin American markets, although sales to the other main market for these types (the British West Indies) were down slightly. Exports of canned fish, at \$21.0 million, were down considerably from the 1947 total of \$31.5 million, despite increases in sales to the United States, South Africa, some European countries and Latin America--due mainly to a large decline in sales to the Sterling Area, and to a virtual cessation of relief ship-

ments to other countries. The lifting of export controls on some of the other fishery products, such as oil, meal, etc., permitted a rapid expansion of sales of these types from \$2.2 million in 1947 to \$8.7 million in 1948.

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FRESH HERRING GRANTED DUTY-FREE ENTRY: By Order in Canadian Council P.C. 641, passed on February 10, 1949, fresh herring, to be processed in Canadian canneries, is granted duty-free entry into Canada effective February 1, 1949, according to a February 17 report from the American Embassy at Ottawa.

Temporary free entry was granted fresh herring during the period July 1-December 31, 1945, because Canadian packers were experiencing unusual difficulty in keeping up their production and required herring caught in American waters to supplement the Canadian catch. Temporary free entry was again accorded during the period June 1-December 31, 1948.

Fresh herring has been ordinarily dutiable, upon importation into Canada from the United States, at 1/2 cent per pound (Tariff Item 115a).

Order in Council P.C. 641 follows:

P.C. 641

Privy Council

CANADA

AT THE GOVERNMENT HOUSE AT OTTAWA

THURSDAY, the 10th day of FEBRUARY, 1949

PRESENT:

HIS EXCELLENCY

THE GOVERNOR GENERAL IN COUNCIL:

HIS EXCELLENCY the Governor General in Council, on the recommendation of the Minister of Finance and under the authority of paragraph (k) of section 284 of the Customs Act, Revised Statutes of Canada, 1927, chapter 42, is pleased to order and doth hereby order that fresh herring be accorded the tariff treatment hereunder indicated, effective February 1, 1949:

Herring, fresh, to be processed in Canadian canneries .....

<u>British Preferential Tariff</u>	<u>Most- Favoured-Nation Tariff</u>	<u>General Tariff</u>
Free	Free	Free

(To be designated as Tariff Item 115a.)

A. M. Hill (Sgd.)  
Asst. Clerk of the Privy Council.

## Ceylon

FISHING INDUSTRY: Introduction: As Ceylon fisheries do not meet the relatively high consumption of fish by native Sinhalese on the Island, considerable quantities of fish, fresh and dried, are imported chiefly from India and the Maldiv Islands. During January to June, 1948, a total of 34,970,320 pounds of fishery products, valued at \$3,855,223 were imported into the Island principally from these countries.

Fishing is carried on in Ceylon in a primitive fashion from outrigger canoes and catamarans, according to a November 24 report from the American Embassy at Colombo. Line fishing is practiced far out at sea; nets are used in inshore waters and estuaries. Fishing is done during the Southwest Monsoon (April-October) in the Northeast coast of Ceylon; during the Northeast Monsoon (October-April) in the Northwest coast.

Considerable quantities of fish are caught, packed in ice, and shipped to Colombo and other principal towns, tapped by railroad lines. Elsewhere, almost all fish is consumed locally or pickled and dried before shipping. There has been little expansion or contraction in this industry during past years.

The two important fishing banks are Kankasanturai (Pedro Bank) near Jaffna in the northern end of the Island which extends about 650 miles in length; the other bank is at Cape Comorin (Wadge Bank) which has an area of about 2,500 square miles and is located off the southern tip of India.

Although Ceylon has an abundant supply of fish, an increasing supply of fishery products are being imported into Ceylon, chiefly from India, the United Kingdom, and Canada.

Types of Fisheries: The industry is divided into three broad categories; i.e., sea fishing, chank fishing, and inland water fishing.

SHORE SEINE: The most important type of marine fishery is shore seine fishing. The largest proportion of fish is caught by this method of operation which requires 20 to 60 men to operate and is seasonal, lasting only six months at any one place.

It is the custom in this type of fishing that net owners collect labor, by advancing each fisherman between \$15-\$121, about two months prior to the fishing season. Labor will generally not engage in shore seine fishing without this advance. Wages of fishermen range between \$12-\$24 per month in addition to food, which includes tobacco and betel. A daily rice ration of one measure or two pounds is given the fisherman, who supplements this with large amounts of chillies and sugar.

HOOK AND LINE: Another type of marine fishing is carried on from 27- to 45-foot outriggers. The most common is the 31-foot size. Three to ten men generally man one boat on a share basis, the number of fishermen depending on the size of the outrigger. Fishing is done from outriggers with a line and hook, the lines sometimes being as long as 400 feet.

DRIFT AND CAST NETS: The catamaran is also used in marine fishing. This type of sailing vessel consists of three to four logs about 25 feet long lashed together and used with a sail. Drift nets and cast nets are commonly used from these rafts.

**TRAWLING:** Commercial trawling is carried on off Wadge Bank chiefly by the Ceylon Government, who equip and maintain a trawler. The catch is sold on the open market at the lowest prevailing retail price.

**EDIBLE OYSTERS:** They are found all along the coast and in the river estuaries, the principal oyster beds being around Bentota on the southwest part of Ceylon. As consumption of oysters is limited to a small number of Europeans, there is no effort made by native Sinhalese to advance oyster beds.

**BECHE-DE-MER:** Also known as sea slug or sea cucumber, it is found principally off Jaffna, located at the extreme northern tip of the Island. Formerly, it was a considerable fishery.

**CHANK FISHERIES:** Chank fishing is carried on off Jaffna Island in the north of Ceylon and in parts of the Gulf of Mannar. About  $1\frac{3}{4}$  millions of chanks are obtained annually from Ceylon beds, which are sold at an average price in Ceylon of \$18 per 1,000 chanks. However, the greater part of the chanks caught off Ceylon are exported to India, where the shells are used in the manufacture of bangles and fetch a better price.

**POND FISHERIES:** This type of fisheries is carried on chiefly in the North-western Province of Ceylon, around Anuradhapura, from artificial lakes created by irrigation ditches, by seasonal rains, and by drainage due to the overflow of the Mahaweli Ganga. These ponds are stocked with carp, catfish, murrays, and gourmay. Brought from Jaffna, gourmay are considered the best eating fish by natives and Europeans.

**WINDOW-PANE OYSTERS:** This oyster is found in Lake Tanblegam in the Trincomalee District and was formerly exported mainly to Japan where it was used in the manufacture of cultured pearls. There has been no fishing or cultivation of this oyster since 1937, one of the main reasons being that the beds in Tanblegam Lake have not been kept up or stocked since this date.

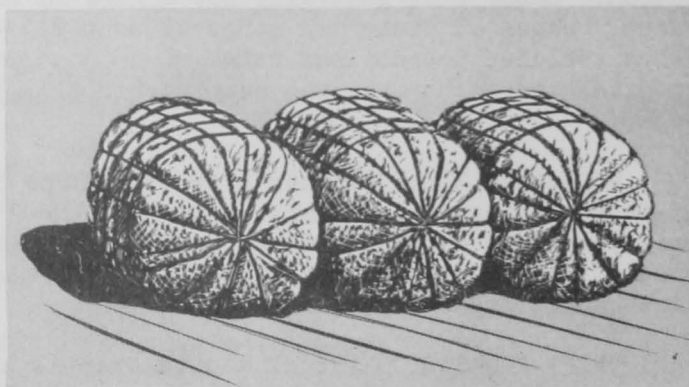
Year	Total Population	No. in Fishing Industry <sup>1/</sup>	Percentage of Total Population Engaged in Fishing Industry
1946	6,657,339	112,600	1.7
1921	4,498,605	79,687	1.7

<sup>1/</sup>Includes only those persons whose principal employment is in the fishing industry.

**PERSONS ENGAGED:** Persons engaged in and dependent upon the fishing industry number about 112,600, according to the last census taken in 1946.

Imports and Exports of Fishery Products: In 1947, Ceylon's total imports of fishery products amounted to 70,618,900 pounds valued at \$7,678,197 as against total exports and re-exports of fishery products (exclusive of chank and oyster shells) amounting to 196,700 pounds valued at \$30,812.

During January to June, 1948, a total of 34,970,300 pounds of fishery products, valued at \$3,866,531, were imported chief-



SALTED FISH PACKED IN SCREW PINE LEAF MATS FOR EXPORT-TO CEYLON.



ly from India and the Maldive Islands. Exports and re-exports (exclusive of chank and oyster shells) amounted to only 583,600 pounds, valued at \$101,627 shipped to ships' stores, Straits Settlements, and Hong Kong.

Table 2 - Ceylon Imports of Fishery Products

Product	Jan.-June 1948		1947	
	Lbs.	Value	Lbs.	Value
Fish, dried or salted <sup>1/</sup> .....	29,225,900	\$3,059,785	56,293,500	\$5,660,418
" , frozen <sup>2/</sup> .....	100	45	27,800	9,800
" , Maldive <sup>3/</sup> .....	4,078,500	639,239	7,160,500	1,149,565
" , canned <sup>4/</sup> .....	408,600	92,122	2,935,100	599,040
Other preserved fish <sup>5/</sup> .....	1,257,200	75,340	4,202,000	259,374
Total .....	34,970,300	3,866,531	70,618,900	7,678,197

<sup>1/</sup>Mostly from Aden, India and other Asiatic countries.

<sup>2/</sup>Mostly from Canada, some from the United Kingdom.

<sup>3/</sup>From Maldive Island.

<sup>4/</sup>Imported from the United States: January-June 1948, 176,600 lbs. valued at \$39,581 compared with 378,700 lbs. valued at \$90,807 for the year 1947; from Canada: January-June 1948, 157,500 lbs. valued at \$36,904 compared with 2,376,400 lbs. valued at \$456,875 for the year 1947.

<sup>5/</sup>Mostly from India.

This illustrates Ceylon's lack of self-sufficiency in fishery products which, next to rice, are the principal foodstuffs of the Ceylonese.

Prices: Local retail market prices for fresh fish vary from 23 to 60 cents per pound, and dried fish sell from 5 to 45 cents per pound on the local market, depending upon quality and availability.

Government Fisheries Policies: The Minister of Industries, Industrial Research and Fisheries, recently announced to the local press that contemplated objects of his Department with regard to the fishing industry in Ceylon were:

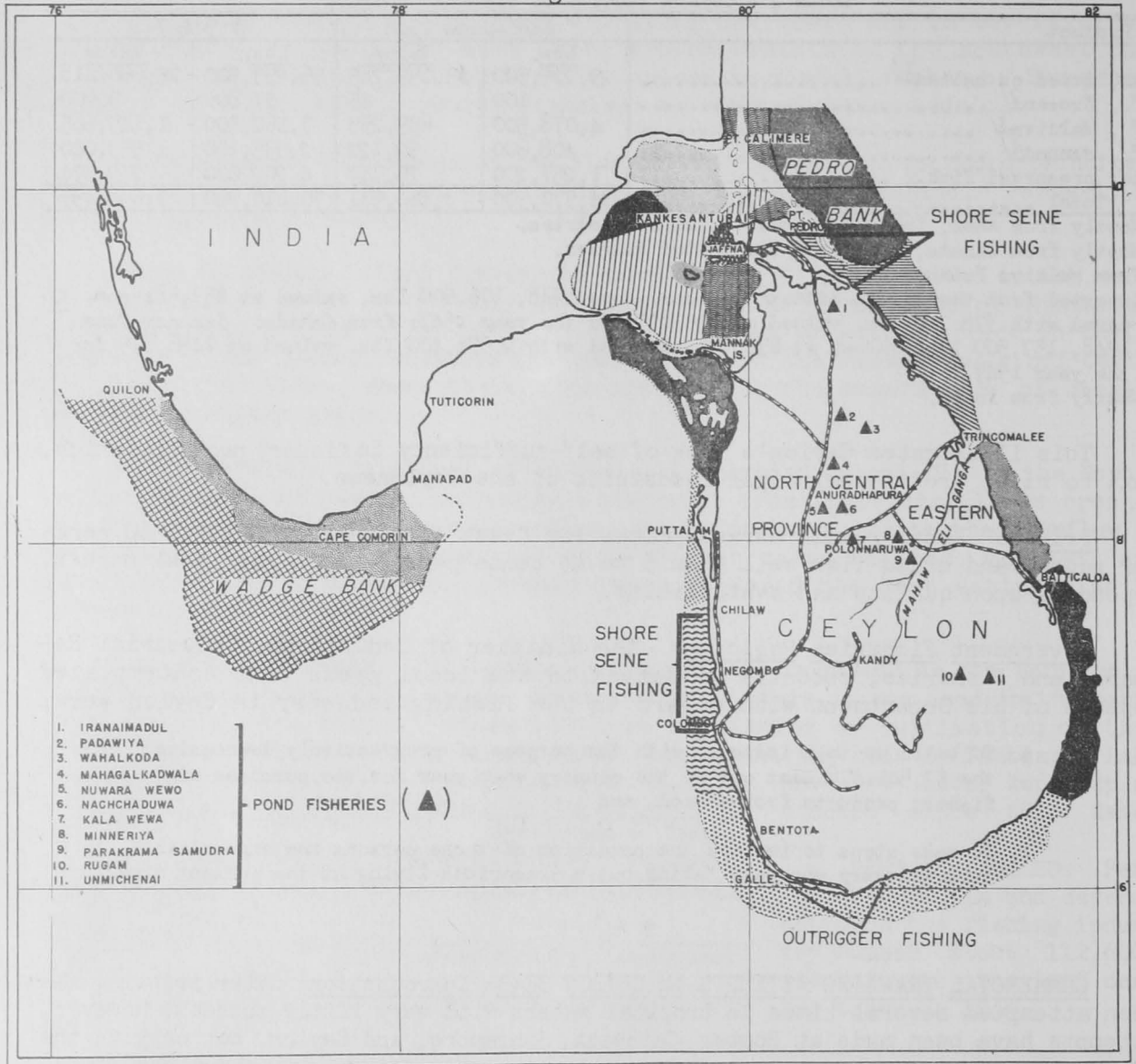
- a. To build up this industry with the purpose of progressively decreasing the \$7,541,478 sent out of the country each year for the purchase of fishery products from abroad, and
- b. To take steps to improve the condition of those persons now engaged in this industry who were "eking out a precarious living at the present time."

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COMMERCIAL TRAWLING ATTEMPTS IN CEYLON SEAS: Introduction: Otter-trawling has been attempted several times in tropical waters with very little success. However, attempts have been made at Bombay, Calcutta, Singapore, and Ceylon, but only in the latter area has there been any success during the past decade, according to a mimeographed paper, "Commercial Trawling in Ceylon Seas" by C. Amirthalingam, Director of Fisheries, and E. R. A. de Zylva, Assistant Director of Fisheries, Ceylon.

Trawling was first tried around Ceylon in 1902. In 1913-14 and between 1919-1928, the Government carried on experimental trawling. Based on these trials, a private fishing company was organized in 1928 and operated until 1935 when it went into liquidation as it was unable to market its catch successfully. In 1945, the Government again tried commercial trawl-fishing in order to increase Ceylon's fish supply during the war, and its favorable results encouraged a private company in 1947 to obtain two vessels with refrigerated holds and engage in otter-trawling.

Trawling Grounds: Trawling is possible on the continental shelf, which is of varying depth up to 100 fathoms. Trawling beyond the continental shelf has not been attempted as the seabed falls very steeply from the edge of the shelf.



LOCATION OF FISHING GROUNDS AND POND FISHERIES. THE DIFFERENT STIPPLING PATTERNS INDICATE THE VARIOUS TYPES OF BOTTOM DEPOSITS OF THE LITTORAL WATERS AROUND THE ISLAND OF CEYLON AND THE SOUTHERN TIP OF INDIA.

The coastal strip of 10 to 20 miles on the west, south, and east of the Island has not given good catches. The Wadge Bank has been the most often fished. It is over 4,000 square miles in extent, and lies outside Indian territorial waters off Cape Comorin from Manapad to Quilon. The Pedro Bank lies off the northeast coast from east of the Jaffna Peninsula northwards to Point Calimere on the Indian Coast, and is about 1,500 square miles in area. Both of these banks are beyond the reach of the type of craft now used by local fishermen. The vessels worked

day and night as far as possible while out fishing, following the normal commercial practice, with occasional interruptions in this routine due to damaged nets or very heavy catches.

Vessel Operations and Handling of Catches: Fish was gutted and washed clean with sea water before storage in the refrigerated hold. In the case of rays and skates, the general practice was to take only the wings.

Catches by the two vessels operated by the new company formed in 1947 consist of 63.6 percent large fish, 16.3 percent small fish, and 20 percent shark, skate, ray, and catfish.

The catch per vessel during 1945 to 1947 on the Wadge Bank averaged between 4,600 to 6,400 pounds of fish for each day absent from port. This compared favorably with the catch on the fishing banks off the northern and western coast of Scotland and Ireland, but was not as great as in the banks around Bear Island or Iceland.

Disposal of Catches: Some of the earlier trawling ventures followed the practice of disposing of their catch by giving the fish on arrival to an agent who put it into cold storage and later sold it to the trade. However, the fish did not always reach the consumer in as fresh a condition as was possible. The latest commercial venture also attempted the same type of merchandising, but as it was soon realized that the consumer did not like frozen fish, it was decided to dispose of the fish through the Department of Fisheries by the speediest possible method even though it generally meant lower prices. At present, the catches are sold at fixed wholesale prices to a number of regular dealers for immediate retail sale at fixed prices so that the entire catch is disposed of within two or three days.

Future Trawling Prospects: Every trawling attempt in Ceylon waters has served to prove that excellent fishing is available within easy reach of the market, according to the authors of the report. It has proved even more conclusively that the real problem lies in the disposal of trawler fish. The failure of earlier trawling ventures was due to the difficulty in establishing a regular outlet for the abundant catches which the trawlers were able to bring in regularly. The experience to date shows that future trawlers built for operation in tropical waters should be oil-fired steam-driven with diesel auxiliary engines, instead of the coal-fired steam-driven engines used at present. In addition, it is pointed out that with the development of a trawling industry there should be ample scope for the utilization of fish offal for production of fish guano, which it is believed will find a ready market in the Island's planting districts. Plans are already under consideration to establish such a plant. In the absence of an organized fish trade in the Island, it seems that the maintenance of a complete marketing organization under the control of the producer is desirable.

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DANISH FISHERIES EXPERTS TO MODERNIZE FISHERIES: A Danish fisheries biologist, who left for Ceylon on February 12, has accepted an invitation from the local Government of the Island of Ceylon to work for some months on the modernization of the Ceylon fishing industry, according to a January 31 report from the American Embassy at Copenhagen, Denmark. He expects to return to Denmark in May. He will be assisted in a number of practical matters by an experienced Danish fisheries captain who will accompany him on his trip.

Besides working in the above-mentioned capacity for the Government of Ceylon, the biologist will investigate (for the Danish Government) the possibilities of expanding trade between Denmark and Ceylon. In this respect, he will work semi-officially and with the approval of the Royal Danish Ministry of Fisheries. According to reports, one of Denmark's largest manufacturers of equipment for canneries and similar industrial establishments already has sent one of its engineers to investigate the possibilities for the establishment of fish meal factories and fish canneries in Ceylon.



## Denmark

GOVERNMENT TO STUDY JURISDICTION OVER THE CONTINENTAL SHELF: The Royal Danish Ministry of Foreign Affairs on December 16, 1948, established a committee for the investigation of "the problems of political, international-legal, economic, and scientific nature in connection with the jurisdiction over the 'Continental Shelf'," according to a January 21, 1949, report from the American Embassy at Copenhagen.

The Committee will be headed by the said Ministry's advisor on problems of international law, and will include representatives of the Prime Minister's Office; the Ministry of Naval Defense; the Ministry for Public Works; the Ministry for Commerce, Industry, and Navigation; the Ministry for Fisheries; the Ministry for Education; and the Greenland Administration.

In an interview granted to Nationaltidende, the advisor to the Minister of Foreign Affairs gave the following popular definition of the continental shelf which was published on December 17, 1948: "the sloping submarine area between the territorial border and the deep sea." He further stated that the establishment of the committee resulted from the decision taken by the United States in connection with American submarine oil explorations in the Mexican Gulf, and by Iceland with regard to fishery rights.

MINISTRY OF FISHERIES EXPERIMENTAL VESSEL LAUNCHED: An experimental fishery vessel of 120 gross-registered tons, constructed for the account of the Royal Danish Ministry of Fisheries, was launched in the Frederikssund shipyard on January 19, 1949, according to a January 31 report from the American Embassy at Copenhagen. The vessel is characterized as "the world's most modern fishery vessel." Intended for experimental use in the North Sea and in other more distant fishery areas, such as the Greenland waters, it is equipped with a laboratory and instruments for marine exploration. Accommodations for a master, a crew of nine, and two scientists are provided.

Important Measurements of the New Vessel	
Length .....	95 ft.
Breadth .....	23 "
Depth .....	11 "

The vessel is powered by a 400 hp. diesel engine and has a speed of 11 knots. The main engine supplies power to the net windlass, whereas all other parts of the deck machinery receive their power supply from two auxiliary motors of 60 hp. each, which also supply power for the lighting installations. The electrical deck machinery is composed of an anchor windlass, a net windlass, and a windlass for the hydrographic equipment. The windlasses are of a new and special Danish construction with special electric clutches of the "booster" type. The vessel has installations for quick freezing of fish at  $-30^{\circ}$  C. ( $-22^{\circ}$  F.) together with regular refrigerating equipment and cargo space for frozen fish. The refrigerated holds are insulated by a

new material which is moisture-resistant and the walls are covered with aluminum plates which are not affected by salt water.

The vessel's nautical equipment includes two sounding gears, two radio direction finders, a large telegraph transmitter, a telephone transmitter, and three radio receivers. In addition, it has a Decca navigator and a command loudspeaker with a range of three nautical miles. Space has been allocated for the installation of radar equipment.

The new ship is expected to be delivered in June 1949.

It is contemplated that a sister vessel, also under construction for the Icelandic Government, will be launched within three months.



## Honduras

STATUS OF FISHERIES: The Honduran fishing industry remained almost latent, but a new company to exploit the fisheries in the waters outside the Gulf of Fonseca was being organized, according to a February 7 report from the American Embassy at Tegucigalpa. Others were considering the feasibility of shipping fish to the United States from the Honduran North Coast by air. The contemplated fish cannery remained an indefinite scheme. During the year ending June 30, 1948, there were 24,592 pounds of dried and salted fish exported to El Salvador.



## Iceland

FISHERIES TRENDS, 1948: Iceland derives her livelihood from the sea almost entirely. Fish and fish products constitute about 95 percent of Iceland's total exports. Likewise locally, fish is the mainstay of the Icelandic diet. The Icelanders are entirely dependent upon their fish exports to meet their needs for food and other essentials from abroad, according to a 1948 annual report from the American Legation at Reykjavik.

Since Iceland has not received any direct grant, there are no ECA counterpart funds available for the expansion and improvement of agriculture and the fishing industries. There are, likewise, no technical assistance funds available.

Qualitatively, Iceland has been expanding her fishing fleet considerably during the past few years. As a result, the output of fish and fish products has increased from 298,000 metric tons in 1938 to 478,000 tons in 1947. Unfortunately, the Icelanders have encountered difficulties in marketing their fish and fish products abroad because of the high local production costs. The Government subsidizes the exports of particular types, such as the frozen fillets, salted fish, etc. The "new reconstruction" trawlers have been able to market their iced fish at a profit.

NEW ANTI-INFLATION BILL: The Anti-Inflation Act, passed by the present session of the Althing, went into effect January 1, 1949, according to a February 4 report from the American Legation at Reykjavik. The Government again, as in December 1947, is undertaking to compensate the fishermen and motorboat fleet own-

ers for financial losses incurred because of the poor summer (1948) herring fisheries. The basic purpose of the Bill is to provide financial aid to the motorboat fleet, which fishes for herring and supplies the refrigeration plants with whitefish. (See Commercial Fisheries Review, January 1949, page 33.) The Act seeks to maintain those sections of the fishing industry which, because of high production costs and poor catches, could not otherwise continue operations. Its secondary incidental aim is to ease the inflationary pressures by means of further taxation.

The following is a summarization of the leading features of the Act relating to fisheries:

In regards to the Government guarantee of export prices, etc., the purpose of the Bill is to secure for the motorboat fishing industry in 1949 a price of 65 aurar per kilo of fresh fish ( $4\frac{1}{2}$  cents per pound), based on cod and haddock, gutted with head. The Treasury guarantees refrigeration plants the difference between the sale price of haddock fillets and Kr. 1.33 per pound (approximately 20 cents per pound) f.o.b., and proportional prices of other species of fish; and guarantees salt fish exporters the difference between the selling price and Kr. 2.25 per kilo (approximately  $15\frac{1}{2}$  cents per pound) f.o.b., based on fully cured large cod first class, and the prices of other classes and species of fish shall be proportional. In addition, a proportional price shall be guaranteed for exported dried fish. These guarantees apply solely to fish sold to countries determined by the Government with a view to marketing possibilities at each time.

In order to guarantee the stated price for fresh fish and the sale of the catch, the Bill authorizes the Government to guarantee the price of exported fish which is processed in a manner other than fillets, salted, and dried. The Government is authorized to issue instructions concerning the processing of fish in accordance with marketing possibilities.

The Act also provides for the partial reimbursement by the Government for the storage cost of refrigerated fish and spoilage of long-stored salt fish.

The Bill provides for the use of up to 5 million kronur (approximately \$770,000) to lower the production costs of fish products.

Various minor regulations enable the Government to fix the prices of fresh fish, bait, and charges for the repairs of vessels, machinery, fishing gear and other fisheries equipment. Also, that during the period of guarantee established by the law, interest on operation loans of the fishing industry and the enterprises which process fish products for export must not be higher than 4 percent, and the loans must not exceed 85 percent of the guaranteed price.

Concerning aid to fish producers who were engaged in herring fisheries during the period 1945-48, the Government, in addition to the price guarantees, is authorized to determine that fish producers and fish production enterprises which were engaged in herring fisheries during the period 1945-48 be granted in part or in full: cancellation of redeemed marine mortgages; cancellation of loans; and cancellation of loans which they were granted from the Treasury because of failure of herring fisheries in the summers of 1945 and 1947. The law provides various conditions for cancellation of claims, loans, and debts.

The Bill establishes a special State Inflation Fund which shall be used to meet the payments of the guarantees on the price of exported products and payments

to bring down the price of commodities and local production costs. This fund is to be obtained from already existing and new sources of revenue.

It is estimated that 70 million kronur (approximately \$10,780,000) are necessary to finance this program in 1949 with its dual objective of paying for export fish prices and holding down the price level.

GOVERNMENT-FISH PRODUCERS AGREEMENT: The new Anti-Inflation Act, which did not meet with the complete approval of the Federation of Icelandic Fish Producers, was supplemented by a temporary agreement between the Federation and the Government in order to make it possible for the motorboat fleet to start operations immediately.

The Agreement emphasized that the Sales Union of Icelandic Fish Producers will take all possible measures to create a sound and practical operational basis for the motorboat fleet, and that they will receive the support of the Government and Althing. In addition, the Agreement provides for the Government to enact legislation on catch and share insurance; the use of the 5 million kronur (approximately \$770,000) appropriated for the purpose of decreasing the production costs of the industry; authorization to fish producers to dispose of the foreign exchange received for exported roe and, particularly, specified export products which have not been produced to any great extent in the past few years; and that the operations status of the quick-freezing plants be improved by paying charges for storage of quick-frozen fish, compensation on the shrinkage of salted fish, and storage charges for salted fish. The actual execution of some of the above will be decided later in special agreements with the parties concerned.

TRADE AGREEMENT WITH THE NETHERLANDS: On December 17, 1948, a Trade Agreement was concluded between Iceland and the Netherlands in The Hague which calls for the exchange of goods to the equivalent of \$5,600,000 during the year ending November 30, 1949. Iceland's exports to the Netherlands will consist of fish meal, cod liver oil, quick-frozen and salted fillets, calfskins, and fish and fur skins. In return, the Dutch will export to Iceland a variety of products other than fish. As a result of this Agreement, the trade between the two countries will be double that of 1948.

TRADE AGREEMENT WITH UNITED KINGDOM: In London, in December 1948, another Agreement was signed between the Icelandic and British Governments concerning the sale of iced fish to Bizonia. The Agreement calls for the delivery of 67,000 metric tons of iced fish to German ports between February 1 and October 31, 1948. The Agreement will keep the major part of the ocean-going trawlers in operation, thereby providing revenue and employment. In 1948, the Icelandic trawler fleet comprising 49 vessels (at present 45) made 504 sales trips, 262 to Great Britain and 242 to German ports. A total of 118,516 tons of iced fish were delivered, valued at \$19,370,000.

FISH PRODUCTION IN 1948: Despite the poor summer herring season, the total fish catch in 1948 amounted to 409,208 metric tons of fish; or 22,000 tons less than in 1947. The winter herring season, which commenced in November and terminated in January, produced only 3,000 tons of herring. As compared with the 1947-48 winter herring season, herring catches for 1948-49 were considered a total failure. In order to carry on its white fish fishing, which started in January and will continue until the end of May, Iceland will import from Norway about 1,000 tons of frozen herring to be used as bait.

## Iran

GOVERNMENT-OWNED SARDINE AND TUNA CANNERY: Production: The Government-owned fish cannery at Bandar Abbas on the Persian Gulf began operation in 1941, according to a January 24 report from the American Embassy at Tehran. It is equipped with Danish machinery, and has an optimum productive capacity of 5 metric tons of fish (about 20,000 cans) per 8-hour day. Present production, about 50 or 60 metric tons of sardines and tuna, for the 5-month fishing season from mid-October to mid-March, is a mere fraction of potential production. In spite of the small production, the Government has difficulty in disposing of the cannery's output. The organization which operates the Government-owned factories credit this to a prejudice on the part of the Iranians against canned foods. It might also be attributed to a poor quality product, high prices, and present marketing methods.

Quality and Prices: SARDINES: The Iranian sardines sell for a price equal to high quality Portuguese sardines, but it is highly doubtful if they could be marketed in the United States or Europe at any price because of the poor quality.

TUNA: The Iranian tuna is vastly superior to the sardines. It is of excellent quality and good taste. However, the pack is of different sizes and colors and, presumably, because of an improper bleeding method, the tuna is dark. The cutting of the tuna also produces flakes rather than solid pieces. The tuna is packed in olive oil. With skilled processing, the Iranian tuna would probably offer a good export possibility, provided production costs could be lowered to a competitive level. A case of 48 10-ounce cans of Iranian tuna sells for \$14.50 and a case of 100 4 $\frac{3}{4}$ -ounce cans sells for \$20.00. These prices are estimated to be 30 percent higher than the prices Iranian tuna could command on the world market.

Prospects of Development: There is considerable doubt whether the Persian Gulf sardines are an export asset. The tuna, on the other hand, presents possibilities. A still better export possibility is edible fish oil for which there is an existing heavy world demand. The Persian Gulf abounds in oil-bearing fish--including sharks, from which shark liver oil could be extracted. The Bandar Abbas cannery has a small oil pressing machine, but it has never been put into use. Oil extraction on a scale large enough to make export worthwhile would require additional machinery.



## Japan

ARRIVAL OF AMERICAN FISHERY SCIENTISTS: Three American fishery scientists from the Pacific Oceanic Fisheries Investigation arrived in Tokyo on November 17, 1948, to study the tuna and other pelagic fishery resources of Japan, according to the November 20 Weekly Summary of SCAP. The Pacific Oceanic Fisheries Investigation is a part of the U. S. Fish and Wildlife Service, Department of the Interior, with headquarters in Honolulu. These scientists are assigned to Natural Resources Section during their four-month stay in Japan.

ESTABLISHMENT OF A FISHERIES CREDIT GUARANTEE SYSTEM: Shortage of material and supplies experienced by the Japanese fishing industry throughout World War II and in the post-surrender period placed the industry in a critical situation and forced it to use makeshift materials, which greatly increased operation costs.



To alleviate this situation, the United States supplied materials which were received and processed in Japan, but these materials began to accumulate and stockpile at the manufacturers because the Japanese fishermen were financially unable to purchase them. In addition, the fishermen's financing difficulties were aggravated by abnormally poor catches of bonito and sardines for the past season.

A number of petitions requesting assistance in financing Japanese fisheries, especially the sardine purse-seine fisheries of the Tohoku region, were presented to the Japanese Diet, prior to dissolution in December 1948. The Diet instructed the Japanese Government to take action to alleviate this situation, according to the January 22 Weekly Summary of the Natural Resources Section of SCAP.

The Government prepared a plan called the Fisheries Bill System, which permitted the fishermen to give notes for materials to the manufacturers who would discount them at local banks. These loans are underwritten by the Reconstruction Finance Bank. The program provided that this assistance be extended to medium trawlers, tuna and sardine purse-seiners, and fixed net fisheries. It was estimated that ¥142 million (approximately \$526,000) was necessary for immediate needs, while ¥1,100 million (approximately \$4,074,000) will be needed to finance the four fisheries groups. The latter amount represents 30 percent of their total requirements.

The Japanese Ministry of Finance issued a statement on January 21, 1949, announcing the establishment of the Fisheries Bill System.

This is the first instance in the history of Japanese fisheries of the establishment of an organized method for financing fisheries, and it may well serve as a cornerstone in building an adequate financing system for Japanese fisheries.

In the opinion of Natural Resources Section officials, the Fisheries Bill System will stimulate fish production, and it will serve to further stabilize the nation's economy, as the plan does not necessitate the release of additional money.

PROPOSED LOAN TO FINANCE 1949 AGAR-AGAR PRODUCTION: The agar-agar industry is one of the most important industries in Japan, for purposes of foreign trade, because all raw materials used are of Japanese origin, and the sales are mostly export items. The industry is composed principally of small-scale producers in mountainous prefectures of Japan. These producers cannot finance the purchase of raw materials, and local banks cannot make loans to them unless the loans are underwritten by the Government.

The agar-agar industry needs long-term credit, because the first raw materials are purchased in April, the products are not sold until 18 months later, and another 6 months are required to obtain payment. Therefore, agar-agar producers do not realize any income from their work until after 2 years.

The Japanese Ministry of Agriculture and Forestry has proposed that the Reconstruction Finance Bank set aside ¥150,000,000 (approximately \$555,556) for underwriting loans made by local banks to agar-agar producers.

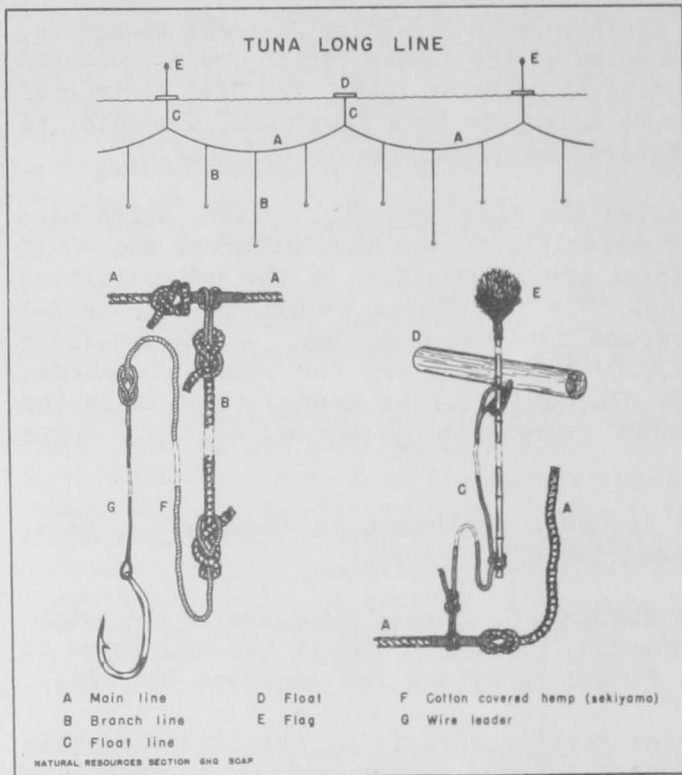
The Japanese Fisheries Agency reported that a system has been established for financing production of agar-agar in 1949 through loans made by local banks and underwritten by the Reconstruction Finance Bank which will be permitted to

Note: Values converted at the military rate of exchange of ¥270 for U.S. \$1.00.

underwrite a maximum of ¥100,000,000 (\$370,370) to be used to purchase seaweed for the production of agar-agar in 1949.

**TUNA FISHING AND PROCESSING METHODS:** Japanese methods of tuna fishing and processing at Yaizu and Shimizu, Shizuoka Prefecture and vicinity, and Misaki,

Kanagawa Prefecture, were examined by Natural Resources Section personnel of SCAP and reported in that agency's Weekly Summary of January 1 and January 8.



TUNA LONG-LINE GEAR USED BY JAPANESE.

coils, and, as a result, the fish tended to crowd into this more nearly optimum area. Overcrowding resulted in injuries and subsequent death of bait. To "train" bait fish to circle in a tank, they are confined for at least a week. During this period, from 40 to 60 percent, and occasionally, 100 percent of the bait fish caught will die. Bamboo baskets generally are best for training fish because they are more easily towed and are darker so that the fish are not so much alarmed. However, live boxes of netting generally are used because water circulation is better and more fish can be confined within the live boxes. In addition, it is easier to get the bait fish out of a live box made of net because the netting can be raised. The fishermen feel that sudden temperature changes will cause the death of the bait fish.

The Misaki tuna fishermen stated that they have not caught their own bait since 1925, the required bait being supplied by professional bait fishermen. After the bait, either sardines (Sardinops) or anchovies (Engraulis), has been held by the bait fishermen for 7 to 10 days, the weak fish have died, and the remainder are tame. Fish suitable for transfer to the bait wells of the fishing vessels generally are thin, having been confined too closely to allow for feeding; are tame and are not frightened when a boat approaches the holding box; and exhibit normal feeding reactions in the holding-box and in the bait wells, that is, they form a school and circle the tank, straining planktonic food from the water.

**Bait Fishing and Retention Methods in Japan:** When using large bait boats in the South Seas, Yaizu fishermen attempted to carry live bait from Kyushu to the Caroline Islands. However, many bait fish died when warm water was encountered in the area of Latitude 20° N. and southward. The sardine (Sardinops) has a maximum temperature tolerance of 25° C. (77° F.) and the anchovy, a maximum of 28° C. (82.4° F.). Although fishermen carried smaller bait loads and artificially cooled the water, they did not succeed in keeping bait. Installation of refrigeration equipment in bait tanks held promise, but failed because of the uneven distribution of temperature. Poor circulation kept all of the cold water near the refrigeration

While fishing for tuna in the South Seas before World War II, Japanese fishermen had difficulty obtaining and holding live bait. Bait supplies are generally poor in the South Seas. Much of it was caught by using "lift nets" at night, with lights to attract the fish. Most live bait died if not used the day after being caught.

Tuna Fishing Methods by Yaizu and Shimizu Tuna Fishermen: The fishermen's statements on the exact location of the yellowfin grounds in the South Pacific were rather vague, as the fishery is of a shifting oceanic nature. The Yaizu fishermen found the best yellowfin fishing between Longitude 135° and 145° E. near Latitude 4° N. The fishing, which is done with long-line gear, is best from January to April. The fish are found on the northern extremity of the equatorial counter-current, and the best fishing shifts eastward in this area as the winter progresses. The fishermen rely very heavily upon their thermometers in locating fish. For yellowfin tuna, the optimum temperature is 28°-29° C. (82.4°-84.2° F.), and 30° C. (86° F.) is too warm. The best fishing is found in schools of fish where the individuals weigh from 65 to 80 pounds. Smaller fish furnish poor fishing, as a rule. Pale blue is the best water for fishing; dark blue or green water is poor. In a good area, small fish often are found in the shade of the line and buoys. If the yellowfin are at the surface chasing these small fish, long-line fishing will be relatively unsuccessful, because the fish are too high in the water.

In searching for skipjack, the Misaki fishermen often use a telescope from the crow's nest. The captain tries to place his craft in the path of an advancing school, intercepting it as it travels. When the school reaches the vessel, bait fish are thrown to the skipjack in an attempt to stop the school beside the vessel. If the school shows no interest in the bait, the vessel circles the school, and more bait is thrown. Ten or fifteen minutes may be spent in this manner, with a maximum of about 150 fish thrown to the skipjack. As soon as the skipjack begin to feed, fishing starts. Jigs are used if the skipjack will accept them; otherwise, live bait is utilized. The fishermen said that they cannot tell whether or not a school will bite until after the bait has been thrown. Skipjack following a school of sardines cannot be caught; a hungry school of fish must be found. Weather seems to have little effect on the vigor with which the fish will bite, as the catch may be equally good in calm and rough weather. Ordinarily, the fishing is best in the early morning and in the evening.

Impounding Yellowfin and Black Tuna: Uchiura, Japan, is one of the very few places in the world where tunas have been held captive successfully. Fishermen had impounded black tuna (*T. orientalis*), yellowfin (*N. macropterus*), and yellowtail (*Seriola* sp.) before the beginning of World War II in an enclosure. The fish were caught in local traps, transferred to a live box, towed to the enclosure, and released. Captured fish put in at a size of about 15 inches grew rapidly but could not be held for long periods of time as they died, apparently from lack of food. The enclosure was a pool about 50 by 75 yards and graded from 6 feet deep near the edges to 18 feet deep at the middle. The tunas had grown about 8 or 9 inches in length during the 3-month period in which they were impounded.

Methods of Tuna Canning Inspection and Byproducts Manufacture: Only two of the tuna canneries are operating at Yaizu. The others are being overhauled for the canning of tangerines or were idle owing to the lack of fish. In general, the canning techniques were the same as those used by canneries in the Tokyo area.

Squalene oil has been produced by a Japanese company on a pilot-plant scale since July 1948. Raw materials for the production of squalene oil are liver oils

from deep-sea sharks, such as Centrophorus squardrous, Lepidochinus foliaceus, and Echinorhinus brucus. Insulin is produced at the byproducts plant of another Japanese company.

STATISTICS ON FISHING VESSELS: The Japanese Fisheries Agency, in addition to the regular quarterly report submitted to SCAP on the number of Japanese fishing vessels (powered, 5 gross tons and over), submitted a report on Japanese vessels powered and non-powered (including boats under and over 5 gross tons) for the period ending June 1948 (see table.)

Vessel Statistics of the Principal Fisheries (For the period ending June 1948)

Type of Service	No. of Craft	Gross Tons
Tuna and bonito .....	1,719	94,116
Sardine purse seine .....	3,293	37,403
Trawling in eastern area (boats operating east of 130° E in the East China Sea) .....	2,741	63,100
Bull trawlers of the western area consisting of pairs of boats operating west of 130°, East China Sea .....	971	66,305
Fish carriers .....	6,106	139,223

As of June 1948, the Japanese fishing fleet consisted of 95,412 vessels, representing 698,887 gross tons.



## Mexico

SHRIMP FISHING ACTIVITIES IN GUAYMAS CONSULAR DISTRICT: Shrimp fishing and freezing activities in the Guaymas Consular District operated at the lowest level possible within existing contracts due to continued low and soft prices in the United States, according to a January 23 report from the American Embassy at Guaymas, Sonora.

Despite this situation, it is rumored that a new freezing plant is planned in Guaymas. This would be particularly advantageous in that it would permit storage of shrimp during periods of low market prices and thus avoid dumping shrimp in markets already depressed.

The industry has made representations to Mexico City for the removal of a new tax of 200 pesos per metric ton placed on fish handled by the fishing co-operatives, but no alleviation has been forthcoming to date.



## Morocco

CANNED FISH INDUSTRY: The Moroccan canned fish industry has increased the number of its plants from 44 in 1938 to 87 in 1948, providing an increase in capacity from 1,117,000 cases to 1,895,000 cases in the same period. In Safi, 4 new factories are being constructed; at Agadir, 18 new factories are being built or planned to be built, and one is planned to be built in the near future at Mogador. With the completion of some of the canning plants presently under construction, this figure may shortly reach 2,210,000 cases<sup>1</sup> a year. However, the acute short-  
<sup>1</sup>One case contains 100 tins  $\frac{1}{4}$  club 30, approximately 31 pounds of fish, including oil. This represents a live weight of about 77 pounds of fish.

age of tinplate has restricted production to about 50 percent of capacity, according to the January 22 Foreign Trade, a Canadian periodical.

Moroccan Production of Canned Fish	
	Cases
1947 .....	620,000 <sup>1</sup>
1946 .....	350,000
1945 .....	600,000
1944 .....	301,000
1943 .....	251,000
1940 .....	557,000
1935 .....	330,000
<sup>1</sup> /20,000 cases tuna	

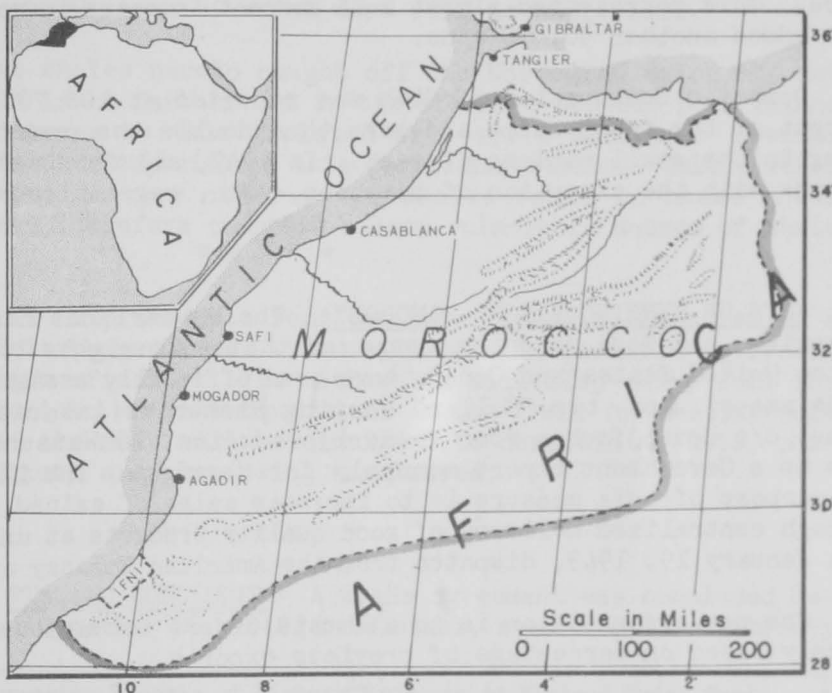
The fish canning industry, at the height of the fishing season, employs between 15,000 and 20,000 people.

The species of fish canned, subject to rigid inspection, in 1948, were, for the most part, sardines (prepared in pure olive oil or peanut oil), with smaller quantities of tuna, anchovy, mackerel, and bonito. Since local consumption is only approximately 20,000 cases a year, Morocco has been obliged to concentrate on the export market for the sale of her canned fish.

The United Kingdom has been the most important purchaser, smaller quantities going to Belgium, Sweden, Holland, and Central Europe. Fortunately for the industry, France and her overseas colonies have been able to absorb about 60 percent of the total Moroccan production.

Morocco is a better source of supply for canned fish than a market. However, certain varieties of fresh fish were imported for the canning plants during the past year as follows: sardines, 226 metric tons from Algeria; other fresh fish, 72.7 metric tons (65.9 metric tons from Algeria).

In view of the preferred position achieved by the Moroccan canned fish industry, the French market is a highly competitive one for the species of fish referred to above.



**PRODUCTION OF FISHERY BYPRODUCTS:** Since the war, more attention has been given the treatment of fish scraps from the canneries for the production of three important byproducts: fish flour, fish oil, and fish guano. During 1947, a total of 37 plants of varying sizes produced the following: fish flour, 5,000 metric tons; fish oil, 1,000 tons; guano (sold raw), 600 tons.

Possibilities for the further utilization of byproducts have already been studied, and large modern installations are now being built, particularly at Safi, to increase the present output. Refinery capacity for fish oil has been limited

owing to primitive methods, and the output has been disposed of on the domestic market for the tanning and paint industries.

By a recent decree, the Director of Agriculture, Commerce, and Forests has been made responsible for the control of all the ingredients used in the process of obtaining fish flour from scraps. The industry is confident that this will ensure good quality and that before long its products will compete very favorably on the export market.



## Netherlands

FISHERIES, 1947: With a steadily growing fishing fleet, the record catch of 1946 was exceeded in 1947; total catches of sea and fresh-water fish were estimated at 175,900 metric tons, of which 73 percent was herring, according to a December 1948 report from the Office of International Trade of the Department of Commerce. This represented almost a 25 percent increase in volume over 1946. Shellfish added another 50,430 tons.

Domestic consumption of fish was reported at 108,700 tons, or more than 60 percent of the total catch and more than double the prewar rate of consumption, owing to the small rations of meat. In 1947, all food was rationed in the Netherlands with the exception of potatoes, fish, vegetables, and fruit.

\* \* \* \* \*

SETS UP HERRING EXPORT MONOPOLY: The Netherlands Ministry of Agriculture, Fisheries, and Food recently announced that sole rights to export salted herring to the United States and Canada have been officially assigned to a recently formed trade association, the "Holland Herring Fisheries Association," located at The Hague, c/o Bedrijfschap voor Visserijproducten, 20 Wassenaarseweg. This action sets up a Government export monopoly for herring. The Ministry announced that the purpose of this measure is to increase sales of salted herring in North America through centralized delivery of good quality products at uniform prices, according to a January 19, 1949, dispatch from the American Embassy at The Hague.

The new organization is to allocate orders to various exporters and packers largely based on percentage of previous exports.



## Norway

FIND LONG LIVED COD STRAIN: Increasing Norwegian cod fishing off the west-Greenland coast is predicted in light of an anticipated drop in North Norway cod catches during the coming years. Statistics show that the largest catches off the Norwegian coast are made up largely of 10-year-old fish and that yields for 1939, 1940, and 1941 were unusually light, according to the Royal Norwegian Information Service.

This is borne out by record Norwegian catches in 1937 and 1947, with a warning slump in 1948 which may predict a run of poor years, considering the 10-year interval (see Commercial Fisheries Review, February 1949, p. 57).

In 1948, however, the two Norwegian boats which made the long trip to the Greenland banks returned with heavy catches. Tests made there show that the bulk of the catches in the southern waters were made up of 6-year-old fish, predicting a number of good fishing years ahead. The fact that large numbers of 10- and 12-year-old fish were also caught, further indicates that fishing operations there have made but limited inroads on fishing stocks and that the west-Greenland cod is an unusually vigorous and long-lived strain.

Increased Norwegian fishing off Greenland was also seen as a means of better utilizing labor and equipment which is otherwise inactive during the summer months following the end of the Norwegian cod season. Purse seiners operating out from a refrigerator ship were described as the most practical means of solving the distance problem.

SEA-BEEF EXPEDITIONS TO SPITZBERGEN: Plans for increasing Norway's production of whale meat through new whaling enterprises in the Arctic Ocean were indicated recently by the Norwegian Whaling Directorate. Land stations and small whaling concerns operating off the Norwegian coast produced last year a total of 9,500 metric tons of meat--6,000 tons of which were sold as whale beef.

On the assumption that whales hereto caught off the Norwegian coast are but a branch of a larger strain found further out in the Atlantic between Bear Island and Spitzbergen, new expeditions to this isolated area are predicted. Special note is made of the reproductive capacity of this particular strain. Unlike other breeds, which produce offspring every other year, whales found in these areas give birth each year and can therefore comprise a less vulnerable source of whale meat.

Within a short time, it is planned to send two expeditions accompanied by a refrigerator ship to the Spitzbergen area. This will make it possible to freeze the whale meat with a minimum of delay. The mothership will also carry fuel for the whale catchers sufficient to keep the expeditions in the field for considerable periods. While the bulk of the meat will be consigned to domestic markets, possibilities of whale meat export are also being considered.

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TRADE AGREEMENT WITH FINLAND CONCLUDED: A trade agreement was concluded between Norway and Finland on December 22, 1948, in Helsinki, according to a February 15 report from the American Embassy at Oslo. In effect since November 1, 1948, the agreement expires on October 31, 1949.

Norwegian Exports of Fishery Products to Finland Under Trade Agreement (November 1, 1948 - October 31, 1949)	
Commodity	Quantity or Value
Salted herring (fat and/or great herring)	10,000 bbls.
Stockfish .....	400 metric tons
Medicinal cod liver oil .....	100 " "
Fish oil for industrial purposes .....	200 " "
Veterinary cod liver oil .....	100 " "
Pharmaceutical refined herring oil .....	50 " "
Hardened whale fats .....	2,000 " "
Vitamin A concentrates .....	\$22,250 <sup>1/</sup>
<sup>1/</sup> Converted on basis of 4.4945 kroner = \$1.00	

Norway will export fish and fish products, oils and fats, fatty acids, whale oil, and other miscellaneous products (see table). In return, Norway will import products which do not include any fishery items.

The agreement provides that, in addition to issuing required licenses to fulfill the commodity trade stipulated on the lists of products, each country will take all practical measures to facilitate trade in commodities not listed, and in amounts in excess of those listed. Negotiations are now under way in regard to ways and means of increasing the trade between the two countries.

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U.S.S.R. BARS SEALERS: Norwegian sealers, who each year previous to the war, had been granted a letter of safe conduct by the Soviet authorizing sealing in the White Sea area, have not been permitted to hunt in these districts since the end of hostilities. A latest Soviet refusal to discuss the matter has led Norwegian sealers to conclude that the White Sea will be closed to them henceforth, according to the Royal Norwegian Information Service.

Earlier, Soviet authorities based their refusal on the danger of mines in those districts, but for the past two years no reasons were given for denying Norwegian applications.

According to a report appearing in Oslo's Arbeiderbladet, the Russians had promised that the matter would be taken up under recent Norwegian-Soviet trade negotiations in Moscow. When the White Sea question was raised, however, Russian officials refused to consider it, which indicates that there will be no further Norwegian sealing in the White Sea.



### United Kingdom

FISHERIES OF SCOTLAND, 1948: East coast Scottish trawlers, in 1948, landed a smaller volume, but higher value, of white fish (haddock, plaice, hake, whiting, halibut, sole) than in 1947, according to a January 13 report from the American Consulate at Edinburgh. Higher price for coal was the chief factor in higher operating costs.

Herring fishermen were more favorable to selling, at a lower but guaranteed price, surplus herring for conversion to oil and meal.

The Herring Industry Board conducted experiments in marking herring and other fish. Its research vessel, Clupea, was used to survey conditions in the Firth of Forth to ascertain why winter herring fishing there has been a failure for several years.

Inshore fishermen began receiving grants allowed on a greater scale, under the White Fish and Herring Industry Act, for acquiring, improving, and repairing boats and gear.



### International

TECHNICAL ASSISTANCE FOR ECONOMIC DEVELOPMENT OF FISHERIES: The United Nations and the specialized agencies have assumed, through their basic charters or articles



of agreement and various resolutions adopted by their governing bodies, certain broad responsibilities for helping their Members to obtain the technical assistance needed in connection with their economic development, according to the report, Technical Assistance for Economic Development, issued by the United Nations Department of Economic Affairs, Division of Economic Stability and Development, in September 1948. To carry out these responsibilities, they have created machinery within their organizations, initiated studies of the types of assistance required, and provided, on many different occasions, the technical advice or other assistance for which requests were received.



"Technical assistance" has been considered broadly to include such activities of the United Nations and the specialized agencies, exclusive of the provision of funds and relief supplies, as are designed primarily to assist Member countries in their economic development.

The General Assembly of the United Nations, at the first part of its third session, adopted a resolution which provides for appropriation of funds for rendering technical assistance for economic development by the United Nations. The resolution instructs the Secretary-General, in agreement with Governments concerned, on the basis of requests received from Member Governments, and where appropriate, in cooperation with the specialized agencies, to arrange for:

- (a) The organization of international teams of experts, for the purpose of advising Governments in connection with their economic development programmes;
- (b) The Provision of fellowships for study outside the country;
- (c) The training of local technicians within the country by promoting visits of experts; and to provide
- (d) Facilities to assist Governments in obtaining various technical services which may be needed in connection with economic development.

Responsibility for assistance in the development of agricultural, forest, and fishery resources devolves upon the Food and Agriculture Organization. Broad responsibilities in these fields are established by the organization's constitution which states, in the preamble, that the purposes of the organization include:

"Raising levels of nutrition and standards of living of the peoples under their respective jurisdictions,

"Securing improvements in the efficiency of the production and distribution of all food and agricultural products,

"Bettering the condition of rural populations, and thus contributing toward an expanding world economy."

Paragraph 3 of article I of the FAO constitution provides specifically for technical assistance, stating that it shall be the function of the organization:

"To furnish such technical assistance as Governments may request;

"To organize, in cooperation with the Governments concerned, such missions as may be needed to assist them to fulfil the obligations arising from their acceptance of the recommendations of the United Nations Conference on Food and Agriculture; and

"Generally, to take all necessary and appropriate action to implement the purposes of the Organization . . ."

The agency through which these responsibilities are carried out consists of an International Conference made up of representatives of Member countries; a Council to represent the Conference between sessions; a number of international advisory bodies made up of experts in various branches of agriculture, forestry, fishery or related fields; a large number of national FAO committees; and a secretariat.

Responsibility of assistance in the development and improvement of world fisheries and, consequently, in the world level of nutrition rests largely with the FAO. The scope of FAO's assistance in this field is indicated by its actual achievements and undertakings to date, which include missions, the provision of certain supplies, technical research, and international education and conferences.

Fisheries afford substantial opportunities for raising nutritional levels in the world. They have contributed greatly to the world's food supplies in the past, and it is certain that they can contribute much more. The highly productive continental shelf areas are not by any means fully exploited, especially in the Southern Hemisphere. High-seas fisheries for such species as tuna, sailfish, swordfish, and barracuda have been relatively little developed, although they have enormous potentialities. Fish farming, or the pond culture of fish, is widely practiced, particularly in Europe and the Orient, but mostly in a primitive way. The wider distribution of fish farms, the rigorous selection of the breeds of fish to be cultivated and the application of scientific principles of fertilizing and cropping hold forth great possibilities for utilizing bog lands, ravines, marshes, etc., to increase the quantities of protein available for local populations.

FAO has, on a number of occasions, provided direct assistance to members on matters pertaining to fisheries. It has been responsible for advising the Czechoslovak Government on refrigeration plants. The European representative of the organization has collaborated with ECE in examining the transport question as it affects the distribution of fresh and frozen fish in Europe. A fisheries expert served on the FAO mission to Greece, and further studies of Greek fisheries were subsequently prepared collaboratively by UNRRA and FAO. FAO is assembling material for a world directory of fisheries technologists, biologists, and economists, and is making arrangements for direct technical advice to Member Governments on the establishment and improvement of statistical services in respect of fisheries.

FAO is considering the establishment of a clearing-house for periodic reports on research in the handling of fisheries products, and is undertaking a number of studies concerning technical problems of fisheries and fish products, among them a study on world trade in salted fish and a catalogue of commercial fisheries resources. The organization has in preparation a series of recommendations on nomenclature and synonyms for commercial fish and a survey of methods of fishing, with special emphasis on recent innovations. It also intends to survey the possibilities of reaching an international agreement on quality standards for certain fishery commodities entering into international trade, and it is negotiating with universities and national research institutions for cooperation in basic studies connected with various fishery problems.

To keep Member Governments and private subscribers informed of work in progress and to provide a service on current international fisheries statistics, FAO issues a monthly Fisheries Bulletin. The organization also prepared the first Yearbook

of Fisheries Statistics, and is assisting Members in connection with the world census of fisheries to be conducted in 1950.

FAO is currently exploring, in connection with its roster of technical experts on fisheries, the availability of opportunities for education on various aspects of fisheries. This project, upon completion, will enable the organization to provide Members with information concerning government projects for the education of fishermen in fishing techniques and concerning institutions offering specialized courses in the field of fisheries.

A major project of FAO is the establishment of Regional Fisheries Councils for investigation and development of aquatic resources in parts of the world not actively served by such bodies. These are not intended to be primarily advisory bodies, but rather instruments for coordinating regional research work in the fields of hydrology, biology, technology, etc., on an international basis. With FAO headquarters acting as a clearing-house, they are intended to produce a survey of the world's living aquatic resources and methods of exploiting these wisely. Such Councils are proposed for the North-Western Atlantic, South-Western Pacific, South-Eastern Pacific, Western South Atlantic, Eastern South Atlantic, the Indian Ocean, and the Mediterranean Sea and contiguous waters.

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WORLD FISHERIES SITUATION IN 1949: The fisheries can be expected to contribute increased quantities of fish to world food supplies in the coming year, according to the report, World Food Situation, 1949, issued by the Department of Agriculture's Office of Foreign Agricultural Relations on January 12, 1949. Exchange problems are hampering the movement of fish in international trade and, combined with a larger catch, may result in actual surpluses in principal producing countries and the flooding of the accessible markets.

Increased supplies of fresh fish in many food deficient areas have lessened the need for imports. With the exception of Germany, Italy, and Japan, war ravaged fisheries have generally attained or exceeded their prewar output. Major producing countries, who developed their output during the war to provide food to deficit areas, are finding it increasingly difficult to market at capacity.

Absence of fishing activities for several years off the European coasts resulted in a large increase in fish population and in large catches immediately after the war with less effort and less equipment than in prewar. In 1948, signs of reduced abundance were noted and attributed to overfishing.

Greater quantities of fish were available in 1947 and 1948, especially in areas of short food supply, such as Europe. In 1947, production in Europe (except U.S.S.R.) totaled 5 million metric tons as compared with 1946 production of 4.2 million tons and an average prewar catch of about 4 million tons. Further additions to the fleet were made in 1948 and production has continued to increase. European vessels are fishing the Grand Banks of Newfoundland and other offshore areas in increasing intensity and contributing to food supplies to France, Spain, Portugal, and Italy.

In the Pacific, the Japanese catch is reported at 2.5 million metric tons as compared with 1.9 million tons in 1945 and 3.5 million tons prewar. While Russian production is not known, it can be assumed to be greater than prewar, and is potentially capable of further expansion through utilization of fishing areas formerly exploited by the Japanese.

United States production has remained about the same throughout the war and postwar period. Canadian production, which ranged from 400 to 500 thousand metric tons prewar, reached 550 to 625 thousand tons in the postwar period. Newfoundland and Labrador produced 377 thousand tons in 1946 and 278 thousand tons in 1947 as compared with 60 to 70 thousand tons in prewar.

While an increase in fish canning is reported in some areas, many countries, among these, principally France, Spain, and French Morocco, are not yet producing at full capacity because of their inability to obtain sufficient oil and tinplate.



### FISH OF THE PERSIAN AND OMAN GULFS

Methods of fishing and types of gear used in Southern Iran are extremely primitive. For the most part, these are based on the natural movement of the fish and, consequently, the equipment used is generally of stationary types. In some cases, boats of one-half to one ton capacity are used. These are usually propelled by oars or sails.

The most common types of equipment used by Southern Iranian fishermen are briefly as follows:

Drift Net or "Daam" - This is a stationary net devised to intercept sizable fish which, in attempting to pass it, are caught by the gills.

Fish-weir or "Moshta" - The moshta is a trap made of palm branches and works on the principle of admitting the fish on flood tide and trapping them on the ebb.

Cage or "Ghafas" - A funnel-shaped stationary trap made of palm branches and set in the sand with its mouth facing the sea. Usually a series of these traps are fitted together. Fish enter this trap also on flood tide.

Seine Net or "Toor" - This is the common fish net and is usually employed in shallow water.

Hook and Line or "Ghollab" - Baited hook and line are commonly used for hand fishing.

--Fishery Leaflet 304