International

FISH MEAL

MANUFACTURERS MEET IN CAPE TOWN, SOUTH AFRICA:

The Sixth Annual Conference of the International Association of Fish Meal Manufacturers was held in Cape Town, South Africa, April 25-29, 1966. Approximately 100 manufacturers of fish meal and fishery industry scientists from nearly 20 countries were expected to attend. Also expected at the Conference were a number of agents, brokers, and importers in the fish meal trade.

The Conference was postponed from its usual October dates in order that delegates might see the large and modern South and South-West African fish meal industries in full operation.

The private Association, which was formed in 1959, has members from 16 countries as follows: Belgium, Canada, Chile, Denmark, France, Germany, Holland, Iceland, Morocco, Norway, Peru, Portugal, South Africa, Sweden, United Kingdom, and the United States. It was anticipated that all countries would be represented. The U. S. Fisheries Attache for western Africa was also expected to attend. Representatives of the Fishmeal Exporters Organization (FEO), with which the Association cooperates closely on promotional and similar matters, were to be present, and observers from the fish meal industries of Japan, Mexico, Spain, and New Zealand were invited to participate.

Since 1960, the Association has worked in close cooperation with the Food and Agriculture Organization of the United Nations (FAO), which will again be represented at the Conference. Over the years the Association and FAO have continued to explore ways and means of developing fish flour (fish protein concentrate) for human consumption. An Association representative recently took part in an FAO Industry Steering Committee meeting set up by the Director General of FAO, to provide greater cooperation between industry and FAO in the Freedom from Hunger Campaign. Fish meal manufacturers internationally are becoming increasingly conscious of the important part they may play in combating malnutrition, not only in the development of fish protein concentrate, but because fish meal is an important ingredient in feeding poultry and pigs which are rapidly increasing in numbers in both developed and underdeveloped countries.

The Association's Executive Council and Scientific Committee endeavors to ensure orderly marketing of a product which is manufactured to uniformly high standards, and the exchange of much technical information. It is stressed that this is the primary objective of the Association, which is not concerned with matters of price or actual marketing. The Association has met in 14 different countries in the past 6 years. (International Association of Fish Meal Manufacturers, March 1966.)

NORTHWEST PACIFIC FISHERIES COMMISSION

JAPANESE INDUSTRY SEEKS EXTENSION OF CONVENTION

The Northwest Pacific Fisheries Commission (Japan-U.S.S.R.) held its tenth annual meeting in the Soviet Union in March 1966. In anticipation that the Commission might discuss the revision of the existing fisheries convention, which expires at the end of 1966, the Japan Fisheries Society in February held a special meeting to develop industry's position. The industry leaders shared the unanimous view that some changes in detail in the present treaty are desirable, but the treaty has performed a valuable role in protecting the resources and in maintaining an effective and orderly utilization of those resources. As such, Japan should not at this time press for changes in detail but should seek an extension of the present treaty. The Fisheries

tional (Contd.):

is reported to hold a similar view. Tsushin, February 11, 1966.)

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AND U.S.S.R. DIFFER ON STATUS G CRAB RESOURCE THWEST PACIFIC:

arp disparity in views on crab re- conditions marked discussions held n Japanese and Soviet fishery negotia- Moscow.

discussions began March 1 to fix a est Pacific fishery agreement for 1966 the Northwest Pacific Fisheries Com- n. Two subcommittees were estab- one for scientific and technical mat- nd the other for finances.

iet members of the scientific and tech- subcommittees claimed that both Japan e U.S.S.R. caught too many crabs in causing the size to diminish this year. lso said that crab resources as a whole eclined.

anese negotiators, on the other hand, d the Soviet claim as unfounded and un- able. They pointed out that while Japan d its crab fishing fleets last year to 4, me as for 1964, the Soviet side in- d its fleets from 6 to 7 and had a total mounting to 420,000 cases (48 $\frac{1}{2}$-lb. gainst the previous year's figure of 0.

anese catches last year totaled 240,000 as compared with the preceding year's 0 cases, they said.

subcommittee was scheduled to take matter again.

subcommittee completed discussions ring resources. As soon as agreement eached on crab resource conditions, it begin discussions on salmon resources. n Times, March 8, 1966.)

ee Commercial Fisheries Review, April 1966 p. 53.

ND AGRICULTURE ORGANIZATION

ERY DATA CENTER ESTABLISHED:

Fishery Data Center is being established Food and Agriculture Organization) in accordance with a resolution of the Intergovernmental Oceanographic Commission. Initially, the new Center will serve as a clearinghouse for data coming from the International Indian Ocean Expedition. Other international projects may be covered in the future. As planned, the Fishery Data Center would be a responsibility of the Fish Stock Evaluation Branch within the Fisheries Resources and Exploitation Division of FAO's Fisheries Department.

INTERNATIONAL WHALING COMMISSION

NORTH PACIFIC MEMBER NATIONS REVIEW AREA SITUATION:

Commissioners and advisers from the North Pacific Member Nations (Canada, Japan, U.S.S.R., and United States) of the International Whaling Commission met in Honolulu, Hawaii, February 14-17, 1966, to (1) discuss the possible threat of overfishing to the whale stocks in the North Pacific area and (2) to consider whaling regulations.

Fig. 1 - Japanese whale catcher in North Pacific.

The North Pacific Working Group of scientists met during the preceding week to review all available data on the condition of North Pacific whale stocks and to discuss stock assessments. The report of the Working Group was received by the Commissioners at their opening session and this report was used as the principal basis for their discussions. Careful consideration was also given to the proposals presented by each delegation.

Fig. 2 - Japanese whaling factoryship operating in North Pacific.

International (Contd.):

Fig. 3 - Flensing sperm whale aboard a Japanese factoryship in North Pacific.

It was found that there were large areas of agreement but the differences which remained prevented the adoption of any recommendations to the International Whaling Commission.

Fig. 4 - Washing the deck of a Japanese whaling factoryship.

It was agreed that additional stock assessments should be completed by the scientists as soon as possible and that a meeting of the Commissioners of the North Pacific Member Nations should be held the week prior to the 18th Annual Meeting of the International Whaling Commission to give further consideration to North Pacific whaling problems.

Argentina

FROZEN FISH INDUSTRY:

Argentina's frozen fish production consists primarily of fish fillet blocks with a small percentage of frozen whole fish. Annual production for the years 1962-64 was

Year	Quantity
	Metric Tons
1964	7,888
1963	6,101
1962	1,933

There are four firms engaged in the fis block industry which utilizes mainly hake ("merluza"), otherwise called "Argentine whiting." In 1964, 3,473 tons of frozen fis were exported, of which 2,203 tons went to the United States. During 1965, one firm e ported 1,501 tons of frozen fish blocks valu at $359,000, of which 1,245 tons, valued at $293,000, went to the United States. That san firm is planning to increase its fish productio capabilities from 300 tons a month to 1,000 to a month by June 1966. (U. S. Embassy, Buen Aires, Argentina, January 26, 1966.)

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CRAB FISHING POTENTIAL:

Atlantic waters off the southern tip of A gentina are rich in fishery resources, one which is the "Centolla" crab. This prized species is said to be as large as king crab.

Argentina hopes to develop a crab fishe modeled after the U. S. king crab fishery i Alaska. The Buenos Aires office of the A gentine National Territory of Tierra del F go is collecting information on this subjec including: (1) the names of shipyards whi build and outfit vessels for the Alaska king crab fishery, and (2) the names of compan which supply processing equipment for the king crab industry.

Development of the Argentine crab fish could lead to sales and investment opportuni for U. S. firms. Tierra del Fuego is a Fr Trade Zone, and machinery entering for use there is exempt from Argentine customs du Furthermore, most equipment recently ent ing Argentina for use in the development of t fishing industry has also been exempted fro customs duties. (United States Embassy, Bu nos Aires, February 19, 1966.)

Bulgaria

FISHERY TRENDS:

Bulgaria intends to fish the North Pacific, reports J. Nichol of the Vancouver (Canada) United Fishermen's Union. He spent 4 days in Bulgaria as a tourist in October 1966 and had chance to meet "officers of the (Bulgarian) fishermen's trade union." The center of the Bulgarian fishing industry is at Burgas on the Black Sea. At present, Bulgaria has only 3 deep-sea stern trawlers (supplied by the U.S.S.R.), but by 1970 a fleet of 20 trawlers and 2 refrigerated fish carriers will be acquired (also from the U.S.S.R.). Nichol also learned that Bulgaria declared a 12-mile territorial limit off her Black Sea coast. (Fisherman, January 21, 1966.)

Notes: Commercial Fisheries Review, August 1965 p. 67; April 1964 p. 51.

Burma

U.S.S.R. ENDS JOINT FISHERY RESEARCH WITH BURMA:

The research vessel Akademik Knipovich, with party of Soviet and Burmese scientists aboard, returned to the port of Rangoon after a three-day cruise in the Andaman Sea and the Bay of Bengal. Joint research was conducted on the high seas (to determine the potential resources for high-seas fishing) and in Burmese coastal waters (where sea bottom life was studied). Soviets will inform the Burmese Government on the results of their research in the Indian Ocean.

Canada

PER CAPITA CONSUMPTION OF FISHERY PRODUCTS INCREASES IN 1964:

Canadian per capita consumption of fishery products increased from a total of 14.5 pounds (edible weight in 1963) to 14.9 pounds in 1964. Most of the gain was in fresh and frozen fishery products with consumption up from 9.4 pounds in 1963 to 9.8 pounds in 1964, and cured fishery products increased from 1.7 pounds to 1.8 pounds. But consumption of canned fishery products dropped from 3.4 pounds (net weight) in 1963 to 3.3 pounds in 1964.

Although consumption of fishery products increased, Canada reported even larger increases in 1964 per capita consumption of poultry (up 6.2 percent) and meat (up 4.0 percent). (Dominion Bureau of Statistics, Ottawa, Canada, January 1966.)

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ATLANTIC HERRING FISHERY CONFERENCE PLANNED:

An Atlantic Herring Fishery Conference was scheduled May 5-7, 1966, in Fredericton, New Brunswick, by the Canadian Federal-Provincial Atlantic Fisheries Committee.

A new awareness by the fishing industry of the potential of Canada's Atlantic herring resource, coupled with a rapidly expanding market for herring meal, herring oil, and herring as food for human consumption, are the main reasons for this initiative.

A number of papers were prepared for the Conference by scientists and technologists, Provincial and Federal fisheries authorities, fishing companies, and fishing vessel operators. The subjects included the herring resources of the Northwest Atlantic, current Canadian developments in the herring industry in the Atlantic coast Provinces, herring catching vessels and fishing gear, trends in the utilization of the species, and marketing and economic considerations. (Canadian Department of Fisheries, February 23, 1966.)

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NEW BRUNSWICK FISHERIES DEVELOPMENT PROJECTS FOR 1966:

A number of joint projects for further development of the New Brunswick fisheries in 1966 were announced on February 3, 1966, by the Federal Fisheries Minister and the Minister of Fisheries for that Province. Among the more important of these are projects for crab and shrimp fishing, herring exploration in the Gulf of St. Lawrence, and the development of a combination fishing vessel. The Fisheries Research Board of Canada and the fishing industry will participate in parts of the program.

Apparently there are good prospects for crab and shrimp fishing, and this year's work, to be carried out by chartered vessels, will determine the feasibility of the commercial exploitation of the stocks, attempt to develop processing techniques, provide instructors for processing, and evaluate the market.

Canada (Contd.):

The herring project is to demonstrate the feasibility of catching herring in the Gulf of St. Lawrence with the object of establishing a fish meal industry based on that species. An 80-foot purse-seiner will be used to fish in various parts of the Gulf, and arrangements will be made with existing plants to produce fish meal.

New types of gear and equipment to increase the efficiency of the dragger fleet will be introduced. This project calls for the conversion of a stern trawler for combination operations. Last year's demonstrations of the "Atlantic Western Trawl" developed by the Federal Department of Fisheries will be continued. The application of Scottish seine-netting techniques will be demonstrated on existing groundfish draggers.

Other Federal-provincial projects in New Brunswick will involve the development of a light-attraction system for sardines, with a view to increasing the production of weirs; the design and construction of an improved establishment for curing herring as "bloaters"; the demonstration of proper harvesting techniques and drying and packaging methods for Irish moss; improved methods of catching, processing, and packaging silver eel for European markets; and the introduction of new techniques to increase the catch of smelt. As in the past, technical assistance for all projects will be made available by the Industrial Development Service of the Federal Department of Fisheries. (Canada's Department of Fisheries, Ottawa, February 3, 1966.)

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NEW FISHERIES PATROL VESSEL FOR NOVA SCOTIA AREA:

A contract for the construction of a new Federal Department of Fisheries patrol vessel for the Canadian Maritimes Area has been awarded to a shipbuilding firm in Meteghan, Nova Scotia, the Federal Fisheries Minister announced February 25, 1966. The contract is for $134,248. The new 70-foot wooden patrol vessel is for the Department's Conservation and Protection Service and will replace the Limanda. The new vessel will be equipped with a 346-horsepower marine engine. She will be stationed at Digby, Nova Scotia, and will carry out patrol duties on the Nova Scotia side of the Bay of Fundy and the counties of Digby, Yarmouth, and Shelburne.

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FISHERIES TRADE MISSION TO AUSTRALIA AND NEW ZEALAND:

A Canadian fisheries trade mission left Vancouver, Feb. 23, 1966, for Australia and New Zealand. Recent Australian interest in buying frozen groundfish from Canada probably stimulated the mission. Australia and New Zealand are traditional customers for Canadian canned salmon and canned sardines. The 7-man mission includes representatives of the fisheries trade in Nova Scotia, New Brunswick, and British Columbia, as well as Government officials. (Canadian Department of Trade and Commerce, Ottawa, February 16, 1966.)

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NEWFOUNDLAND WHALING POTENTIAL TO BE SURVEYED BY JAPANESE VESSEL

A Japanese whaling firm hopes to establish a whaling base in Newfoundland. The f is reported to have reached an agreement with Canadian interests whereby it will operate a whaling vessel off Newfoundland to survey the possibilities, beginning in May 196 The vessel, crewed by Japanese, will be chartered to Canada. Pending the outcome of t survey, a decision will be made on establishing a joint whaling operation in Newfoundla It is reported that this arrangement was requested by Canada. The Japanese firm pl to employ the 754-ton Kyo Maru for the su vey. (Nihon Suisan Shimbun, January 21, 19

Canary Islands

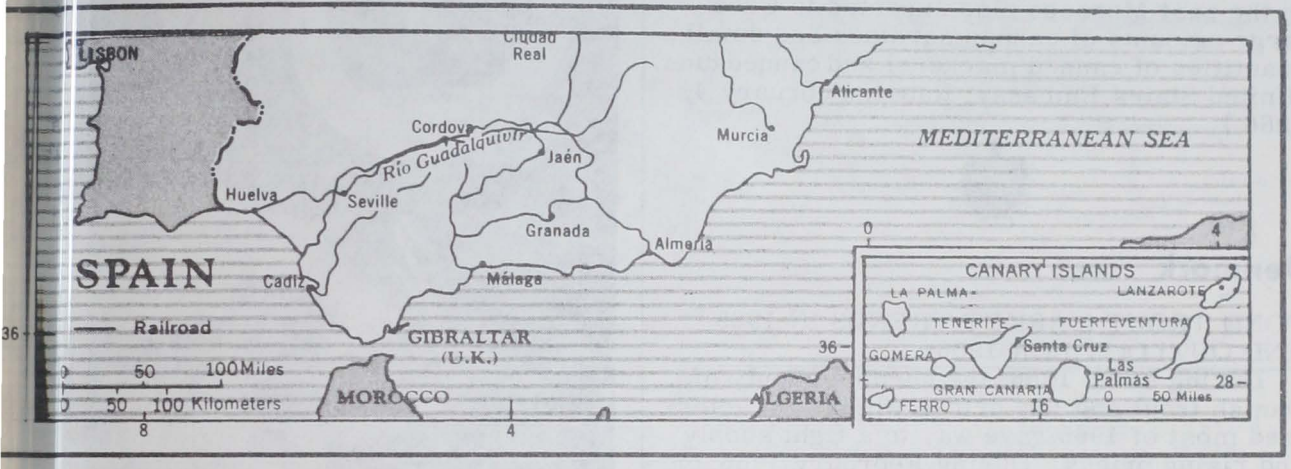
FISHERY ACTIVITIES:

While the Canary Islands include a to of seven islands, which together compris two provinces of Spain (Tenerife and Gra Canaria), principal fishery activities are centrated in three. Las Palmas, on the land of Gran Canaria, is by far the most portant fishing center, out of which opera some 145 vessels of all kinds. Next in im portance is the port of Arrecife, on the Is land of Lanzarote. Although there are so 191 fishing vessels operating out of that p 182 are "pontones" (unpowered small boa and their total production is not large. T third port is Santa Cruz, on the Island of nerife, at which 61 vessels are based, 52 which are "pontones."

According to statistics issued by Sin cato Provincial de la Pesca de Las Palm

an Islands (Contd.):

r the year 1963, the latest year available, ndings at the three ports totalled 127,255 etric tons of all species. Exports of fish-ry products in all forms (fresh, frozen, dried, 3 each at Arrecife and Santa Cruz), all of whose production of about 18,000 metric tons annually goes to Spain; and 35 plants (26 at Las Palmas, 5 at Arrecife, 4 at Santa Cruz) producing salted and dried fish for export to Spain and several West African Countries.



all canned, etc.) were 47,388 metric tons. Of the total, 28,636 tons went to mainland Spain, 6,167 tons to Italy (almost all frozen), 4,654 tons to Spanish Guinea (all dried), 2,213 tons to Congo-Brazzaville (almost all dried), 1,440 tons to Ghana (almost all dried), and the remainder to 10 other African, European, and South American countries.

In regard to freezing and cold-storage facilities, there are 3 in Las Palmas, and 1 each at Arrecife and Santa Cruz. Storage capacity of the Las Palmas freezers is 8,000 tons in a rather old plant, 6,000 tons in a new plant recently opened, and 5,000 tons in a plant not quite completed but to be opened shortly. As a result of this marked increase in freezer-storage space, storage rates have recently dropped from US$10 a ton to $5.50 with obvious benefit to the fishing industry.

Canneries for fish included until recently 3 in Las Palmas, 3 in Arrecife, and 3 in Santa Cruz. It is reported, however, that one of the Las Palmas canneries recently was closed and demolished to make room for a new hotel (an indication of the booming hotel business in Las Palmas and perhaps also an indication of the declining state of the tuna-canning industry in the Canary Islands). Although most of the canned tuna production goes to mainland Spain, some is also exported to Italy.

Other processing activities include a total of 10 fish meal plants (10 at Las Palmas and

Las Palmas has become an important base for the operation of Spanish and Japanese fishing vessels, but very rarely do other foreign vessels use this port. When they do, it is almost entirely for fuel or service. Although it was reported in January 1964 that Poland was planning the establishment of an operating base for fishing vessels in Las Palmas, those plans apparently did not materialize. There are at the present time estimated to be about 50 Japanese trawlers and 100 Japanese tuna vessels operating out of Las Palmas. The vessels are all refrigerated and will call at various West African ports for discharge of fish, but are based primarily at Las Palmas. Eight Japanese fishing companies maintain offices and resident representatives at Las Palmas. In addition to the trawlers and long-liners, a number of Japanese carrier vessels, with carrying capacities of up to 1,500 tons each, call at Las Palmas for transport of frozen tuna and trawl fish to Japan, Puerto Rico, and Mediterranean countries. According to one Japanese resident representative, Las Palmas is a good operating base because (1) labor is cheap, (2) transshipping can be accomplished without payment of customs or import taxes, (3) the climate is good year-round, and (4) recreation facilities for crews are good.

Note: See Commercial Fisheries Review, April 1964 p. 71.

Cuba

FISH MEAL IMPORTED FROM MOROCCO:

Morocco will export 4,000 metric tons of fish meal to Cuba in 1966. Those exports were included in a trade agreement signed between Morocco and Cuba in February 1965. In the past Morocco also exported to Cuba large amounts of canned sardines and small quantities of canned mackerel and canned tuna. (United States Embassy, Rabat, February 4, 1966.)

Denmark

POND TROUT MARKET TRENDS IN 1965 AND OUTLOOK FOR 1966:

During early 1966, the surplus supply of Danish trout and low prices which characterized most of 1965 gave way to a tight supply and rising prices. During February 1966, the price on all sizes of Danish trout rose about 9.9 U. S. cents a pound.

The available supply of Danish trout in February 1966 was not sufficient to meet export demands. This development was attributed to heavier than usual sales during the fall and severe winter weather which limited production.

During the last 4 months of 1965, Danish monthly pond trout sales were from about 800 to 900 metric tons, compared with about 600 to 700 tons in the same months of 1964.

The Danish supply of trout is expected to be somewhat less in 1966 than in 1965 when production reached a record of nearly 11,000 metric tons. The 1966 goals were probably set lower as a result of the surplus during most of 1965. Exports last year were a record 10,742 metric tons valued at US$10,143,000. Although the quantity exported in 1966 may not be as high, it seems most likely that the value of trout exports will set a new record.

Prices for Danish trout were not expected to drop even with the arrival of warm weather in the spring of 1966. The Lenten season was expected to exert an upward influence on prices. The minimum prices set on exports of certain trout products by the Danish Ministry of Fisheries on January 6, 1966, have in no way been responsible for the rising prices, according to reports from the trade.

The United States is a good market for Danish frozen trout taking 699 tons valued at $596,700 in 1965.

Weighing pond trout in a Danish plant. In Denmark there are more than 500 trout ponds.

The premiere of a film on the Danish pond trout industry was recently held in Esbjerg. The film will be used in promoting sales abroad and is available with English, German, French, and Italian commentary. 1/ (Regional Fisheries Attache for Europe, United States Embassy, Copenhagen, February 2, 1966.)

1/Requests for information about the film should be addressed to Erling Hulgaard, Fisheries Attache, Consulate General of Denmark, 280 Park Avenue, New York, N. Y. 10017.

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EXPERIMENTAL PRODUCTION OF ODORLESS, TASTELESS, EDIBLE FISH MEAL:

A Danish chemical engineer reports he has developed a process to produce odorless and tasteless fish meal by treating herring with an irradiation and enzymatic process. Apparently the product could be used for human food. A Danish patent apparently has been applied for. Research was financed by the inventor and West German capital. Ger-

Denmark (Contd.):

man and Norwegian fishery industries are interested in the process. A consortium has been formed in West Germany to finance development and use of the product.

The Technological Research Laboratory of the Danish Fisheries Ministry is unfamiliar with the new process and views the development with some reserve. (U. S. Embassy, Copenhagen, January 25, 1966.)

Ecuador

JAPANESE TUNA ENTERPRISE FAILS TO MATERIALIZE:

A Japanese firm planned to establish a joint tuna-fishing enterprise in Ecuador, to be located at Guayaquil. This information was based on an article in the Japanese periodical Suisan Keizai Shimbun of November 25, 1965. It has since been reported that this enterprise failed to materialize.

Note: See Commercial Fisheries Review, February 1966 p. 57.

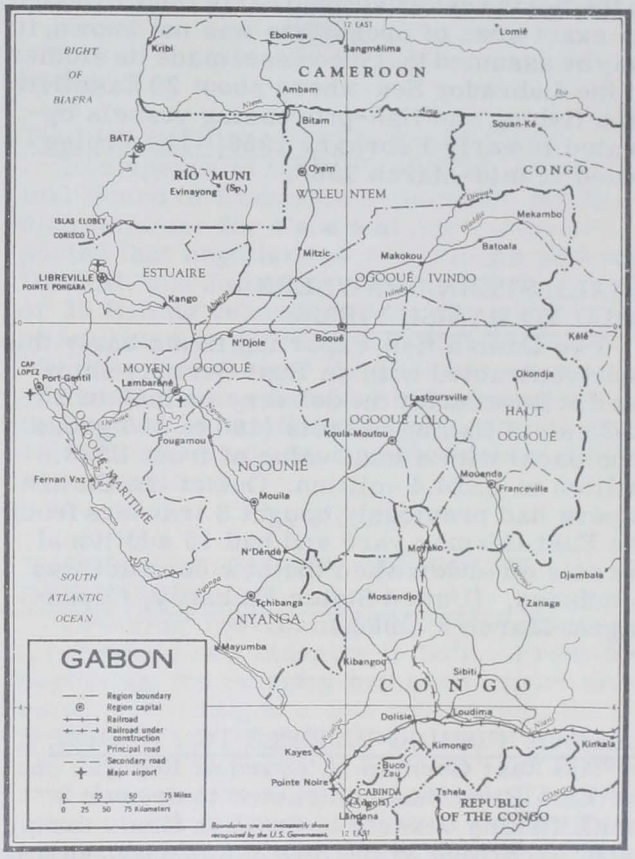
Gabon

ATLANTIC TUNA FISHERIES:

Tuna are found in the waters off Gabon in an area extending from the Equator south to Pointe Noire in the Congo (Brazzaville), extending up to 250 nautical miles from the coast. The species found are characteristic of those in the Gulf of Guinea: yellowfin tuna (Thunnus albacares), big-eyed tuna (Thunnus obesus), and skipjack (Katsuwonus pelamis). In addition to yellowfin and big-eyed tuna, Japanese fishermen with long-line gear have taken albacore (Thunnus alalunga) off Gabon.

There are no Atlantic tuna fisheries in Gabon, and the fishing industry in Gabon exploits to practically no extent the enormous resources of surface fish such as sardines and tuna. However, tuna are found off the coasts of Gabon.

Yellowfin tuna have been found in the southern part of the Gulf of Guinea off the coast of Gabon and also off the Islands of Annobon and São Tome. Fishing grounds are located from 2 to 10 nautical miles from the coasts of the islands and also in the area between them. The best season seems to be from November to March with the best periods being in November and February. It is estimated that it would take at least a year of trial fishing to gain information extensive enough to be of value to prospective fisheries.



The principal fishing firm located in Gabon has two trawlers which are not designed for tuna fishing. At present this firm is not known to have any plans to acquire tuna vessels. A French firm has indicated some interest in locating in Gabon, but does not intend to do so until the fishing possibilities off the coasts of Gabon have been more thoroughly explored.

There are no shore-based facilities available for handling tuna in Gabon. The nearest tuna facilities are in Pointe Noire, Congo. There are no plans to construct such facilities in Gabon at present.

No biological or technical research is presently being conducted by government installations on tunas. (United States Embassy, Libreville, February 21, 1966.)

East Germany

FISHERY RESEARCH IN THE NORTHWEST ATLANTIC:

East Germany's fishery research vessel Ernst Haeckel conducted a research cruise in the Northwest Atlantic in early 1966. Though its exact area of operations was not known, it may be assumed that the vessel made its studies in the Labrador Sea where about 20 East German fishing and fish-processing vessels operated in early February 1966. The cruise ended in mid-March 1966.

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SMALL STERN TRAWLERS SOLD TO DANISH FIRMS:

Two Danish fish-exporting firms early this year contracted with an East German shipyard at Rosslau for the delivery in 1968 of 20 to 25 steel fishing vessels (180 to 190 gross tons each) with a total value of from US$3.6 million to US$4.4 million. One of the Danish buyers had previously bought 3 trawlers from the East German yard and had 15 additional vessels on order when the new contract was concluded. (United States Embassy, Copenhagen, March 2, 1966.)

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SALE OF FISHING VESSELS TO SWEDEN:

The East German shipyard at Rosslau on the Elbe River has contracted to deliver 8 small fishing vessels to Swedish firms during 1966, according to the Swedish press. This is the same East German shipbuilder that contracted to deliver 20 to 25 small stern trawlers to Danish firms. Since 1964, the Rosslau shipyards have sold 29 small fishing vessels to Denmark, Sweden, and Tunisia.

Ghana

SOVIET FISHERY AID:

Soviet aid to Ghana's fisheries has been severely affected by the ouster of 130 Soviet technicians on March 1, 1966. The remaining 800-900 U.S.S.R. technicians (among them over 300 fishery technicians) were asked by the new Ghananian Government to leave by March 5, 1966. At that time, the Soviet Union was actively engaged in the following fishery projects: (1) construction of fish cannery, fish-smoking plant, fish-meal plant, can-making plant (all at Tema, Ghana); (2) delivery of medium and large trawlers; (3) training of Ghananian fishermen in the Soviet Union (over 120 as of August 1964) and aboard Ghana's fishing fleet; and (4) construction of fishing ports at Tema, and other cities. Other East European countries (Poland, Yugoslavia) also had extensive fishery aids and/or trade dealings with Ghana. It seems, however, that those countries will not be affected by the change in Ghana's Government. (New York Times.)

Greece

SOVIETS DELIVER STERN TRAWLERS TO GREECE:

Greece has ordered five large stern trawlers from the Soviet Union. The first of the five vessels was delivered in December 1965. The balance will be delivered during June-December 1966. The Greeks also have ordered three refrigerated transport vessels from Soviet shipyards. (Alieia, December 1965.)

Hong Kong

RECENT FISHERY TRENDS:

Fishery Trade: During 1965, the value of Hong Kong's imports of fish and fishery products amounted to HK$177 million (US$30.8 million) while the value of fishery exports reached only HK$74 million (US$12.9 million). Of the exports, HK$29 million (US$5 million) consisted of re-exports indicating a thriving local fish-processing industry.

Hong Kong Fish Sold on Domestic Markets, 1965

Type	Quantity
	Metric Tons
Fresh Marine Fish:	
Golden thread	9,671.6
Gareupa	813.6
Lizardfish	2,693.1
Red sea bream	516.6
Croaker	1,735.0
Yellow croaker	437.2
Mackerel scad	1,342.6
Anchovies	223.3
Others	33,489.7
Total Fresh	50,922.7
Salted and Dried Marine Fish:	
Anchovies	266.8
Croaker	296.8
Others	1,358.0
Total Salted	1,921.6
Grand Total	52,844.3

ong Kong (Contd.):

Domestic Markets: In 1965, over 50,000 etric tons of fresh marine fish were marketed roughout the Crown Colony, about one-fifth nsisting of the species golden thread (see ta- e). Salted and dried products were not much demand; less than 2,000 tons were sold.

Aid to Industry: At the end of 1965, about K$1.7 million ($290,000) was advanced to ong Kong's fishermen and fish-processing rms. (Special Supplement No. 4 to the Hong ong Government Gazette, January 28, 1966.)

ungary

ISH MEAL FROM PAKISTAN:

The Governments of Pakistan and of the ungarian People's Republic concluded a rade agreement on February 8, 1966. Fish eal is listed among the Pakistani commodi- es to be exported to Hungary, but the quan- ties are not specified. (United States Em- assy, Karachi, March 11, 1966.)

eland

XPORT STOCKS OF PRINCIPAL ISHERY PRODUCTS, DECEMBER 31, 1965:

Icelandic Export Stocks[1] of Principal Fishery Products, December 31, 1965

tem	Quantity	Value	
	Metric Tons	Million Kr.	US$1,000
undfish, frozen: r export to:			
Jnited States	1,621	42.1	977.7
Other countries	2,979	49.5	1,149.5
kfish	1,500	49.5	1,149.5
ring, frozen	9,304	58.6	1,360.9
strial products: sh meal:			
Herring	37,080	311.5	7,234.1
Other fish	1,349	10.4	241.5
erring oil	46,856	379.5	8,813.3

[1] ncludes only stocks intended for export.
te: Icelandic kronur 43.06 equal US$1.00.

As of December 31, 1965, Iceland's stocks of frozen groundfish (fillets) for export to the United States totaled 1,621 metric tons, a gain of 611 tons from the stocks on hand November 30, 1965. (United States Embassy, Reykjavik, January 27, 1966.)

India

TO BUY FISHING VESSELS ABROAD:

In a speech to the fifth meeting of the Central Board of Fisheries at Bombay, the Indian Minister for Food and Agriculture reported that negotiations would begin with the U.S.S.R. and Japan for the importation of 10 or 15 fishing vessels and for the construction of facilities to process the catches. The Minister emphasized the possible expansion of India's fishing industry by pointing out that annual Indian fishery production is about 1.5 million metric tons against a potential of 10 million tons.

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EXPORTS OF FISHERY PRODUCTS INCREASING:

Freezing and canning fishery products is a relatively new industry in India. From the beginning, the industry has been export oriented, according to a new publication, the Seafood Trade Journal, first issued in January 1966 by the Seafood Canners' and Freezers' Association of India (Cochin). The first commercial shipment of frozen shrimp from India was made to the United States in 1953. By 1959, there were 7 Indian firms processing and exporting frozen or canned fishery products. The Association reports that there are now at least 14 freezing plants and 11 canning plants in India producing fishery products such as frozen and canned shrimp, frozen frog legs, and frozen lobster tails. India has become one of the leading suppliers of shrimp to the United States. India's total exports of frozen shrimp to all countries in-

India's Exports of Major Fishery Products, 1962-1965

Product	1965		1964		1963		1962	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	Metric Tons	US$ 1,000	Metric Tons	US$ 1,000	Metric Tons	US$ 1,000	Metric Tons	US$ 1,000
rimp, frozen	7,028	8,742	5,870	6,652	3,967	4,475	2,238	2,284
rimp, canned	1,148	2,006	1,074	1,476	1,231	1,599	970	1,384
bster tails, frozen	111	269	41	78	53	66	40	48
g legs, frozen	443	568	332	348	514	674	391	485

India (Contd.):

creased from 5,870 metric tons in 1964 to 7,028 tons in 1965.

Ivory Coast

FISHERY LANDINGS, 1965:

The Ivory Coast fishing industry continued its upward trend in 1965, according to statistics released by the Fisheries Service. The Abidjan-based fleet of some 70 vessels (35 trawlers and 35 purse seiners) landed a total of 44,599 metric tons of fish and shellfish during 1965. This was 14.6 percent more than the 38,116 tons landed in 1964, almost exactly equal to the 14.2 percent annual increase projected in the GOIC's (Government of the Ivory Coast) economic development plans for this industry. It should be noted, however, that these plans call for an annual increase of only 6.8 percent for the next five-year period.

Among the 50-odd species landed at Abidjan, eight accounted for more than 1,000 tons each (see table).

Leading Species Landed at Abidjan, 1965

Common Name	Scientific Name	Quantity
		Metric Tons
Sardine	Sardinella aurita	4,318
Herring	Sardinella eba	13,113
Grunt	Brachydeuterus auritus	8,806
Jacks	Vomer, Chloroscrombrus sp.	1,067
Tuna, bonito and skipjack	Euthynnus, Auxis, Sarda, Katsuwonus sp.	1,989
Drum	Pseudotolithus senegalensis	2,930
Threadfin	Galeoides decadectylus	1,506
Soles	Cynoglossus, Solea sp.	1,090
Other	-	9,780
Total		44,599

Included were 145 tons of shrimp. Although production of shrimp for the first six months of the year exceeded that of the first half of 1964, total production for the year was somewhat less than the 160 tons caught in 1964. Aside from small quantities consumed locally, Ivory Coast shrimp is exported to France, some fresh by air and some cooked and frozen shipped by both air and sea.

Not included are tuna landings used by the small local cannery and for transshipment to Puerto Rico, Europe, and Japan. This industry continued its upward trend, accounting for 10,995 metric tons in 1965, plus an additional estimated 8,000 tons transshipped directly from tuna vessels to a refrigerated carrier.

Continuing its comprehensive plans for fishing industry development, the GOIC expects to shortly commence actual construction of the second quay in the new fisheries port at Abidjan. It was also expected that the end of March would see the announcement of the award of contracts for the construction of the new 3,000-ton storage capacity freezer plant and the new 50-ton-a-day tuna cannery. Later plans, the time of which is yet uncertain, include a can-making plant, byproducts or fish meal plant, and a fish-distribution system into the interior using rail and refrigerated truck facilities to serve nine interior population centers. (Regional Fisheries Attache, United States Embassy, Abidjan, March 15, 1966.)

Japan

TUNA LANDINGS IN YAIZU, FEBRUARY 1966:

February 1966 fish landings at the Japanese port of Yaizu (the leading tuna port), as tabulated by the Yaizu Fishery Cooperative Association, totaled 14,712 metric tons valued at 1,760 million yen (US$4.9 million). This was close to a twofold increase over February 1965 landings, which totaled 8,794 tons valued at 430.3 million yen ($1.2 million). The increase was primarily due to a tenfold increase in mackerel landings. (Suisan Keizai Shimbun, March 10, 1966.)

Yaizu Fish Landings by Species, February 1966 with Comparisons

Species	1966		1965
	Feb.	Jan.-Feb.	Feb.
	(Metric Tons)		
Tuna:			
Albacore	955	1,658	928
Skipjack	2,597	3,314	681
Other	5,978	11,655	6,081
Mackerel	4,410	4,632	446
Others	772	1,530	658
Total	14,712	22,789	8,794

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TUNA FISHING TRENDS:

The Japanese Fisheries Agency reported in early March 1966 that in 1965 Japanese tuna long-liners operating within the proposed eastern Pacific yellowfin regulatory area

Japan (Contd.):

landed 21,610 metric tons of fish, of which 2,733 tons consisted of yellowfin tuna. In December 1965, 22 long-liners fished that area.

Good albacore tuna fishing had developed in February 1966 in the Atlantic Ocean off Recife, Brazil, in the area 30° W. longitude, 25°-30° S. latitude. Catches averaging 2.7-3 tons a day were being made by Japanese tuna long-liners which concentrated in large numbers in that area.

Good yellowfin fishing was reported in the Gulf of Guinea off West Africa in late February, with catches averaging 2.5-2.7 tons a day.

Prices of frozen tuna exported to the United States from Japan proper in early March 1966 were holding firm at US$500 a short ton for round albacore and $490-495 a short ton for dressed yellowfin, both prices f.o.b. Japan. Atlantic-caught yellowfin and albacore transshipped to the United States were bringing $495-500 a short ton, f.o.b. Las Palmas. Japanese observers were of the opinion that the good albacore fishing off Brazil might serve to check any further albacore price increases.

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TUNA FISHING OFF AUSTRALIA:

Three units of a Japanese fishing long-line fleet fished for tuna south of Tasmania in late 1965. The vessels, ranging from 123 to 136 feet long, each carry a 50-mile long-line to which are attached 2,000 hooks. The line is buoyed every 100 feet and is set 30 to 50 feet below the surface. It takes about 18 hours to retrieve the line which is shot once a day. The catch rate is understood to have been between 2 and 3 fish per 100 hooks, the tuna averaging between 50 and 200 pounds, with exceptionally large ones up to 500 pounds. The Japanese fleet, consisting of between 10 and 15 long-liners, was the same fleet that fished off the east coast of Tasmania in 1964. (Australian Fisheries Newsletter, February 1966.)

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EXPANDS TUNA PURSE-SEINE TEST FISHING OFF WEST AFRICA:

With the hope of establishing a new method of fishing tuna in the South Atlantic, experimental purse-seine fishing will be expanded off the coast of West Africa by a Japanese fishing firm. The experimental fishing will be done by a fleet of 3 purse-seine vessels, 1 refrigerated mothership, and 2 transport ships. Fishing tests will begin in June 1966 off the coast of Sierra Leone and Ivory Coast.

Tuna fishing with purse seines has been conducted on a small scale off the Sanriku coast of Japan, and full-scale deep-sea fishing operations were started in November 1964 off the coast of West Africa with the approval of the Fisheries Agency. Compared with long-line fishing (which has been the primary Japanese tuna-fishing method), it is reported that purse-seining has advantages in that: (1) It is easy to use instruments such as fish finders and (2) it is a more positive and efficient fishing method because it is possible to encircle a school of fish in a short time and obtain a large fish catch at a single cast of the net. If the experimental fishing operation proves successful, it will result in a major change in tuna fishing methods.

In the first experimental fishing operations (one purse-seine vessel, one mothership, and two transport ships) conducted by the company, the year's catch was only 4,000 metric tons of tuna and bonito. This was small considering the size of the fleet and the company lost money. As a result of this experimental operation, however, it was found: (1) the purse-seine method is more mobile than the long-line fishing method, and it is possible to conduct fishing operations in waters with abundant resources and closer to the coast; (2) the fishing grounds off the coast of Sierra Leone and Ivory Coast have abundant resources, and moreover, as seaweed grows thickly in comparatively shallow water, purse seining is more practical; and (3) as the tidal currents are swifter than in Japanese waters, it is necessary to strengthen the nets.

By improving fishing gear and methods based on the experience from the first experiments, and by increasing catches with additional purse-seine vessels, the company believes the operation can be made profitable and has, therefore, decided to proceed with this second experimental operation. (Nihon Keizai, February 20, 1966.)

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Japan (Contd.):

POWER REEL TO SAVE LABOR ON TUNA VESSELS:

Since early in 1965, one of Japan's leading tuna-fishing companies has employed its vessel, the 99-ton long-liner Hatsuhi Maru, to test a power reel to save on labor. From January 25 through February 20, 1966, the vessel conducted a second series of tests of the reel on the Southern Pacific fishing grounds near Ponape Island (between the Caroline and Marshall Islands). The crew was reduced to 15 from the normal complement of 20. About 250 baskets of gear were used. This is about two-thirds the amount ordinarily used on a vessel of this size. The daily catch of big-eyed, yellowfin, and other species of tuna averaged around 2 to 3 metric tons, which is about the same as that taken by an ordinary vessel. Fishermen's organizations expressed concern that this would result in a drop in labor demand and reduce employment. The fishing department of the company reported, however, that the crew of the Hatsuhi Maru was pleased with the new method, especially since it did away with the arduous task of handling the lines. It was reported that the company plans to use the power reel on 2 of its 250-ton vessels, the Azuma Maru Nos. 15 and 26. Eventually the company was expected to convert its 30 or more tuna long-liners to the reel method of handling the gear. A number of other Japanese companies were reported also making the conversion. The president of one other company said that of their total of 13,500 gross tons of tuna vessels, the operations of about 3,500 tons of unprofitable vessels (especially those operating in the Atlantic) were to be ended and on the remainder such labor-saving devices as the power reel would be employed. (Suisan Tsushin, February 22, 1966.)

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LABOR-SAVING DEVICES BEING ADOPTED BY TUNA-FISHING FIRMS:

A Japanese fishing company, beginning in June 1965, embarked on a two-year plan to modernize its 16 tuna long-line vessels so as to reduce operating costs. To date, that firm is reported to have installed labor-saving equipment (consisting of a new method for setting and hauling long-line gear) on 3 vessels, ranging in size from 484-697 gross tons, and has succeeded in reducing manpower requirements from about 32-33 men to 25-26 men per vessel. The saving in labor is estimated to total nearly one million yen (US$2,778) a man, or equal to 5-6 million yen ($13,889-16,667) per vessel.

Another major tuna-fishing company has dispatched the 300-ton tuna long-liner Einin Maru on a six-month fishing cruise to test the labor-saving devices installed on that vessel. In addition, that vessel will experiment with freezing fish by "hanging" instead of plate freezing, the usual method. Through mechanization of operations, the size of the crew on the Einin Maru is said to have been reduced by about 7 men to 20. If the fishing trials prove successful, the firm plans to gradually adopt the new methods on all its long-liners. (Shin Suisan Shimbun Sokuho, March 12, 1966.)

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TESTING VERTICAL LONG LINE:

For some time the Kanagawa Prefectural Fisheries Experimental Station, Misaki, has been studying the vertical long line for fishing tuna. The research vessel Sagami Maru, was conducting experiments in late February 1966 in waters nearby with 20 baskets of gear. In May, the amount of gear was to be increased to 30-50 baskets. Ultimately as many as 200 baskets will be used to test tuna fishing to depths of 100 to 150 fathoms. Also in May, another vessel, the Enoshima Maru, was to be equipped with the gear to conduct trials in the Sanriku area and to see if this fishing could serve as a possible supplement for the mackerel pole-and-line vessels of that district. (Suisan Tsushin, February 25, 1966.)

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FISHING COMPANIES SHOW DEFICIT IN TUNA OPERATIONS:

Financial statements released by some Japanese fishing firms for the business year 1965 indicate that a number of them lost money in their tuna operations despite a 50- to 60-percent increase in sales (due to the rise in tuna prices) as compared with 1964. Japan's leading fishing firm reportedly grossed 110 billion yen (US$333 million) in total sales and netted a profit of over 7 billion yen ($19.4 million), but lost 300-400 million yen ($0.8-1.1 million) in its tuna operations. Another major company is reported to have lost over 500 million yen ($1.4 million) from its tuna operations. Due primarily to this loss, that firm is said to be unable to pay any dividends

Japan (Cont.):

to its stockholders this year, although previously it had regularly declared a 6-percent dividend.

The Japanese firms reportedly anticipate a good year in 1966 in view of the growing worldwide demand for tuna and market conditions, and are planning on making substantial investments to reduce vessel operational costs through adoption of labor-saving devices. (Suisan Tsushin, March 7 & 11; Minato Shimbun, March 10, 1966.)

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FROZEN TUNA EXPORT MARKET OUTLOOK IN 1966:

The Japan External Trade Promotion Organization (JETRO), in a report on the future of Japanese frozen tuna exports, stated that the outlook in 1966 is bright in view of the growing demand for tuna in the United States. The report stressed the importance of lowering production costs and selling better quality tuna at higher prices, rather than increasing production. To achieve this, the report points out the need to: (1) modernize production facilities; (2) develop positive measures to rationalize management; and (3) establish a thorough and orderly export system in line with export market trends.

According to that report, Japanese tuna production reached a peak in 1962 and thereafter began to trend downward, but albacore catches have been increasing annually. Frozen tuna validated for export in 1965 totaled 154,000 metric tons (4-percent increase over 1964), valued at US$53,973,000 (1-percent decrease from 1964). Some noteworthy developments in 1965 were the general improvement in frozen tuna exports to Europe and Africa; the generally stagnant tuna market in the United States and Canada; increased catches of albacore and skipjack and the decline in the yellowfin catch; soft market conditions in the first half of 1965 and improvement observed in the latter half of that year.

The report added that the 3- to 4-percent increase in U. S. canned tuna demand in 1965 as against 1964 and the current canned tuna production situation in the United States provide a bright outlook for Japanese frozen tuna exports in 1966. However, it concluded that no significant increase in exports can be expected in view of the declining productivity of the Japanese tuna fleet, reduced profits for vessel owners due to rising operating costs, and growing international competition. (Nihon Suisan Shimbun, March 9, 1966.)

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FROZEN TUNA EXPORTS TO U. S. AND PUERTO RICO, DECEMBER 1965:

Japan's exports of frozen tuna to the United States and Puerto Rico increased in December 1965 as compared with the previous month. Exports to the United States proper almost doubled in quantity while the value was 2½ times that in October. The increases in exports to Puerto Rico were proportionately not quite as large. (Fisheries Attache, United States Embassy, Tokyo, March 15, 1966.)

Japan's Exports of Frozen Tuna by Species to the United States and Puerto Rico, Nov.-Dec. 1965

Species	1965			
	December		November	
	Qty.	Value	Qty.	Value
	Short Tons	US$ 1,000	Short Tons	US$ 1,000
Albacore:				
United States	846	349	539	175
Puerto Rico	1,525	515	1,096	351
Total	2,371	864	1,635	526
Yellowfin:				
United States	877	325	290	94
Puerto Rico	930	231	135	28
Total	1,807	556	425	122
Big-eyed:				
United States	-	-	-	-
Puerto Rico	102	25	-	-
Total	102	25	-	-
Skipjack:				
United States	-	-	-	-
Puerto Rico	1,181	173	1,127	156
Total	1,181	173	1,127	156
Other:				
United States	-	-	-	-
Puerto Rico	-	-	73	15
Total	-	-	73	15
Total United States	1,723	674	829	269
Total Puerto Rico	3,738	944	2,431	550
Grand total	5,461	1,618	3,260	819

Source: Japan's Bureau of Customs.

SKIPJACK TUNA MARKET GOOD:

Japanese frozen tuna exporters are estimated to have contracted for export to the United States for about 2,500 short tons of skipjack tuna during the period early February-early March 1966. During that same

Japan (Contd.):

period, the f.o.b. export price for skipjack climbed from US$290 a short ton to $347.50, but subsequently declined to $342.50 (said to be equal to about $390 a ton, c.i.f.).

The ex-vessel price in Japan of frozen skipjack suitable for export ranged from 105-115 yen a kilogram ($264-290 a short ton). Frozen tuna exporters were buying skipjack from such far-away points as Makurazaki, Kagoshima Prefecture (over 1,000 miles by rail from Shizuoka Prefecture). Skipjack fishing was good, with 300-400 metric tons being landed daily.

Beginning in late February, Japanese tuna packers were showing lively interest in canning skipjack in brine and in oil, paying 90-95 yen a kilogram ($227-239 a short ton) for their supplies. The packers' interest in packing skipjack heightened following the establishment by the Tokyo Canned Tuna Sales Company on March 9 of a check-price of $9.95 a case for lightmeat tuna in brine, an increase of one dollar a case over the previous price. (Suisan Tsushin, March 10, 1966.)

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EXPORTS OF CANNED TUNA, JANUARY-OCTOBER 1965:

During October 1965, Japan exported 4,400 metric tons of canned tuna (in oil and brine) valued at US$3.7 million. From January through October 1965, total exports of canned tuna amounted to 34,700 tons valued at $28.6 million. This canned tuna was sold in 77 countries, of which the United States, West Germany, and Canada were the leading markets. Their combined purchases accounted for 78 percent of all canned tuna shipped and 80 percent of the total value. Canned tuna amounting to 15,000 tons, valued at about $14 million, was exported to the United States. The shipments to the U. S. accounted for 43 and 48 percent, in quantity and value, of the total exports of Japan's canned tuna. (Fisheries Attache, United States Embassy, Tokyo, January 25, 1966.)

Japan's Exports of Canned Tuna, January through October 1965, by Country of Destination
(Quantity in Metric Tons--Value in $1,000)

Product	United States		Canada		All Other Countries		Total	
	Oct.	Jan.-Oct.	Oct.	Jan.-Oct.	Oct.	Jan.-Oct.	Oct.	Jan.-Oct.
Albacore (in oil):								
Quantity	-	152.9	209.4	2,137.2	145.9	2,062.4	355.3	4,352.5
Value	-	149.5	192.0	1,917.6	123.7	1,703.1	315.7	3,770.2
Albacore (in brine):								
Quantity	1,354.6	12,066.0	-	50.4	-	-	1,354.6	12,116.4
Value	1,321.4	11,615.9	-	47.1	-	-	1,321.4	11,663.1
Albacore (in jelly or tomato paste):								
Quantity	-	-	3.3	28.8	5.9	55.1	9.2	83.9
Value	-	-	2.7	23.2	4.6	43.6	7.3	66.8
Tuna (in oil) 1/:								
Quantity	-	2.5	-	19.4	293.5	2,953.8	293.5	2,975.7
Value	-	3.9	-	18.5	251.5	2,273.0	251.5	2,295.4
Tuna (in brine) 1/:								
Quantity	44.7	189.5	-	-	-	2.2	44.7	191.7
Value	38.0	158.6	-	-	-	2.5	38.0	161.1
Bonito (in oil):								
Quantity	0.3	0.3	-	-	1,160.1	5,467.0	1,160.4	5,467.3
Value	0.2	0.2	-	-	952.9	4,173.9	953.1	4,174.1
Bonito (in brine):								
Quantity	279.5	2,588.0	-	-	9.8	20.6	289.3	2,608.6
Value	215.1	1,992.3	-	-	7.9	15.8	223.0	2,008.1
Tuna (in jelly or tomato paste) 2/:								
Quantity	-	6.7	-	0.2	85.0	543.3	85.0	550.2
Value	-	5.2	-	0.1	52.5	331.7	52.5	337.0
Other tuna and bonito:								
Quantity	17.1	64.7	1.8	18.0	818.9	6,272.5	837.8	6,355.2
Value	16.1	51.4	1.3	13.5	544.8	4,085.0	562.7	4,149.9
Total quantity	1,696.2	15,070.5	214.5	2,254.0	2,519.1	17,377.1	4,429.8	34,701.6
Total value	1,590.8	13,977.1	196.0	2,020.0	1,938.3	12,628.5	3,725.2	28,625.6

1/Excluding albacore.
2/Excluding albacore and bonito.

FROZEN SWORDFISH EXPORT VALIDATIONS TO THE U. S. AND CANADA, APRIL-DECEMBER 1965:

Japanese export validations of frozen broadbill swordfish (fillets, chunks, and "other" forms) to the United States and Canada in December 1965 totaled 422 short tons valued at US$300,319. This compared with validations of 363 tons valued at $278,753 for November 1965 and 469 tons valued at $307,860 in December 1964.

For the 9 months April-December 1965, Japan's export validations of frozen swordfish to United States and Canada totaled 3,536 tons valued at $2.6 million. Fillets accounted for 64 percent of the total, with the remainder made up of chunks and other forms. For the same 9 months in 1964, the frozen swordfish export validations totaled 2,962 tons valued at $1.9 million. (Fisheries Attache, United States Embassy, Tokyo, Feb. 24, 1966.)

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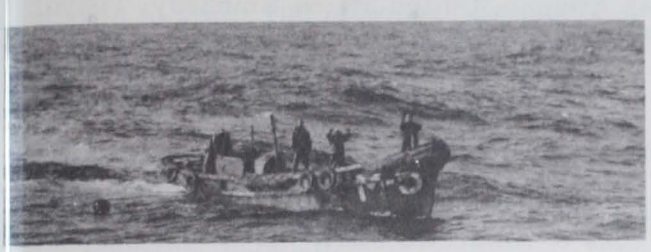
KING CRAB MOTHERSHIP LICENSED TO OPERATE IN EASTERN BERING SEA:

Licenses for 5 Japanese fishing companies to process (can) king crab in the eastern Bering Sea during the 1966 season have been issued by the Japanese Fisheries Agency. The 5 companies will operate jointly with the factoryship Dainichi Maru (5,859 gross tons). The factoryship departed from Japan on March 1, 1966. The mothership has a fleet of 9 "Kawasaki" vessels (portable launch-type vessels or skiffs) and 5 catcher boats. The 1966 season operations were licensed for March 1 to December 31, 1966. It is anticipated, however, that the operations will probably be completed before the expiration

Japan (Contd.):



"Kawasaki" vessel or skiff used to take lines and supplies from the mothership to the catcher boats.

date of the licenses. (Fisheries Attache, United States Embassy, Tokyo, March 7, 1966.)

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HERRING WILL BE IMPORTED FROM U.S.S.R. IN 1966:

As a result of consultations with the Hokkaido Government, the Hokkaido Fishermen's Federation, and the Aomori Prefectural Government, the Japanese Fisheries Agency decided to import 4,500 tons of Soviet-caught herring in 1966 (4,000 tons last year) and to allocate 4,300 tons to Hokkaido and 200 tons to Aomori Prefecture. As in 1965, the Herring Import Project Association will purchase herring at sea and deliver them to the Hokkaido Fishermen's Federation. The Federation will produce dried herring and herring roe.

Importation of Soviet-caught herring was started in 1960 to allow fishermen in Hokkaido to process herring to make up for poor catches. However, since Aomori Prefecture is exporting apples to the Soviet Union in a barter trade for herring (exports last year were 2,000 tons), the Aomori Prefectural Government demanded and was granted an allocation of herring. (Asahi, Mar. 19, 1966.)

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EXPORTS OF FROZEN RAINBOW TROUT, DECEMBER 1965:

Japan's exports of frozen rainbow trout in December 1965 increased as compared with the previous month--about 18 percent in quantity and about 23 percent in value. There were substantial increases in exports to the United States, the United Kingdom, Canada, and the Netherlands. Exports to Belgium dropped considerably. (Fisheries Attache, United States Embassy, Tokyo, March 15, 1966.)

Japan's Exports of Frozen Rainbow Trout by Country of Destination, December 1965

Destination	Quantity	Value
	Short Tons	US$
United States	117	88,512
United Kingdom	22	14,145
Belgium	7	5,081
Canada	22	17,678
Netherlands	10	7,575
Other	3	2,796
Total	181	135,787

Source: Japan's Bureau of Customs.

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EXPORTS OF MARINE PRODUCTS, OCTOBER 1965:

Japan's exports of marine products in October 1965 consisted principally of fresh and frozen fish valued at over $6 million and canned products valued at almost $12 million.

Japan's Exports of Marine Products, October 1965

Product	Quantity	Value
	Metric Tons	US$ 1,000
Fresh & frozen:		
Tuna, skipjack	946	167
Tuna, other	11,814	3,872
Marlin	621	586
Sea bream	251	55
Mackerel	399	67
Saury	386	117
Salmon	31	50
Other fish	3,093	1,255
Total fresh & frozen	17,541	6,169
Cured:		
Cod	5	6
Boiled and dried	56	25
Shark fins	96	158
Other	22	22
Total cured	179	211
Shellfish, etc., frsh., froz., dried:		
Scallops	1	6
Oysters	13	14
Shrimp	169	328
Squid	1,740	519
Octopus (fresh)	41	19
Whale meat	2,219	500
Frog legs	94	161
Other	30	39
Total shellfish, etc.	4,307	1,586
Canned:		
Salmon	2,988	3,945
Tuna, skipjack	1,450	1,175
Tuna, other	2,057	1,933
Mackerel	2,710	969
Saury	65	33
Sardine	55	28
Horse mackerel	422	150
Other fish	1,758	1,306
Crab	487	1,394
Shrimp	121	253
Squid	325	136
Other shellfish	787	647
Total canned	13,225	11,969
Other products:		
Seaweed, Kombu	86	53
Agar agar	32	119
Seaweed, laver 1/	241	6
Whale oil (baleen)	7,300	166

1/In 1,000 sheets.

Japan (Contd.):

(Fisheries Attache, United States Embassy, Tokyo, Feb. 16, 1966.)

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FOREIGN TRADE IN FISH MEAL UP IN 1965:

Japanese foreign trade in fish meal in 1965 was valued at US$18,447,135, of which $16,381,269 were imports, with exports valued at $2,065,866. Japan's imports of meal in 1965 increased 21 percent in value over the previous year. Export values increased from $834,000 in 1964 to $2,065,866 in 1965. The sharp increase in exports is attributed to good demand and high prices in overseas markets.

Table 1 - Japan's Exports of Fish Meal by Country of Destination, 1965

Country of Destination	Qty.	Value
	Metric Tons	US$
Ryukyu Islands	1,245	202,215
Taiwan	2,229	324,839
Hong Kong	355	54,216
South Vietnam	26	3,819
Fed. of Malaya	380	60,210
Singapore	995	151,470
Philippines	6,708	1,053,120
Ceylon	304	53,100
West Germany	600	125,400
Brazil	1	600
So. Africa Republic	210	36,680
Mariana Islands	1	197
Total 1965	13,054	2,065,866
Total 1964	6,202	834,000

Source: Japan Oils and Fats Export and Import Association.

During 1965, the principal suppliers were, in order of importance, Peru, Republic of South Africa, South-West Africa, and the U.S.S.R. Approximately 50 percent of meal imports were supplied by Peru. The most important export market was the Philippines with purchases valued at $1,053,120, or about 50 percent of the total export value. (Fisheries Attache, United States Embassy, Tokyo, March 22, 1966.)

Table 2 - Japan's Imports of Fish Meal by Country of Origin, 1964 and 1965

Country of Origin	1965		1964	
	Quantity	Value	Quantity	Value
	Metric Tons	US$	Metric Tons	US$
Communist China	2,061	328,844	99	15,294
United States	973	133,967	1,429	187,112
U.S.S.R.	6,734	1,007,739	-	-
Argentina	198	22,561	126	12,794
Repub. of So. Africa	32,516	4,753,703	15,741	2,140,052
Peru	57,972	8,221,781	83,474	11,127,675
Australia	-	-	133	12,711
South-West Africa	10,693	1,679,144	711	96,400
Hong Kong	1/	503	-	-
North Korea	504	82,258	-	-
Samoa	-	-	281	42,203
Angola	993	150,769	-	-
Thailand	-	-	30	3,850
New Zealand	-	-	253	25,402
Total	112,644	16,381,269	102,277	13,663,493

1/Quantity not reported.
Source: Japan Oils and Fats Import and Export Association.

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CONTRACTS FOR SALE OF ANTARCTIC WHALE OIL:

Export contracts for a total of 32,000 metric tons of Antarctic whale oil produced by three Japanese whaling companies have been concluded with British, Dutch, and other European companies. The highest price is US$258 a ton for 6,000 tons to the Dutch company (delivery at leading ports in Europe). In all contracts, the price is at least $252, the highest for the past few years. Under the new contracts the average export price (delivery at port to be designated by the buyer) is about $14-20 a ton higher than the average price in 1965. This is attributed to an improvement in the world oil market and the prospects of decreased production due to a cut in the catch quota in Antarctic whaling.

In 1966, Japanese production of Antarctic whale oil is expected to be 5,000 to 6,000 tons below the planned production of 47,000 (40,000 tons being allocated for export). The decrease in production is expected to occur because the three whaling companies put emphasis on the catch of baleen whales rather than fin back whales (from which oil is obtainable in the largest quantity) due to a good demand for whale meat. The Japanese export quantity of whale oil for 1966 is estimated to be 31,000 to 33,000 tons, after deducting 9,000-10,000 tons allocated for domestic use, or less than one-half of the actual export quantity (72,000 tons) in 1965. (Nihon Keizai, Feb. 15, 1966, and The Japan Economic Journal, Feb. 22, 1966.)

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EXPLORATORY FISHING OFF AUSTRALIA:

Australian observers joined the Japanese fisheries vessel Sugura Maru during an exploratory fishing cruise off the southern and western Australian coasts in November 1965.

The Sugura Maru of 350 tons is under charter to the Japanese Fishing Agency. She has a crew of 24 and is equipped with a comprehensive array of fishing gear, including demersal long lines, drift nets, traps, beam trawls, and long lines.

Japan (Contd.):

Bottom long-lining was carried out in varying depths to about 100 fathoms. As much as three miles of line was set at different stations along the coast. Twenty stations were fished in this manner during the voyage.

Whale shark of many species constituted the bulk of the catch. These were headed, gutted, and frozen for eventual processing into fish sausage in Japan.

Small snapper up to 18 inches long, which are frozen whole and served in Japanese restaurants as whole fish, were most sought after, but the snapper fishing was not particularly good--certainly not in commercial quantities.

A trammel net was set for shrimp in 42 fathoms west of Shark Bay. Although the net was badly damaged by shark, two king shrimp were caught. One Australian observer said this could be an indication that the shrimp in Shark Bay, on reaching a certain stage of maturity, migrate to deeper waters on the Continental Shelf.

In Cambridge Gulf, dredging with a modified scallop dredge had poor results. (Australian Fisheries Newsletter, February 1966.)

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WEST AFRICAN TRAWLERS CHANGE FISHING POLICY:

Exports of fish caught by Japanese pelagic trawlers off the coast of West Africa have been decreasing sharply due to the changing business policy of operator fishing firms.

Because of a marked advance of domestic prices of frozen fish caught off the coast of West Africa, Japanese trawlers operating off the African coasts have begun to attach top importance to catching "high-grade" fish for Japanese consumption in preference to "low-grade" fish they used to catch for "spot exports" to coastal African countries, such as Ghana, Nigeria, Liberia, and Sierra Leone, and to European customers, including Italy and Greece.

This trend has become particularly noteworthy since the summer of 1965 especially as regards the "Big 2" fishing firms. Those two companies have reduced the volume of spot exports from catches in West African waters by around 60 percent. As a result, nearly 80 percent of the total catch by their trawlers operating off the West African coasts have been brought back to Japan lately.

Japanese fishing circles ascribed this new tendency to the following reasons:

(1) High-grade fish brought back to Japan are sold on the Japanese market at an average price of 150,000 yen (US$417) a ton. The price has been rising annually by 10 percent.

(2) In contrast, the average export price of low-grade fish bound for coastal countries has remained low, about 60,000 yen ($167) a ton. No price advance in the future is likely due to competition by other fishing countries, such as Poland and the Soviet Union.

(3) Payment by coastal countries for fish purchases is not regular due to foreign currency scarcity. (Japan Economic Journal, Feb. 15, 1966.)

日本

Jordan

FISHERY TRENDS IN 1965 AND OUTLOOK FOR 1966:

No gains were realized in Jordan's underdeveloped fishing industry during 1965, and the outlook for 1966 reveals no plans for increasing production. Nevertheless, it is significant that Jordan acquired 19 kilometers (11.8 miles) of coastline in a land swap with Saudi Arabia, making Jordan's coastline approximately 25 kilometers (15.5 miles) long. This might spur individual fishermen to increase catches in the new coastal waters, but no significant steps have been taken to add to the industry's capacity. The main obstacle seems to be Jordan's inability to secure agreement with Saudi Arabia to allow use of

Jordan (Contd.):

the latter's territorial waters for periods longer than one year. Saudi Arabia continues to supply the major portion of Jordan's fish import needs.

The development potential of Jordan's fishery resources has long been recognized by the Jordan Government. It was given explicit recognition in the new Seven-Year Plan. The Government of Jordan would be interested in receiving suggestions and participation from United States and other interested parties for the improvement and expansion of its fishing industry. The Jordan Government has requested technical assistance from the United Nations Special Fund for its deep-sea fishing project in Aqaba but no response had been received as of March 1966. The Fund had previously provided an advisor to carry out a survey on inland fishing, the results of which should be available during 1966. (United States Embassy, Amman, March 18, 1966.)

Republic of Korea

BUREAU OF FISHERIES ESTABLISHED:

The Republic of Korea will establish a Bureau of Fisheries, stated Korean President Chon Hui Pak in a "State of the Nation" speech to the National Assembly on January 18, 1966. The main functions of the new Bureau will be the enactment of a basic law on fisheries, the improvement of fishing techniques, and the development and expansion of Korean fisheries. (U. S. Embassy, Seoul, January 21, 1966.)

Liberia

ATLANTIC TUNA FISHERIES:

The tuna species found off the Liberian coast include skipjack, yellowfin, big-eyed, and albacore. Fishing areas for all those species are about 20 miles offshore. Skipjack and yellowfin are caught in that area in great abundance. Principal and minor grounds are not known, but it is known that all tuna fishing grounds are offshore. Skipjack and yellowfin are fished all year from Dakar to Luanda on the west African coast.

The principal fishing methods are: (a) skipjack and yellowfin--pole fishing with live bait; (b) yellowfin and big-eyed--long-line fishing with dead bait; (c) yellowfin and skipjack--purse seine.

Types of vessels: (a) 15 Korean long-liners (75 gross tons); (b) 3 Korean long-liners (340 tons); (c) 6 Japanese pole-fishing boats (125 tons); (d) 25 French pole-fishing boats (60 tons); (e) 2 Spanish purse-seiners (80 tons); (f) about 30 long-liners of different nationalities (75 tons).

There is one cold-storage plant which is located near the Free Port. It has a capacity of 1,800 metric tons. There are no plans for expansion. No research is at present being done on tuna in Liberia. (United States Embassy, Monrovia, Feb. 17, 1966.)

Malagasy Republic

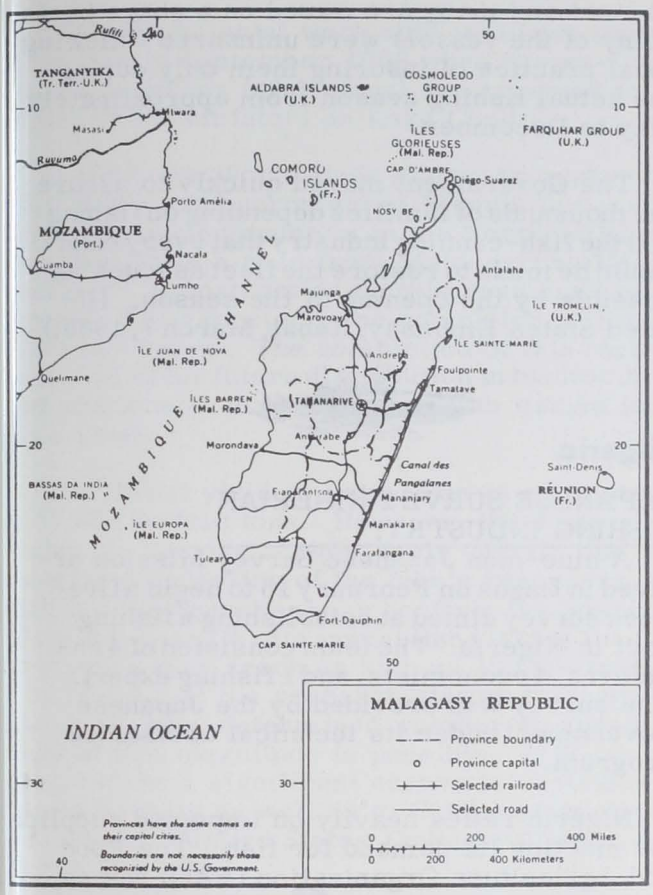
JOINT FISHING VENTURE IN MALAGASY REPUBLIC TO EXPAND:

A major Japanese fishing company has decided to expand operations of a joint shrimp-fishing venture with the Malagasy Republic. Terms having been agreed upon with the Malagasy investors, the Japanese company has applied for a license for the investment from the Japanese government agencies concerned.

Originally capitalized at 27 million yen (US$75,000), the capital of the joint venture is to be increased to 130 million yen ($361,000) by additional participation of the Japanese stockholders and a French-affiliated cold-storage company. The investment ratio will be 51 percent for the Malagasy side and 49 percent for the Japanese side. The management will be composed of 4 persons of the Malagasy side and 3 of the Japanese side, the presidency being filled by the Minister of Agriculture of the Malagasy Republic. The Japanese will be in charge of actual fishing operations, processing, and sales.

The joint venture was established in October 1963 to fish for shrimp in the Straits of Mozambique, off the west coast of Malagasy. The annual catch of shrimp by the expanded concern is projected at about 900 metric tons, valued at 300 million yen

Malagasy Republic (Contd.):

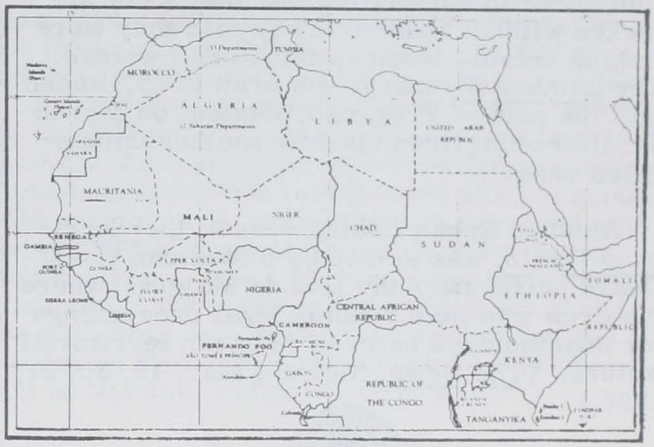


($833,000), to be exported to Japan and the United States. (Nihon Keizai, Feb. 23, 1966.)

Mauritania

NEW COLD-STORAGE AND PROCESSING PLANT:

A new, large, fish-freezing and processing plant began pilot operations in January 1966 in Port Etienne, Mauritania. The plant represents an investment of about US$3 million believed to be entirely private French capital. It is reported to be the largest and most modern fish-freezing and processing plant in western Africa and perhaps in all of Africa, with the possible exception of an operation in Cape Town, South Africa. The plant has a storage capacity of 5,000 tons at -18° C. (0° F.), a freezing capacity of 100 tons a day at -40° C. (-40° F.), and an ice-making capacity of 60 tons a day. The plant operators intend to contract for the purchase of fish from French, Spanish, and Japanese trawlers fishing the reportedly lucrative grounds off the coast of Mauritania.



Processing operations will include: filleting; heading, gutting, and similar operations appropriate to the species; and packaging. The products are to be exported primarily to the European market. It is possible that some products, such as fish blocks, will be suitable for the United States market. (United States Embassy, Nouakchott, Jan. 4, 1966.)

Mexico

FOREIGN FISHING ACTIVITIES OFF MEXICO'S COASTS:

The appearance of large Soviet fishing vessels in the Gulf of California, renewed Soviet fishing in the Gulf of Mexico, and increased fishing by the Japanese is causing concern among Mexican fishermen. The Foreign Ministry explained to reporters that the Soviets are free to fish in the Gulf of California for although the Gulf juts some 700 miles up into Mexico, its waters (save those along the coasts) are international.

In mid-March 1966, the Mexican Ministry of the Navy ordered the Mexican Coast Guard to increase vigilance in coastal waters and particularly along the Yucatan Peninsula. The orders stem from recent poaching incidents and armed encounters in Mexican waters.

On March 17, the Cuban fishing vessel Lambda 17 was reportedly attacked and sunk by an unidentified vessel. The twenty crewmen of the Lambda 17, who were picked up

Mexico (Contd.):

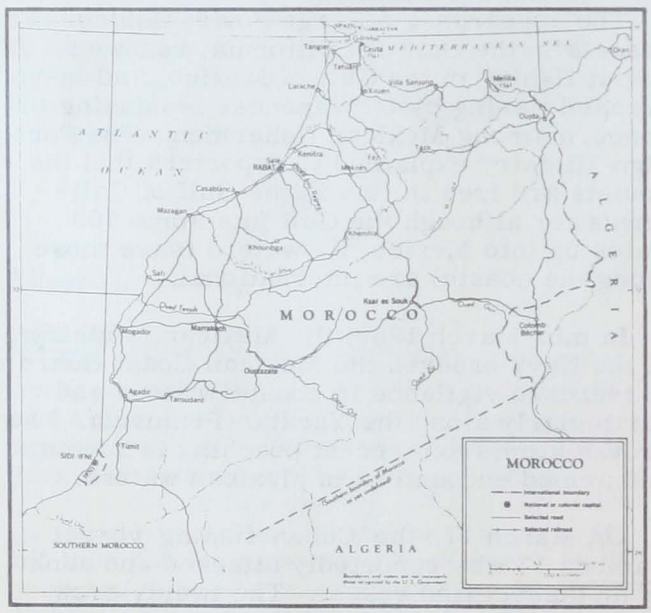
by other Cuban vessels operating in the area, told Mexican authorities that they were attacked without reason. They said they were fishing outside Mexican territorial waters. The Lambda 29, carrying a crew of 13, limped into the port of Progreso, Mexico, on March 16, after being fired upon by another unidentified vessel.

Another Cuban fishing vessel, the Escribano Ro-13, was seized by a Mexican Coast Guard patrol near the Isla de Mujeres, where the crew was held pending legal proceedings for unauthorized entry of Mexican territorial waters. (The News, Mexico, Mar. 19, 20, 21, 1966.)

Morocco

SARDINE FLEET DAMAGED BY STORM:

A severe storm accompanied by high winds and waves struck the Atlantic coast of Morocco the night of February 20-21, 1966. Ports from Tangier south to Agadir suffered damages but the fishing port of Safi was hardest hit. A total of 42, or over a third of the 30- to 60-ton-class sardine vessels in the port, were sunk and 22 were seriously damaged. Another 9 smaller motorized fishing boats were sunk. The only vessels which escaped damage were those in drydock. The disaster is particularly felt since the boat owners customarily own only 1 or 2 vessels at most and many are owned on a share basis. Many of the vessels were uninsured following local practice of insuring them only during the actual fishing season from approximately May to December.



The Government moved quickly to assure the thousands of families depending on fishing and the fish-canning industry that every effort would be made to restore the fleet as much as possible by the opening of the season. (United States Embassy, Rabat, March 7, 1966.)

Nigeria

JAPANESE SURVEY NIGERIAN FISHING INDUSTRY:

A nine-man Japanese Survey Mission arrived in Lagos on February 15 to begin a five-week survey aimed at establishing a fishing port in Nigeria. The team consisted of 4 engineers, 4 economists, and 1 fishing expert. The survey was provided by the Japanese Government under its technical assistance program.

Nigeria relies heavily on imported supplies for meeting its demand for fish. The Food and Agriculture Organization (FAO) has estimated that 75-80 percent of Nigeria's annual consumption of fish comes from imports at a cost in foreign exchange of about US$23.8 million. Norway alone supplied $8.9 million worth of stockfish to Nigeria in 1965. Development of an efficient local industry, therefore, could effect considerable savings in foreign exchange while providing more employment in Nigeria. (United States Embassy, Lagos, Feb. 26, 1966.)

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LAKE CHAD FISHERY DEVELOPMENTS:

In late 1965 the Federal Fisheries Service of Nigeria established a research station at Lake Chad, consisting of a laboratory, workshop, and office quarters for three fresh-water biologists.

The major objectives will be to determine fish stocks, potential, rate of fishing the waters can stand, and conservation measures necessary in order to maintain maximum production.

Nigeria (Contd.):

The experimental work will get under way sometime in September 1966 when two research launches (42 footers) are expected to arrive at Malamfatori on Lake Chad.

In 1965, the World Bank signed an agreement with the Government of Nigeria for extensive road construction in the Northern Region, including a road from Maiduguri to Malamfatori. Construction on this road has begun and it is expected to be completed within about two years. The completion of this road is essential for future distribution in the North and elsewhere in Nigeria for fish caught in Lake Chad.

The annual yield in Lake Chad is estimated at 40,000 metric tons. However, the Federal Fisheries Service, Lagos, feels certain that a systematic testing of the lake's resources with the two launches may confirm the possibility that Lake Chad's annual fish yield in future years may reach as high as 100,000 tons. It is likely that the research station may, by late 1967, have determined whether an annual yield of this magnitude is possible. If so, it should make a significant economic contribution to Nigeria as well as to Chad, Cameroun, and Niger. (United States Embassy, Lagos, March 27, 1966.)

Norway

HERRING FISHERY OPENS WITH HEAVY CATCHES IN EARLY 1966:

The first phase of the 1966 Norwegian winter herring fishery was concluded on February 19, 1966, with a total recorded catch of 1,750,000 hectoliters (255,750 metric tons) with an ex-vessel value of Kr. 80 million (US$11.2 million). More than two-thirds of the catch went to fish meal and oil plants. The 1966 catch was much greater than comparable catches in 1965.

The second phase of the Norwegian winter herring fishery (the period after the herring have started to spawn and quality is consequently lowered) started on February 21. Weather conditions were good and herring were abundant. The total Norwegian winter herring catch could exceed 4.5 million hectoliters (418,500 tons). (United States Embassy, Oslo, February 27, 1966, and other sources.)

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NEW AUTOMATED PURSE SEINERS FOR HERRING FISHERY:

The building of fishing vessels in Norway has been stimulated by good herring catches in 1965 and early 1966. One of Norway's largest shipbuilding firms is said to be building a new type of herring purse seiner costing about US$420,000. The vessel is 125 feet long and has 2 decks, making it possible to maintain stability while taking loads of up to about 465 metric tons. The vessel is equipped with power block, two side propellers for better maneuvering, and a herring pump that sucks fish out of the purse seine. The first of the new herring vessels was scheduled for delivery in February 1966. (The Export Council of Norway, February 1966.)

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CANNED FISH EXPORT TRENDS, JANUARY 1-DECEMBER 25, 1965, WITH COMPARISONS:

In 1965, Norwegian exports of canned brisling were down somewhat from 1964, while exports of small sild and kippered herring were up slightly, according to preliminary data. But in 1965, stocks were down and fishing for small sild was disappointing.

During January 1-December 25, 1965, exports of the principal items in standard cases (100 $\frac{1}{4}$ cans) were as follows (comparable 1964 data in parentheses): brisling 385,000 cases (412,000 cases), small sild 919,000 cases (875,000 cases), and kippered herring 257,000 cases (247,000 cases).

During January 1-October 31, 1965, exports of canned crab were 675 metric tons (665 tons in 1964), and exports of canned shrimp were 375 tons (756 tons in 1964).

The pack of canned brisling during January 1-November 13, 1965, was 389,000 standard cases (about the same as in 1964) and that of small sild was 580,000 standard cases (down 18 percent from 1964).

Stocks of brisling and small sild were short in late 1965. The short 1965 pack of small sild was causing concern. In addition, carryover stocks of canned brisling have gradually been reduced over the last several years by an upward trend in sales.

The United States was the principal market for Norwegian canned fish exports in the first 10 months of 1965 taking 9,190 tons valued at Kr. 52 million (US$7.3 million), a gain

Norway (Contd.):

of 10 percent in quantity and 15 percent in value over the same period of 1964. Other important markets for Norwegian canned fish are Great Britain, continental European countries, South Africa, Canada, and Australia. (Norwegian Canners Export Journal, December 1965 and January 1966.)

Panama

FISHERY DEVELOPMENTS, 1965:

Shrimp Fishery: Unofficial figures show that shrimp exports in Panama for the first nine months of 1965 of about 8 million pounds were below the 9.6 million pounds exported in the same period of 1964. The value of the shrimp catch in 1965 for the first nine months was US$5.7 million as compared to almost $5.3 million in the same period of 1964. A higher percentage of premium-grade shrimp was caught and higher prices were obtained in the U. S. market, accounting for the increase in the value of the catch in 1965. As in the past, the entire shrimp catch was exported to the United States.

Panamanian fishery officials estimated that the total 1965 shrimp catch probably was

Fig. 1 - One of the more modern Panamanian trawlers which has just unloaded a cargo of shrimp at a freezing plant in Panama City.

slightly lower than the average of 12-13 million pounds landed in the last three years and considerably below the 15.5 million pounds taken in 1964. Nonetheless, higher market prices and the high percentage of premium-grade shrimp caught during the year should bring the dollar value of the catch to over $7

Fig. 2 - Three shrimp plants (one off picture to the left) are concentrated in this area of Panama City.

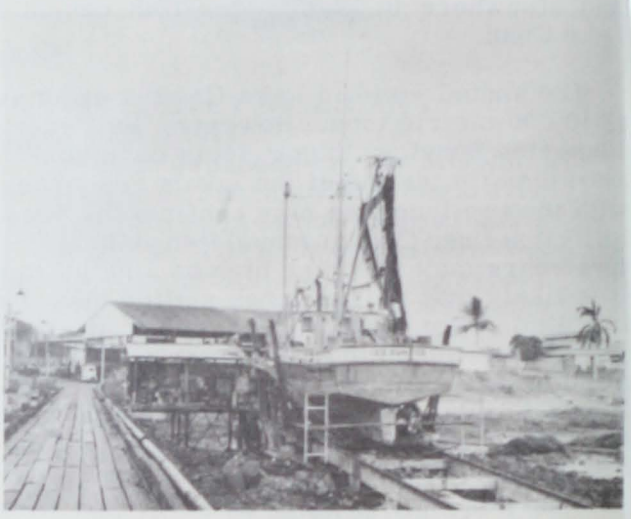

Fig. 3 - This shrimp firm in Panama City has its own fleet, and marine ways for repair of both its own fleet and independent vessels that fish for the plant.

million, although officials of at least one large local shrimp concern believe this estimate may be high in view of reportedly extremely poor fishing conditions in November and December 1965. Government officials predicted that Panama's annual shrimp catch will level out at about 12-13 million pounds per year, pending the development of equipment capable of fishing below 50 fathoms. Practically all shrimp waters inside the 50-fathom line on Panama's Pacific coast currently are being fished. Little is known of the shrimp population out beyond 50 fathoms. Premium-grade white shrimp generally are caught at about the 12-fathom line, while the valuable pinks are fished between 30-45 fathoms. "Titi" and "carabali" usually are caught in shallower waters around river mouths. Estimates of the above types during the next several years will be: whites 4.3 million pounds; pinks 2.5-3.0 million pounds; "titis" 5.0 million pounds and "carabali" 0.6-0.8 million pounds.

Panama (Contd.):

Fig. 4 - Shrimp trawlers docked at the village of Pedregal near David in Chiriqui Province.

Fig. 5 - A basket of shrimp, mostly white, moves on a conveyer belt into the plant at the village of Pedregal. Shrimp are kept on board the vessels in chilled brine which sometimes forms ice.

Concern continues to exist regarding the possible necessity for the establishment of shrimp conservation measures in local waters. While opinion varies, the industry generally believes recent government actions limiting the number of boats authorized to fish for shrimp on the Pacific Coast to 254 will safeguard the current shrimp population. During 1965, it is estimated that between 205-210 vessels actually were operating during most of the year. It is unlikely that the full number authorized actually will fish at any one time because of the necessity for repairs,

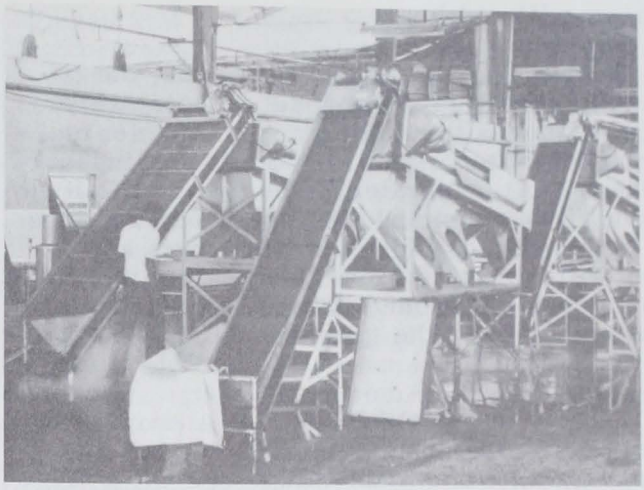

Fig. 6 - Two sorters used to separate the shrimp by size--one for large and the other for "titi"--in a shrimp plant in the Paitilla district of Panama City.

Fig 7 - Removing frozen shrimp from freezers in a Panamanian shrimp plant.

sales of vessels to foreign enterprises, and the failure of some companies to construct vessels authorized for construction.

Fishing conditions were only fair during 1965 and industry spokesmen claim catches during November and December were abnormally low even considering that those months usually are a "slack" period. The same sources report that unusual northerly winds during early 1966 prevented cold water from moving inshore and that shrimp catches consequently remained poor through the first six weeks of the year. Apparently in normal years upwellings of cold water bring increased food for shrimp and improve the quality and quantity of the catch.

Panama (Contd.):

Buoyed up by a record 1964 year, the financial condition of the local industry generally is good with a number of companies making substantial inroads into backlogs of indebtedness built up earlier in the decade. Individual fishermen and boat operators continue to be plagued by high operating costs and spotty fishing conditions, but despite this, money has been found to modernize many of the vessels, and the general status of the fleet is good.

Fish Meal and Oil Industry: A prophesied increase in the production of fish meal and fish oil at the country's single operating fish-reduction plant was realized. Production of fish meal was 6,250 short tons and fish oil production was 1,554 short tons, more than double the production for 1964. Fishing for anchovy and thread herring during 1965 and early in 1966 was excellent (but catch figures were not available); this was undoubtedly a major factor in the increased fish meal and oil production.

Fig. 8 - Panamanian fish meal plant.

An official of the only fish meal company indicated that the firm's fish meal was sold to the United States (2,100 tons), West Germany (1,754 tons), and Central America (925 tons). About 1,500 tons were sold locally. All fish oil exported by the company was sold to West Germany (1,240 tons), with 258 tons consumed locally.

Contrary to earlier expectations, a fish meal plant under construction by Panamanian-Peruvian interests on Taboguilla Island several miles off the Pacific coast near Panama City failed to begin operations during 1965. It was expected that the $2 million plant would be completed and in operation by mid-1966. Three of 10 standard anchovy fishing vessels ordered by the firm from a Peruvian shipyard were in Panamanian waters. Trial runs of at least one of the vessels indicated some difficulty in adapting the large purse seiners to Panama's shallow waters. However, the management of the local firm was confident necessary adjustments could be made and fishing techniques developed to permit optimum use of the boats by the time the Taboguilla plant would be ready to begin operations. The plant will have a capacity of 35-50 tons of fresh fish per hour. Most of the equipment of modern design is already in Panama. A shipyard also will be constructed on the island to repair the company's fleet and to build additional fishing vessels.

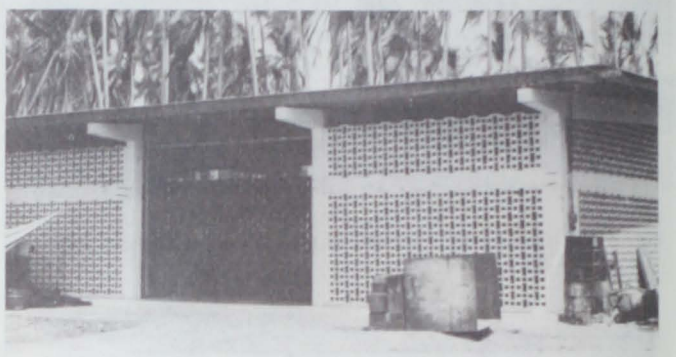

Fig. 9 - Bagged fish meal is stored in this well-ventilated building prior to shipment.

No figures were available regarding the dollar value of the fish meal and oil production for 1965. However, assuming average prices of $150 per ton for fish meal and $180 per ton for fish oil, local production may have had a value of over $900,000 for fish meal and $275,000 for fish oil during the year. Panamanian fish meal, because of its high protein content, is sold at premium prices in world markets. Panama's Bureau of Fisheries estimates that 1966 production of fish meal and fish oil may have a value in excess of $2 million, provided that the Taboguilla plant begins operations by mid-year.

Dr. William Baylif, an employee of the Inter-American Tropical Tuna Commission, prepared an excellent study concerning the anchovy population in waters adjacent to Panama City. Field work was conducted during 1963-1964 and the results were subsequently published by the University of Washington at Seattle as a doctoral dissertation. Among Dr. Baylif's observations was the comment that almost twice the number of anchovy are found in shallow waters east of Panama City compared to areas west of the same city.

Other Developments: Imports of canned fish products (mostly sardines) and dried fish (mostly cod) for domestic consumption during the year remained high and may have exceed-

Panama (Contd.):

ed $2 million in value. Requirements for fresh fish were met by independent fishermen, several small cooperatives, and from fish caught in conjunction with shrimp fishing.

During the year, a Spanish firm conducted a survey of both Pacific and Atlantic coast waters to determine the availability of bottom fish for a canning or frozen fish-packing operation in Panama. It is understood that the results of the survey were not encouraging and that the firm decided against investing in the industry in Panama at this time. The company's vessel, equipped for both echo-sounding and trawling to a depth of 300 fathoms, spent 18 days in Atlantic coast waters and approximately 30 days surveying Pacific coast waters. Apparently no significant potential fishing areas were found on the Atlantic coast. Few areas suitable for trawling were found, due to the high incidence of both rock and coral along the entire Atlantic coast. Results of the Pacific survey by the vessel were not known, but the lack of immediate interest on the part of the company in engaging in fishing operations caused speculation that the results of this survey also were not promising. It is understood that U. S. interests were investigating possibilities for financing a plant to process sardines locally.

A detailed survey of Central American fisheries, including Panama, was approved for financing by the United Nations Special Fund on January 15, 1966. The United Nations Food and Agricultural Organization was to conduct the survey beginning in April 1966, if participating countries make agreed monetary contributions on schedule. A program to provide for the teaching of oceanography at the National University was under study by UNESCO. The abundance of sharks in Panamanian waters could lead to the eventual establishment of a small local shark-fishing industry.

A Decree Law, dated October 14, 1965, prohibiting "fishing for all species of seafood within the territorial waters 12 miles from the coast (in certain specified areas) by fishing boats of ten gross tons or over," was one of two significant pieces of fishery legislation approved during 1965. The above decree law, designed to protect small fishermen and cooperatives, primarily in the El Farrallón area about 70 miles west of Panama City, alleges that in certain areas high-powered fishing vessels with modern equipment made inroads into the catch, and consequently into the incomes, of small fishermen. The law was subject to some criticism on the part of local shrimp companies. The law represented no change in Panama's traditional view that national jurisdiction extends 12 miles into territorial seas for fishing purposes.

A second Decree Law, dated March 12, 1965, was passed ostensibly to induce additional investment in Panamanian fisheries. However, according to some industry spokesmen, provisions of the law restricting the importation of vessels and equipment for use by local companies actually curtailed investment in the local industry. Representations were being made by local shrimp companies to the Ministry of Agriculture, Commerce and Industries for a revision of the law to terms more favorable to their interests. (U. S. Embassy, Panama, March 2, 1966.)

Peru

FISH MEAL PRODUCTION AND ANCHOVY CATCH, JANUARY-FEBRUARY 1966:

Peruvian fish-meal production in January 1966 set an alltime official record of 242,380 metric tons; however, the estimated production for February dropped to 174,905 metric tons.

Based on production figures, it was estimated that anchovy landings for January 1966 were 1.6 million tons and for February were 1.2 million tons. So far this fishing season (October 1, 1965-June 30, 1966), anchovy landings have been estimated at 5 million tons. As the Government of Peru has limited this season's catch to 7 million tons, 2 million tons remain to be caught.

Fish oil production was down as the percentage of "peladilla" (immature fish) was high, reducing the oil recovery as well as producing less fish meal per ton of fish. (United States Embassy, Lima, March 13, 1966.)

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REDUCTION PLANTS BUY NORWEGIAN EQUIPMENT TO PROCESS FISH SOLUBLES:

Some Peruvian fish-reduction plants have ordered supplementary processing equipment

Peru (Contd.):

from a Norwegian firm. The additional equipment consists of steam dryers and other installations making it possible to process fish solubles, a byproduct of fish reduction to meal. At present, only a few Peruvian plants have such equipment. (The Export Council of Norway, February 1966.)

Editor's Note: Apparently cost pressures within the Peruvian industry are leading some processors to maximize efficiency.

Philippine Republic

FISHING INDUSTRY DEVELOPMENTS, 1965:

Summary: The Philippine fishing industry continued throughout 1965 to struggle with many of the same problems which have plagued the industry for a number of years. Although there was an increase in production by marine and inland fishermen, production was still well short of consumption, necessitating a sizable import of canned fish products. Total imports for 1964, the latest year for compiled statistics from the Philippine Fisheries Commission, were 49,400 metric tons, valued at US$14.4 million. This is a sizable cost in the use of scarce foreign exchange which could be avoided if the industry were able to fulfill the country's needs. This could be done, but the industry is plagued by lack of proper refrigeration, canning, icing, and transportation facilities. Despite these problems, however, the marine fishing industry increased production in 1964 by 24 percent to 258,000 metric tons. This was done with only a slight increase in gross registered tonnage of fishing vessels. The previous administration promised aid to the industry but the promises were never fulfilled. Whether the new administration will do otherwise has as yet not been spelled out. One dramatic change occurred in 1964 however, when South Africa's share of the import market dropped from 47.3 percent in 1963 to 10.3 percent in 1964, due to South Africa's apartheid policies.

Production and Consumption: The Philippines in 1964 produced 603,500 metric tons of fishery products, including shell buttons, reptile skins, shells and sponges, valued at US$201.3 million. This was 10.3 percent more in quantity over 1963 when 547,300 tons were produced.

Fig. 1 - Republic of the Philippines.

The Commission of Fisheries divides its statistics on fish production into three categories: Commercial fishing, fish ponds, and municipal fisheries and sustenance fishing. Production, as in previous years, remains short of consumption which was estimated at 643,300 tons, or about 4.6 pounds per capita annually. A figure of 67.3 pounds per capita annually was established in 1964 by the National Research Council of the National Science Development Board as the minimum healthful requirement. Since this would require the availability of 954,200 tons, actual production in 1964 was 36.7 percent short of the requirement.

Imports and Exports: The exports of fish products, as reported in previous years, continues to be insignificant. In 1964, the Philippines exported only 964 tons of fish products valued at about $615,300. This was a slight increase over 1963 in both quantity and value. The bulk of the exports consists of shell buttons, wet-salted fish, capis shells, and whole shells. A fledgling shrimp exporting business, which got under way in 1963,

Philippine Republic (Contd.):

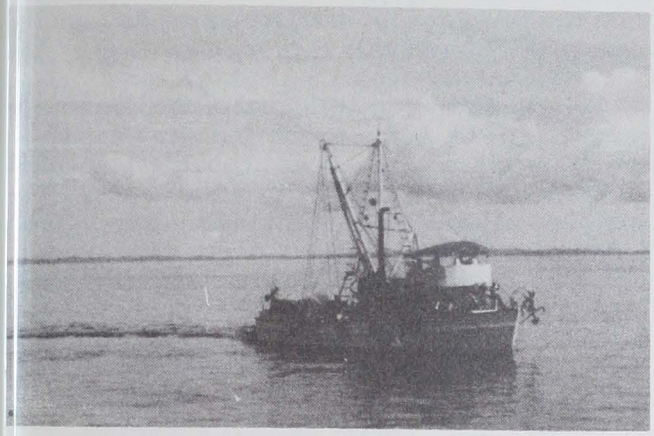


Fig. 2 - Philippine purse-seine vessel, scouting waters off Palauan Island in Sulu Sea searching for schools of mackerel with echo-sounder, approaches mothership.

showed a drop in exports during 1964 when only 52 tons were exported valued at about $57,000. The bulk of exports of all Philippine fishery products went to the United States (including Hawaii), Guam, and Japan.

In 1964, the Philippines imported 49,400 tons of fish products, roughly the same as 1963, when 49,800 tons were imported. The imports for 1964 were valued at $14.4 million and consisted mostly of canned sardines and mackerel.

Since one of the basic staples of the Philippines is canned sardines from South Africa, the government's importing and marketing outlet, the National Marketing Corporation (NAMARCO), as well as private local importers were under considerable fire from critics during 1963 and early 1964 for importing sardines from South Africa. The country belongs to the anti-apartheid block in the United Nations and such imports were considered by many as antithetical to the bloc's call for economic sanctions against South Africa. This criticism apparently had considerable effect because in 1964 imports from South Africa dropped dramatically. Whereas in 1963, South Africa held 47.3 percent of the market with imports of 23,500 tons of fish products (mostly sardines), in 1964 South Africa accounted for only 10.3 percent of the market in quantity and 13.7 percent in value. Imports from South Africa were 5,100 tons valued at about $1.9 million. This dramatic drop was partially covered by slightly increased imports from Japan, the United States, Canada, West Germany, and South Korea, as well as a swing away by consumers

Fig. 3 - Mackerel are lifted by scoop net from purse-seine net and dropped on vessel's deck.

from canned sardines to other canned fish. Japan improved its share of the market by a considerable margin. In 1963, Japan supplied only 33.8 percent of total imports; in 1964, her share jumped to 68.2 percent in quantity and 72.4 percent in value. The totals for 1964 were 33,700 tons valued at about $10.4 million. The U. S. share of the market continued to drop from 5 percent in 1963 to 3.4 percent in 1964.

Inland Fisheries: Municipal fisheries and sustenance fishing shared almost equally with commercial fishing in the total production of 1964. Municipal fisheries produced 282,700 tons valued at about $74.7 million, only slight increases over 1963. Production in another category of inland fishing, fish ponds, was 62,700 tons, virtually the same as the previous year.

Marine Fisheries: Although the marine fishing industry is plagued by lack of refrigeration facilities, transport, and marketing problems, it nevertheless managed to increase its annual production during 1964 by nearly 24 percent to a total of 258,000 tons. This increase was accomplished with only a slight increase in gross registered tonnage from 52,653 tons in 1963 to 55,499 tons in 1964.

Processing and Marketing: The commercial fishing industry, as in previous years, continues to be plagued by many problems: lack of adequate berthing and harbor facilities, lack of canneries, poor to nonexistent refrigeration and transportation facilities, and nonavailability of investment capital and bank financing. The only canning facility, White Rose Packing Corporation, was established in 1964 but is not yet in operation. The Minda-

Philippine Republic (Contd.):

nao Development Authority is building two ice plants, one in Palawan and one in Zamboanga City, but neither are yet in operation.

Fig. 4 - Philippine fishermen from the port of Mariveles take in a nylon trammel fishing net which had been set the night before.

Government Activity: The previous administration pledged to help the industry through various means but virtually nothing was done. While the new President has not spelled out specifics with regard to the fishing industry, he has pledged his administration to a program of economic development which will provide basic food staples to the people. Since fish constitutes one of these staples, attention to the ills of the fishing industry could help provide the needed production to eliminate the costly use of foreign exchange for imports.

Fig. 5 - Type of fish trap used in river estuaries of the Philippines.

It is too early to tell what Government attention will be given to the industry by the new administration. It is probable that some Government help will be extended. The Philippines will probably continue to import a sizable amount of its food needs for some years to come, but it would appear that most of this supply will now come from Japan with a small share distributed among the United States, Canada, South Korea, and West Germany. (United States Embassy, Manila, March 8, 1966.)

Poland

FISHERY TRENDS AND DEVELOPMENTS:

Planned Catch: Poland has ambitious plans for the development of her high-seas fisheries. Marine landings in 1970 will amount to 470,000 metric tons, according to the Polish Central Fisheries Board. This is 20,000 tons more than previously planned, and more than double the 1964 catch of 244,000 metric tons. In 1966, the Poles plan to catch 310,000 tons, about 10 percent more than in 1965 when their landings were estimated at 280,000 tons.

Fishing Areas: In 1965, Polish vessels operated in the following principal distant fishing grounds: the Norwegian Sea, the North Sea, the English Channel and the Banks south and west of Ireland; in the North Atlantic: the Icelandic Banks, the Labrador Sea, the Newfoundland and Nova Scotia Banks, the Georges Bank, and areas along the west African coast (especially off Senegal, in the Gulf of Guinea, and in Walvis Bay). The Baltic is also exploited by Polish fishing vessels--about one-fourth of all marine landings is taken there.

Fishing Fleet: Increased Polish landings will result partly from increased labor productivity, but principally from new additions to the fishing fleet. In 1960, the Polish fishing fleet consisted of 87,600 gross tons; by 1970 the Poles plan to add another 200,000 gross tons of new vessels. From 1960 to 1970, the gross tonnage of the Polish fishing fleet will increase by 228 percent, while the increase in fishery landings will amount to

oland (Contd.):

nly 179 percent. However, the Poles lan to decrease this differential rapidly. uring 1960-1965, tonnage increased by 12 percent and landings only by 84 per-ent (see table 1).

Table 1 - Polish Fishing Fleet and Marine Fishery Landings, 1960, 1966, and 1970

	1960	1966	1970
ing Fleet (gross tons)	87,600	185,000	287,000
ercentage increase over previous year (%)	-	112	55
dings (metric tons)	168,300	310,000	470,000
ercentage increase over previous year (%)	-	84	52

urce: Zjednoczenie Gospodarki Rybnej, Warsaw, 1966.

n the 1966-1970 period, both increases will e more harmonious with fleet tonnage in-reasing by 55 percent and landings by 52 per-ent. This indicates better cost analysis and ore careful planning, as well as greater ef-iciency in the vessels to be built in 1966-970. Most will be capable of processing fish mmediately and storing the processed catch n refrigerated holds for later delivery. It ust not be forgotten, however, that these lans are yet to be confirmed by actual ex-erience.

Fish Processing: Poland has ten major ish-processing plants. Almost all of them anufacture smoked and marinated fish prod-cts; more than half of them also can and roduce special fish meal.

Wholesale (as well as retail) fishery trade organizations exist in 17 major Polish cities. They are serviced by refrigerated trucks or railroad cars often directly from the fishing vessels.

Exports: Polish fishery exports (amounting to over 11,000 metric tons in 1964 or almost double the 6,500 tons exported in 1960) are directed by the Central Board for Fisheries through the intermediary of "Animex" of Warsaw, an export-import firm. Direct exports of fish from vessels are increasing rapidly. According to Polish statistics, exports of marine fish (which in 1960 were nonexistent) increased to 5,600 metric tons in 1964. Most of the exports (frozen whole, frozen fillets, and salted) are delivered by Polish trawlers fishing nearby to West African countries; some frozen cod blocks are transshipped to the United States and Canadian markets via the French St. Pierre et Miquelon fishing base.

Fishing Enterprises: Poland has eight large state-owned and administered fishing firms (see table 2). Only three of them (Dalmor, Odra and Gryf), however, fish on the high seas with large stern factory trawlers and medium side trawlers. The remaining five firms own only small fishing cutters which do not permit distant operations. All Polish fishing enterprises engage in fish meal production (indicating an increasing demand for this product which has so far been satisfied with increasing imports) and own netting

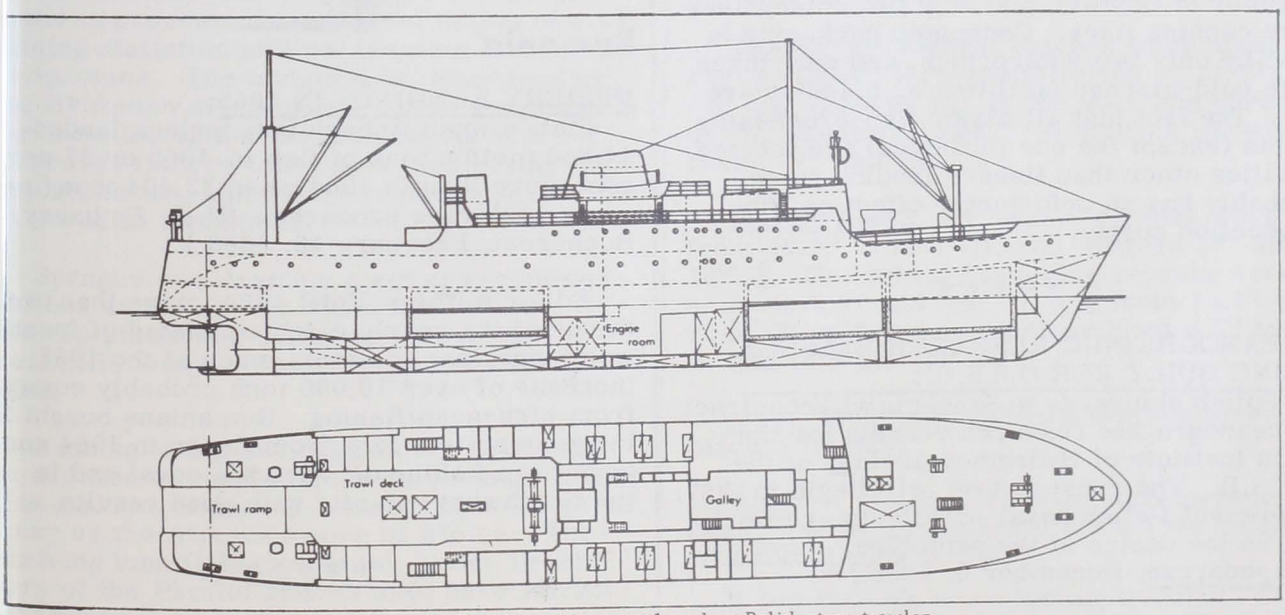


Fig. 1 - Profile and layout of modern Polish stern trawler.

Poland (Contd.):

Table 2 - Polish Fishing Enterprises, 1965

Types of Activity	Fishing Enterprises and Their Locations							
	Dalmor--Gdynia	Odra--Swinoujscie	Gryf--Szczecin	Koga--Hel	Korab--Ustka	Kuter--Darlowo	Barka--Kolobrzeg	Szkuner--Wladyslawowo
Deep-sea fishing	X	X	X					
Processing (on ship and shore)		X						
Initial processing only		X	X	X	X	X	X	X
Refrigeration	X						X	
Ice production	X	X						X
Fish meal production	X	X				X		X
Packaging	X	X						
Repair shops	X	X	X		X	X	X	X
"Siloryb" fish meal production	X	X	X	X	X	X	X	X
Netting and gear shop	X	X	X	X	X	X	X	X
Canning		X	X					
Cold storage	X	X			X			

Source: Zjednoczenie Godpodarki Rybnej, Warsaw, 1966.

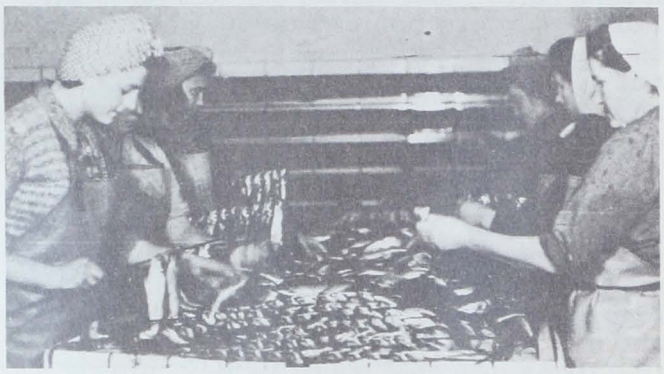


Fig. 2 - Preparing herring for hot-smoking in a Polish fish canning plant in Gdynia.

and gear shops. All of them process fishery landings in some form, but only one enterprise has full-scale end-processing facilities (Dalmor of Gdynia), and only two enterprises have canning lines. Consumer packaging is done by only two enterprises, and only three have cold-storage facilities or manufacture ice. The fact that all major fish-processing plants (except the one in Gdynia) are located in cities other than fishery landing ports probably has an unfortunate effect on final production costs.

* * * * *

OCEANOGRAPHIC RESEARCH VESSELS BEING BUILT FOR U.S.S.R.:

Polish shipyards at Szczecin will construct 9 oceanographic research vessels for the Main Institute of Hydrometeorology of the U.S.S.R. The construction will begin in 1967; at present Polish naval architects are working on the design of the prototype. (Zycie Gospodarcze, December 5, 1965.)

Editor's Note: The new Soviet class of oceanographic research vessels has these specifications: displacement of 3,550 tons, length exceeding 100 meters (328 feet), a crew of 105 (50 scientists and 55 crew members), sea endurance of 90 days. This class will be equipped with the latest electronic instruments and each vessel will have 23 laboratories as well as auxiliary installations and workshops. The vessels will have reinforced hulls and air-conditioning, enabling them thus to conduct research both in polar as well as in tropical marine regions. The range of studies will include hydrology, biology, chemistry, geography, acoustics, and other sciences.

Rumania

FISHERY LANDINGS IN 1965:

State-owned fishery enterprises landed 44,250 metric tons of fish in 1965 or 37 percent more than in 1964 when 32,404 tons (landed weight) were produced. (U. S. Embassy, Bucharest, February 18, 1966.)

Editor's Note: Until 1964, more than two-thirds of the yearly catch consisted of freshwater species; however, much of the 1965 increase of over 10,000 tons probably comes from high-seas fishing. Rumanians bought 2 large stern trawlers from Japan in 1964 and have been fishing off Africa's coast and in the Northwest Atlantic with good results.

* * * * *

Rumania (Contd.):

ACCESSION TO TRIPARTITE FISHERIES COOPERATION AGREEMENT:

Rumania will accede to the tripartite agreement on fisheries cooperation concluded in July 1962 between the U.S.S.R., Poland, and East Germany. Bulgaria joined the agreement in 1964. Administered by a Joint Mixed Commission, the agreement stipulates a close collaboration between the signatory powers in marine fishery research, high-seas fishing operations, and fishery technology. The Commission also forecasts fishing stocks in the Northwest Atlantic and coordinates fishery research there.

Ryukyu Islands

FISHERIES STUDIED BY U. S. EXPERT:

A Honolulu-based expert in fisheries research was asked to assist in the development of Okinawan fisheries research activities. He made a short study in Okinawa in February 1966.

Lucian M. Sprague, Deputy Area Director for Hawaii, Bureau of Commercial Fisheries, U. S. Department of the Interior, made a 2-week visit to Naha, Okinawa, at the invitation of the Civil Administration of the Ryukyu Islands.

His mission was to evaluate and recommend improvements in the collection of tuna fishing statistics and the training of fishery technicians. The technicians, employed by the Ryukyuan municipalities, are responsible for introducing and demonstrating new and improved fishery techniques, collecting fishery statistics, and disseminating information to the local fishermen.

Sprague was drafting a set of recommendations as to how the collection of certain fishery statistics, which are the basis for scientific study of fisheries, can be modernized.

Fishing is big business in the Ryukyus. In addition to supplying the large local fresh-fish market, Okinawan vessels operate as far away as the Atlantic shore of Africa. The thriving tuna fisheries in the Trust Territory of the Pacific Islands also have attracted Okinawan vessels.

Sprague found that despite the apparent prosperity of the Okinawan fleet, it is facing a problem it shares with the Hawaiian fisheries--that of attracting young men to become fishermen. Hawaii's solution has been to establish a State-supported school in Hilo for training young men. In Okinawa, such training is available through a fishery high school.

Senegal

ATLANTIC TUNA FISHERIES:

The principal species of tuna landed in Dakar are the yellowfin, skipjack, and occasionally big-eyed ("Patudo"). Information on the location of principal and minor grounds by species is not available, but the general rule is that the percentage of skipjack increases moving north toward Dakar.

A breakdown of the location of catches by month during the 1964/65 tuna season follows:

November-December: Most catches are made from 15° N. to the Casamance and approximately 17.5° W. Also there were catches off the coast of Portuguese Guinea between 17° and 18° W.

January: Ice vessels made catches off Portuguese Guinea between 17° and 18° W., and freezing boats off Sierra Leone from 14.5° to 15.5° W.

February: Several catches were made around Dakar, between latitudes of 13.5° and 14° and south as far as the southern border of Portuguese Guinea. All catches were between 17° and 18° W.

March-April: Ice vessel catches were from 10.5° to 12.5° N. and between 17° and 18° W. Grounds for freezing vessels were between 7.5° and 9.5° N. and from 14.5° to 16.5° W. with concentrations from 8.5° to 9° N. and 15.5° to 16° W.

May: There were only a few scattered catches in May.

June: A few catches took place between Dakar and St. Louis and a few off the coast of Sierra Leone 15° W.

A few vessels were fishing north of Dakar during the summer months and results were

Senegal (Contd.):

encouraging. This year there seems to be increased fishing in the area of the Cape Verde Islands.

With the exception of 1 or 2 purse seiners that on occasion land at Dakar, all of the tuna vessels use live bait and poles.

In January 1966 there were 32 small ice vessels landing their fish in Dakar although more are expected later in the season. SOSAP (Societe Senegalaise d'Armement et de Peche), the Senegalese Government-owned tuna fishing company, is operating 3 of the 5 freezing vessels of 26 meters (85 feet) built with a French loan. The last 2 were expected shortly. The British Government has recently requested tenders on the 4 tuna vessels they will sell to SOSAP on a long-term loan. (As part of a Soviet-financed tuna complex, there is provision for 15 ice vessels. An agreement of principle was signed with the Soviets in March 1965, but the technical problems have not been resolved and discussions are taking place.)

At one time there had been 7 canneries in Senegal. But, now there are 3 French-owned canneries in operation: 2 in Dakar and 1 in Rufisque, and they have been discussing possibilities of further consolidation. Their total capacity is 120 metric tons a day with 15 percent skipjack. A cannery with a yearly capacity of 15,000 to 20,000 tons is planned as part of the Soviet-financed complex mentioned.

The Dakar ORSTOM (Office de la Recherche Scientifique et Technique Outre-Mer) laboratory, in conjunction with ORSTOM installations in Abidjan and Pointe Noire, is studying population dynamics of the Atlantic tuna. For the last few months ORSTOM has been obtaining catch information but the lack of an oceanographic vessel has prevented extensive research. (United States Embassy, Dakar, January 25, 1966.)

South Africa

GOOD 1966 FISHING SEASON FORECAST:

Bright prospects were forecast for the South African fishing industry for 1966 by the chairman of the South African Fishmeal, Fish Canners and Fish Oil Producer Associations.

Fish Meal: Prices reached a very high level during October and November 1965, but with heavy production in Peru during December and January, prices leveled off; however, the market remained firm in March 1966.

The South African industry was not selling as of that date until it could be established more accurately what the production would be. About 60 percent of the estimated production of fish meal for the year has been sold. A good portion of this has been sold on the high market. The fish meal has been sold to the traditional markets in Europe and the United States.

Fish Oil: The entire 1966 production has been sold to the United Kingdom at about the same price as last year.

The first shipment of oil will be made from Walvis Bay about April 1966.

Canned Fish: Sales were to regular markets with the local market in South Africa showing an increase of about 100 percent over the past few years.

A new market for canned goods is Japan which is taking 150,000 cases in the traditional soya pack. "With fish becoming scarce in their traditional fishing grounds I feel that this will become an important market in the future. We hope to develop this market considerably," the chairman said.

Spiny Lobster: The United States market was very stable and the industry was having no difficulty in disposing of its quota. Mount Vema had come to an end, the last boats returning empty.

The chairman said he saw no difficulty in the factories meeting their quotas this year. After a bad start the fishing in the Republic was improving. (Namib Times, Cape Town, March 4, 1966.)

* * * * *

NEW SPINY LOBSTER PLANT:

A wholly-owned South African company (with French principals and offices in Durban and Cape Town) is behind a move to fish the rich spiny lobster or crayfish grounds in the Indian Ocean off the South African coast, operating from Durban.

Two of the principals behind the enterprise were in Durban to organize the venture follow-

South Africa (Contd.):

ng the arrival of their first vessel from Brit-
any, the La Barade, in early March 1966.

A second vessel, the Frai-Lann, was due
n Durban. One of the men said that addition-
l vessels would be employed if the venture
arranted them.

The company holds a quota of 10,000 car-
ons of spiny lobster for export to Europe.
Namib Times, Cape Town, March 4, 1966.)

* * * * *

EW STERN TRAWLER
ITH SHELTER DECK:

The Dunblane, the third of a series of 75-
t. stern trawlers to be built for a major South
African fishing company, incorporates a num-
er of design changes adopted in the light of
xperience with the earlier vessels Scotia
nd Dunscore which have been fishing suc-
essfully in waters off the Cape of Good Hope.

Most striking of the innovations, which also
eflect an extensive survey of overseas de-
ign trends, is the adoption of an extended
helter deck which provides considerably
nore uncluttered working and storage space
nd a generous measure of weather protection
or the crew.

The net roll is mounted above the after-
eck on a higher-than-usual gantry, arranged
o align with the transom, and this is designed
o simplify the job of hoisting the cod end
board and over the fish bins.

A multipurpose vessel, designed to trawl
or white fish out of Port Nolloth or to fish
or spiny or rock lobster at Vema ridge, the
unblane arrived in Cape Town in December
965 on her delivery voyage. Although it has
o refrigeration, the fish hold is insulated
ith polyurethene foam and the engineroom
rovides ample space for the installation of
a freezing plant. The hold capacity of 3,000
cubic feet is sufficient for about 25 metric
tons of fish, and 7 dinghies (handled by two
derricks) are carried.

Four similar vessels are either already
in service or under construction. One is fish-
ing for shrimp off the Mozambique coast.

The Dunblane has a gross tonnage frac-
tionally less than 100--which means that she
is exempt from the provisions of the South
African Merchant Shipping Act which require
all craft of this size and over to be manned
by a certificated master, first mate, and en-
gineer. Her four-cylinder diesel engine,
driving a variable pitch propeller, develops
280 hp. at 340 r.p.m. and gives the vessel a
speed of 10 knots. Her fuel tanks have a
capacity of 5,810 imperial gallons.

The two derricks are mounted on the shel-
ter deck to handle the dinghies used in lob-
ster fishing. The use of a high-pressure
hydraulic system for this work gives high-
speed operation so that the dinghies can be
hoisted aboard with a minimum of delay if
bad weather should blow up without warning.

With accommodations for a total of 24,
the Dunblane is compactly designed for max-
imum space utilization. Her draft of 8 feet
will allow her to operate from across the
Port Nolloth bar and she has a beam of 21 ft.
and a moulded depth of 10 ft. 6 in.

The shelter deck extends from abaft the
bridge and brings the trawl winch, which is
mounted there, into convenient proximity with
the remote engine controls and other fishing
gear. Bridge equipment includes a transis-
torized echo-sounder, a fish-finder with
black and white lines, a radiotelephone, and
radar.

On trials off Durban the Dunblane dis-
played remarkable maneuverability by making
complete turns, both to starboard and to port,
in a circle of only 100-ft. diameter. From
full ahead, she was brought to a "crash stop"
in 100 ft. Hard a'port to hard a'starboard
was achieved in 20 seconds. (The South Afri-
can Shipping News and Fishing Industry Re-
view, January 1966.)

South-West Africa

BOOM CREATED BY FISHING INDUSTRY:

The port of Walvis Bay in South-West Af-
rica is experiencing a boom due in large part
to various fishing industry developments.

Big developments are being planned in the
white fish industry. The Walvis Bay Town
Council made several sites with sea frontage
available for the construction of fish-proc-
essing and storing factories and one concern

South-West Africa (Contd.):

is believed to be planning to invest over US$4 million in the white fish industry there.

This is being done against the background of no less than 120 vessels of ten foreign countries trawling off the South-West African coast. Using modern fish-finding and processing equipment and the latest trawlers, the main catch is hake. This is cleaned and frozen and then transshipped to reefer vessels for shipment back to the home country.

Next year will see an even bigger buildup of foreign trawlers off the South-West Africa coast. (South African Shipping News and Fishing Industry Review, January 1966.)

* * * * *

COMMISSION TO STUDY STATUS OF FISHING INDUSTRY:

A 3-man Commission of Inquiry has been appointed by the South-West Africa Administration to study the fishing industry. The Commission was expected to start work in February 1966 to inquire into, report, and make recommendations on the systematic, intentional, and effective exploitation of and control over the fish potential of South-West Africa, with regard to the current quotas already granted to industrialists.

It was also to examine the desirability of increasing or reducing the quotas and of granting one or more new licenses either in Walvis Bay or elsewhere along the South-West African coast. Its scope includes incidental matters relating to controlled fish, including spiny or rock lobster and white fish.

The 8 fish meal factories in South-West Africa each have a quota of 90,000 metric tons of pilchards. It has been reported that the Government may grant each plant an interim quota increase of 10,000 tons, bringing the total quota to a record 800,000 tons. (South African Shipping News and Fishing Industry Review, January 1966, and Namib Times, February 4, 1966.)

Taiwan

SMALL INCREASE IN 1965 FISHERY LANDINGS:

Catch: The fishery production of Taiwan in 1965 of 381,688 metric tons was 1.4 percent over the 376,398 tons in 1964.

The only increase was in the deep-sea fisheries and was due mainly to the increase in the number of bull trawlers and their comparatively good average catch. Outer coastal fisheries suffered the first setback since 1948. This may be due to abnormal water temperatures, which resulted in scarcity of such important species as the sardines, bonito, and horse mackerel.

Taiwan's Fishery Production, 1964-1965

	1965	1964	Increase or Decrease from 1964
	. (Metric Tons) .		. . . . (%) . . . . .
Deep sea	135,949	126,765	+7.2
Coastal, outer . .	160,924	161,151	-0.1
Coastal, inner . .	30,655	32,191	-4.8
Fish culture . . .	54,160	56,291	-3.8
Total	381,688	376,398	+1.4

More Tuna Long-Liners in Operation: By January 1966, the last of the 16 tuna long-liners constructed with a loan from the World Bank had left Taiwan to fish in the Indian Ocean. Of the ten 120-ton tuna boats constructed with a loan from the Joint Commission on Rural Reconstruction, two were completed in December 1965 and are now fishing off Mauritius Island in the Indian Ocean.

Outstanding Results Obtained in Fish Pond Fertilization: By the application of superphosfate in fresh-water fish ponds in which the silver carp (Hypophthalmichthys molitrix) was the dominant species, the fish culturist of the Joint Commission on Rural Reconstruction was able to increase the production of fish from 2 to 4 times as compared to ponds using organic manure. This was possible because the silver carp is exclusively a phytoplankton feeder and phosfate increases the production of phytoplankton. (T. P. Chen, Joint Commission on Rural Reconstruction, Taipei, Taiwan.)

* * * * *

SEEKING FURTHER JAPANESE COOPERATION IN FISHERIES:

Both Government and private circles in Taiwan plan to expand pelagic tuna fisheries and to enter the trawler fisheries. They are working on Japanese circles concerned, with the intention to tie-up with Japanese trading firms and fisheries companies in fishing operations and marketing of products.

Taiwan lays special emphasis on tuna in its efforts for the development of the fisheries. It embarked on fishing operations based

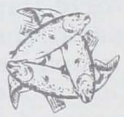
Taiwan (Contd.):

at American Samoa in the Pacific in 1964 and has been endeavoring to expand its pelagic tuna-fishing fleet, mainly for the purpose of increasing its tuna exports to the United States. In 1965, it built 13 tuna-fishing vessels of 357 gross tons in Japan with a loan from the World Bank, and extended its fishing activity to the Indian Ocean. It is determined to develop its fisheries further, and the Government of Taiwan has received another loan from the World Bank of about US$10 million, for the development of fisheries. This loan will be used to build 12 tuna-fishing vessels of 250 gross tons and 4 trawlers of 1,500 gross tons. In addition, used tuna-fishing vessels up to a limit of 4,500 gross tons total will be purchased from Japan in the next year.

These plans will increase considerably Taiwan's tuna fisheries in the Pacific and Indian Oceans. The Government of Taiwan has taken the following steps to aid its tuna fisheries: (1) to permit free fishing so that the production costs of private fisheries enterprises will not increase due to exclusive fisheries rights; (2) to exempt fisheries enterprises from income tax for five years after their establishment. Besides, it is said that the wage level in Taiwan is only one-fifth of that in Japan. Taking these factors into consideration, it was estimated that the production cost of tuna fisheries in Taiwan is about 20 percent lower than that in Japan. Taiwan's decision to embark on pelagic trawler fisheries, together with Korea's plan for entry into this field, will endanger Japan's pelagic fisheries because of limited resources.

In the case of Taiwan, obstacles to the building of self-supporting overseas fisheries are the lack of overseas fishing bases (equipped with cold-storage, materials-supply, and marketing facilities) and the weak export structure. Because of these faults, Taiwan must rely on the fisheries enterprises of Japan, which is more advanced as a fisheries nation, for the use of bases and the conduct of marketing. Heretofore, the tuna-fishing vessels of the fisheries enterprises of Taiwan, have been operating in the Pacific and the Indian Oceans in tie-ups with Japanese trading and fisheries firms based in Samoa, Durban, South Africa, and Penang, Malaysia, in such forms as joint use of bases and commission sales.

The Taiwan side is working with these Japanese firms to increase their joint operations. Some Japanese trading and fisheries firms expect that tie-up with the fisheries enterprises of Taiwan, whose production cost is low, will bring considerable benefits, in view of the worldwide shortage of tuna and the rise in the export prices of tuna. They are planning to send their officials to Taipei for negotiations with the Taiwan side. Among the Japanese trading firms, however, there are those which have business connections with Communist China. They fear that cooperation with Taiwan will adversely affect their future relations with Communist China. Also it is feared that cooperation with Taiwan, which will help the growth of Taiwan's fisheries, may eventually drive Japanese fisheries into greater difficulties. So the Japan Federation of Bonito and Tuna Fisheries Co-operative Unions was scheduled to hold a meeting of its Policy Committee to study measures to counter the development of Taiwan's fisheries and to consider the advantages and disadvantages of cooperation with fisheries enterprises of Taiwan. (Nihon Keizai, March 17, 1966.)



Thailand

FISHERIES LEGISLATION FAVORS DOMESTIC FISHERMEN:

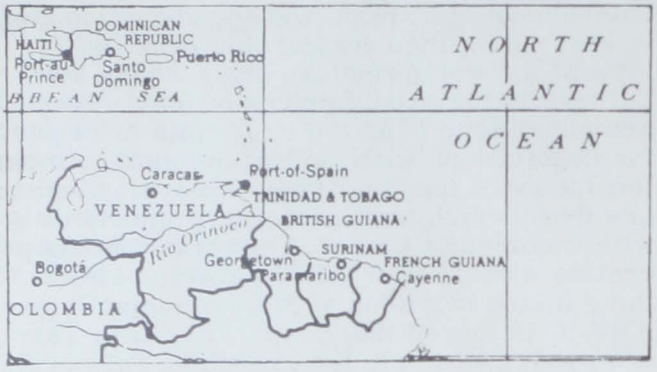
Thai legislation on fisheries indicates the Government's desire to reserve the fishing industry, including the ownership and operation of fishing vessels, for the exploitation of its citizens. Most enterprises fishing in Thai waters or delivering their catches to Thai ports will have to be joint-venture enterprises or may have to be operated under a contract with Thai owners of fishing vessels. (United States Embassy, Bangkok, December 15, 1965.)

Trinidad

FOREIGN VESSEL ACTIVITY:

In March 1966, about 18 U. S. shrimp trawlers were operating out of Port-of-Spain, Trinidad, and a local shrimp-processing plant had begun operations. Additional U. S. shrimp trawlers were expected to arrive. Meanwhile, use of Trinidad as a transshipping base by the Japanese tuna fleet had decreased substantially as a result of declining

Trinidad (Contd.):



tuna catches. (United States Embassy, Port-of-Spain, March 8, 1966.)

U.S.S.R.

EXPORTS OF FISHERY PRODUCTS TO WESTERN NATIONS:

In 1964, the free-world imports of edible fish and shellfish preparations from Sino-Soviet Bloc countries amounted to $67.1 million, or about 65 percent more than in 1963 when such imports amounted to $42.0 million (not included are fish meal, fish oils, whale products, and other nonedible fishery products). As in previous years, Communist China was the largest single exporter of edible fishery products to free-world countries ($37.7 million in 1964 and $21.0 million in 1963), followed by the Soviet Union ($23.7 million in 1964 and $16.3 million in 1963). Among other Sino-Soviet Bloc countries, Poland exported in 1964 $3.0 million and North Korea $0.8 million; exports from the remaining countries were negligible.

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PROMOTION OF EXPORTS TO WEST EUROPE:

Soviet Ministries of Fisheries and Foreign Trade will jointly organize a promotional campaign in Western Europe in March and April 1966. A 3,500-gross-ton refrigerated fish transport, the Svetlii, will be placed at the disposition of the organizers and will be equipped with exhibits and samples of Soviet fishery products. Preliminary plans provide for stops in the Netherlands, Belgium, Federal Republic of Germany, United Kingdom, France, Italy, and Greece. This is the first time the Soviets have organized a fishery promotion campaign in Western Europe or elsewhere. Both the European and the Far Eastern Fishery Administrations will participate in the campaign with their specialized products.

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ESTABLISHMENT OF FOREIGN TRADE SECTIONS:

Foreign trade sections are being organized in the five Soviet Regional Fishery Administrations. In 1965, the Western Fisheries Administration organized such a section at Kaliningrad and the result was greatly expanded fishery exports to African countries. Nigeria, which in 1963 and 1964 bought 3,100 and 9,700 metric tons, respectively, of fishery products from the Soviet Union, plans to increase such imports to 36,000 tons in 1966 (data for 1965 not yet available). A Foreign Trade Department was also organized at Vladivostok in 1964 to promote fishery exports to Japan and other nearby Asian countries.

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FISHERY EXPORTS TO THE U. S. DOUBLE IN 1965:

In 1965, exports of Soviet fishery products to the United States amounted to $505,000 (see table) or more than double the value of 1964 exports of $215,000. Despite this increase, U.S.S.R. products represent only a small part of total U. S. imports, which in 1964 exceeded $490 million. Lobsters imported from the U.S.S.R. for the first time in recent years, were the largest item by value ($183,000) and scallops by quantity (647,164 lbs.). Cod blocks ($56,000) and shrimp ($10,000) were also imported by the United States for the first time from the Soviet Union. The remaining Soviet exports (canned king crab, sturgeon roe, canned salmon) are

U. S. Imports of Soviet Fishery Products, 1964-65 1/

Product	1965 Value	1965 Quantity	1965 Average Price Per Lb.	1964 Value
	US$	Lbs.	US¢	US$
Lobsters	183,270	250,520	73.2	-
Scallops	157,279	647,164	24.3	141,467
Cod blocks	55,980	283,500	19.7	-
Crabmeat, canned	52,860	53,762	98.3	35,898
Sturgeon roe	43,575	6,683	65.2	30,279
Shrimp	9,964	33,085	30.1	-
Fish, canned	1,714	2,831	60.5	2,260
Salmon, frsh. or froz.	644	2,258	29.4	-
Other	-	-	-	4,799
Total	505,286	1,279,803	39.5	214,703

1/Preliminary data supplied by the Branch of Statistics, Bureau of Commercial Fisheries, U. S. Department of the Interior.

U.S.S.R. (Contd.):

Traditional United States fishery imports from the U.S.S.R.

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PRODUCTION OF CANNED KING CRAB FROM EASTERN BERING SEA:

Soviet king crab catches in the eastern Bering Sea decreased considerably in 1965 after the U. S.-U.S.S.R. agreement on king crab fishing in early 1965. In 1964, the Soviets fished in the eastern Bering Sea from April-July using 3 king crab factoryship fleets consisting of 9 net-setting medium trawlers and 33 pick-up boats. With this fleet of 45 king crab fishing vessels, the Soviets landed 2.8 million male crabs and produced about 72,100 cases (96 8-oz. cans) of canned crab. In 1965, the same number of vessels operating from April to June caught 2.2 million crabs but produced only about 45,000 cases, a decrease of 37.6 percent and an indication that smaller crabs were landed.

Soviet Fishing for King Crab in the Eastern Bering Sea (Bristol Bay), 1959-1965

Year	Months Fished	Number of Vessels				Tangle Nets Set 3/	Average Time for Set	Male King Crabs	Canned Pack
		Factoryships	SRT Medium Trawlers 1/	Motor Boats 2/	Total				
							Hours	No.	No. of Cases
1965	April-June	3	9	33	45	618,689	132.5	2,225,567	45,010
1964	April-July	3	9	33	45	607,459	136.6	2,799,620	72,104
1963	April-July	3	6	33	42	536,139	162.1	3,019,417	76,369
1962	April-July	2	6	22	30	419,667	110.5	3,019,211	72,160
1961	April-July	2	6	21	29	387,976	128.1	3,441,314	73,154
1960	April-July	1	3	10	14	191,559	94.0	1,995,006	37,722
1959	July-Sept.	1	-	8	9	63,950	95.0	620,406	7,961
Total						2,825,439		17,120,541	384,480

1/Crew of 22, of which 10 are king crab fishermen.
2/Crew of 12, of which 10 are king crab fishermen.
3/In units; length of unit not specified.
Source: Ministry of Fisheries, U.S.S.R.

Editor's Note: In 1965, the Soviets ended crab fishing in the eastern Bering Sea 1 month earlier than in previous years, probably to fish in other parts of the Bering Sea for saury, pollock, and other species. Despite the effort, the Soviet Far Eastern crab fleet failed to meet its yearly production quota in 1965, although it did fulfill its 7-year plan (1959-1965).

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BERING SEA SHRIMP CATCH PLANS, 1966:

The Soviet 1966 catch quota for Bering Sea shrimp was set at 6,000 metric tons (13.2 million pounds). Most of it will be taken off Alaska where about 10 Soviet medium freezer trawlers operated early in 1966 between Shumagin and Kodiak Islands.

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EXPLOITATION OF ALASKA POLLOCK INCREASED:

Soviets sell Alaska pollock to the Japanese on the fishing grounds in the Sea of Okhotsk. Over 100 Soviet seiners and trawlers from the Kamchatka, Sakhalin, and Primorskii Krai Regional Fishery Administrations participated in early February 1966 in that pollock fishery.

In 1964, the U.S.S.R. reported landings of 213,600 metric tons of pollock. In 1966, the Soviets plan to catch over 300,000 tons by late spring when fishing will be discontinued. In addition to direct deliveries (47,500 metric tons in 1966) to a Japanese fish-meal factoryship, Soviets export pollock to other Asian countries.

Most of the Soviet domestic pollock landings are reduced into fish meal, but vitaminized medicinal fish oil is also produced.

In March 1966, the U.S.S.R. sold 5,000 metric tons of frozen whole pollock to a Finnish importer for fur-animal feeding. The price was 4.6 U. S. cents a pound c.i.f. Finnish border; fish were shipped to Finland by rail from Vladivostok.

Note: See Commercial Fisheries Review, March 1966 p. 58.

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MEAT PRODUCTION GOAL LAGS BEHIND THAT OF FISHERY PRODUCTS:

Soviet fisheries production for the 7-Year Plan (1959-1965) has surpassed all expectations while Soviet meat production lags be-

U.S.S.R. (Contd.):

U.S.S.R.'s Planned and Actual Landings of Fish, Shellfish, and Marine Mammals, 1950 and 1959-1965

Year	Planned Production		Actual Production	
	Quantity	Increase Over Previous Calendar Year	Quantity	Increase or Decrease Over Previous Calendar Year
	Metric Tons	%	Metric Tons	%
1965	5,600	14.3	5,650	+10.0
1964	4,900	16.1	5,121	+ 9.6
1963	4,220	7.2	4,670	+12.1
1962	3,937	6.4	4,167	+11.9
1961	3,700	9.5	3,724	+ 5.2
1960	3,380	1/	3,541	+15.2
1959	1/	1/	3,075	+ 4.7
1950	1/	1/	1,755	-10.1

1/Not available.

hind original goals. In 1959, the U.S.S.R. goal for 1965 was a catch of 4.6 million metric tons (live weight) of fish, shellfish, marine mammals, and other aquatic products; the actual production in 1965 was 5.6 million tons, or 22 percent more than expected. In 1959, the Plan's goal was 16 million metric tons of meat output (slaughter weight) by 1965; the actual production of meat in 1965 was only 9.6 million tons, or 40 percent less than expected. This points up the reliance the Soviets are putting on food from the sea to provide the country's protein needs.

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FISHING OFF GREENLAND TO EXPAND:

Soviets plan to expand fishing off west and east Greenland in 1966. Analysis of Soviet explorations show large concentrations of fish in that area. Most of the exploratory fishing was conducted by PINRO (Polar Institute of Marine Fisheries and Oceanography) scientists from Murmansk. It is believed that a majority of fishing vessels operating in the new fishing area will come from the Northern Fisheries Administration, Murmansk.

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PURSE SEINE FOR HERRING IN NORTH ATLANTIC:

The Soviet large stern trawler Aist, using a special hydro-locator, has been fishing North Atlantic herring with a purse seine 650 meters (2,132 feet) long and 130 meters (426 feet) deep. In three months (latter part of 1965 and early 1966), the Aist set the seine 41 times and landed 550 metric tons of herring, or an average of about 13 tons per haul. To speed up the setting and hauling of the net, lead weights and detachable bronze rings were added to it. The Soviets estimate that the adoption of purse seines in their herring fishery might save them 60 percent in gear costs and at the same time increase landings. (World Fishing, February 1966.)

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HAKE FISHING IN EASTERN PACIFIC:

The Soviets have begun hake fishing in the Eastern Pacific with an undetermined number of vessels. Large concentrations of Pacific hake were discovered by Soviet exploratory vessels in the eastern part of the Pacific; the date of discovery was not specified, but was probably in early 1966. Meanwhile, several Soviet vessels reportedly fished hake in the "Eastern Pacific" in February 1966. Official Soviet catch plans for 1966 provide for at least 30,000 metric tons (65 million pounds) of hake.

The Soviet Union had in the first quarter of 1966, three major research expeditions in the Pacific, each consisting of 5-6 research vessels. Two of the research fleets are operating in the eastern Pacific; one near the Gulf of California (off Mexico), the other in an undetermined location off South America. The third one was conducting research off Australia's southern coast and in the Indian Ocean.

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RESEARCH IN THE INDIAN OCEAN:

The Soviet fishery research vessel Akademik Knipovich called at the port of Rangoon, Burma, in February 1966. The ship is on a research cruise in the Indian Ocean. A party of 30 scientists headed by Prof. A. S. Bogdanov, the Director of the Federal Scientific Research Instiutute for Fisheries and Oceanography (VNIRO), is conducting fishery and oceanographic research in the area. At Rangoon, four Burmese scientists joined the Soviet scientific party for a 10-day joint study of fishery resources in waters off Burma's coast.

Editor's Note: The visit of the Soviet research vessel coincided with the opening of the U.S.S.R. Trade and Industrial Exhibition, which opened in Rangoon in March 1966 and which represents a combined propaganda and trade promotion effort by the U.S.S.R.

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J.S.S.R. (Contd.):

ULTURES SHRIMP SUCCESSFULLY:

The Soviet Institute of Marine Fisheries nd Oceanography (VNIRO) is cultivating hrimp in the water reservoirs of peat-fired ower stations. Previous attempts to breed resh-water Far Eastern shrimp in reser- oirs failed. The problem was solved when hrimp were accidentally introduced into the eservoir of a power station together with ish fry. The even temperature of 35° C. (95° F.), and the soft-peat water provided an xcellent medium in which shrimp could breed. n a few years, the number of shrimp has reached several hundred thousand in one res- ervoir alone. (World Fishing, February 1966.)

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SHARK FISHERY:

Soviets fish for sharks in the Sea of Japan, exporting shark fins to Japan and producing fish meal and fish oil from shark meat for domestic markets. The shark fishery is a relatively new enterprise for Soviet fishermen; in 1964 they caught only 100 metric tons of sharks. The shark fishery is organized by the Far Eastern Fishery Administration with headquarters at Vladivostok.

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NEW LAW BANS DOLPHIN HUNTING:

The Soviet Union has a new law that bans commercial hunting of dolphins, which in the U.S.S.R. is practiced mainly in the Black Sea. The Soviet Fisheries Minister in announcing the new conservation measures, stated that they were necessary because of the increasing importance of dolphins for scientific research and proposed that other dolphin-hunting nations institute similar bans. (United States Embassy, Moscow, March 15, 1966.)

Editor's Note: According to FAO statistics, the total reported world harvest of dolphins in 1963 did not exceed 1,000 metric tons. Turkey was the major dolphin-hunting nation that year (400 tons).

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OCEANOGRAPHIC RESEARCH IN THE CARIBBEAN SEA:

In March 1966, the oceanographic research vessel Iu. M. Shokalskii conducted oceanographic and fishery studies in the Caribbean. In 1965, the same vessel, along with Uliana Gromova and Zhemchug, participated in the Soviet studies of the Kuroshio Current, headed by Prof. A. Muromtsev and sponsored by the Intergovernmental Oceanographic Commission.

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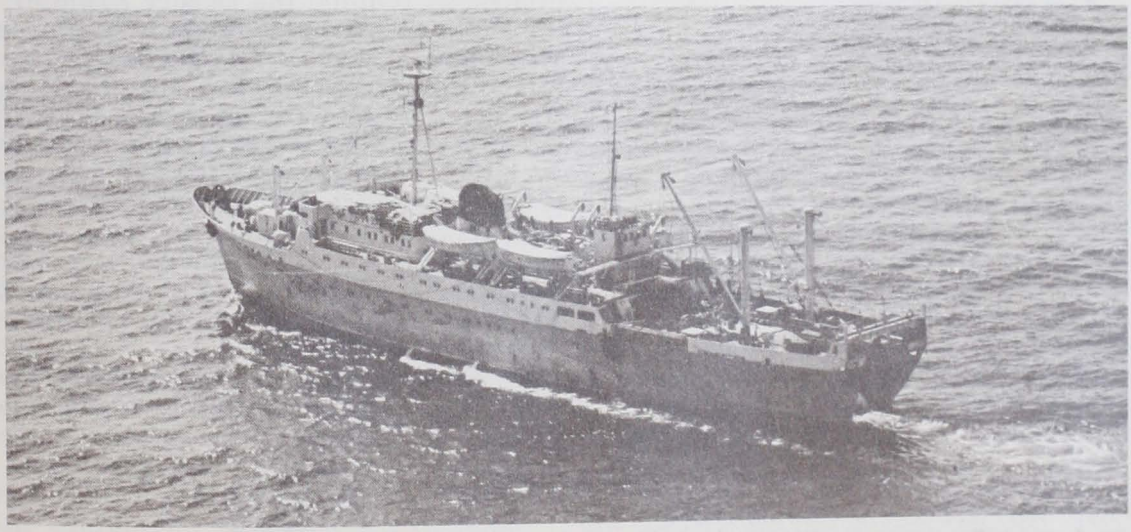
PACIFIC FISHING FLEET INCREASING:

In March 1966, the Soviet Far Eastern Fisheries Administration acquired the 35th large stern trawler (named Seroglazka).



Soviet large stern trawler Pechenga (BMRT-364), belonging to the Maiakovskii class of stern trawlers, fishes ocean perch in the North Pacific. Maiakovskii-class stern trawlers have a cruising range of 17,000 miles and can stay at sea 80 days. The vessels are about 3,200 gross tons and operate with a crew of 90-100. These trawlers are good producers: in 1964, one of them (Nikolai Ostrovskii) landed over 15,000 metric tons of fish and established a Soviet record for this type of vessel. As a result, the captain was appointed delegate to the 23rd Congress of the Soviet Communist Party held in Moscow in March-April 1966.

U.S.S.R. (Contd.):

This is remarkable progress when one recalls that in 1959 the U.S.S.R. had only 1 large stern trawler operating in the Pacific Ocean and the Bering Sea. During 1960-1963 a total of over 20 Maiakovskii-class stern trawlers were added; most of the 1964-65 additions belonged to the same class. The rate of yearly additions has increased since 1960 and will continue to do so until at least 1970; by then the Soviet Union plans to add several dozen new BMRT's to its Pacific fishing fleet and increase fishery landings to 3.2 million metric tons.

Editor's Note: In 1965, Soviet fishery landings from the Far East (including Antarctic whale catches) amounted to 1,970,000 metric tons.

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REFRIGERATOR FLEET:

Soviet Far Eastern Fisheries Administration revealed that a total of about 100 refrigerated fish carriers and other fish transports were in service as of January 1, 1966, in the Pacific Ocean and Bering Sea. In January 1959 less than 50 fish transports were available in the Far East. The total number of Soviet fishing carriers at the end of 1964 exceeded 300 units.

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FAR EAST FISHING FLEET RECEIVES NEW VESSELS:

The Soviet fishing fleet in the Far East early in 1966 obtained two large new vessels: one, the refrigerated fish carrier Vologda (6,500 gross tons) was built in Soviet shipyards; the other, the Spassk (18,000 gross tons) was purchased in Japan for a reported US$7.5 million. The Spassk is the first of eight fish factoryships ordered by the Soviets in Japan for a total price of US$60.4 million and the following payment terms: 30 percent down, the balance payable in semiannual installments over 5½ years at an interest of 4 percent per annum.

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NEW REPAIR SHIPYARD AT KLAJPEDA:

The Soviet Government has approved plans for the construction of a large fishing vessel repair shipyard at Klajpeda (Lithuania) on the Baltic. More than 10,000 workers will be employed. Six floating drydocks (the largest with a capacity of 27,000 displacement tons) will make possible the overhaul and repairs of up to 120 large stern factory trawlers, fishing bases, and processing refrigerator vessels per year. Klajpeda was selected because the sea there does not freeze in the winter and because of its proximity to the Atlantic, where most of the vessels from the Western (Baltic) Fisheries Administration will fish. The construction of the repair shipyard reportedly will start in 1967 and should be finished by the end of the 5-Year Plan in 1970.

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FINNISH FISHING BASES ON SOVIET ISLANDS:

An agreement has been reached between the Soviet Union and the Finnish Seaman's Union on the establishment of two bunkering and supply depots for the Finnish fishing fleet on two Soviet Islands in the Baltic Sea. It is believed that two Estonian Islands (Hiiuma and Saaremaa) are the sites of the new bases. (United States Embassy, Helsinki, February 26, 1966.)

United Arab Republic

FISHERY PLANS, 1966-1970:

United Arab Republic (U.A.R.) will enter high-seas fishing, the Deputy Premier told the U.A.R. National Assembly in a speech on February 12, 1966. The second 5-Year Plan (1966-1970) includes, in addition to projects for developing inland fisheries, building new harbors for the marine fishing fleet and forming 10 cooperative fishermen's associations to promote the marketing of fishery products. Also includes the purchase of high-seas fishing vessels from the Soviet Union. A mission of experts was sent to the Soviet Union to effect the purchases. The type of vessels to be purchased was not announced; it is likely they will be large stern trawlers which the U.S.S.R. recently began exporting to Greece.

United Kingdom

MAY JOIN OTHER COUNTRIES IN FISHING SOUTH AFRICAN HAKE:

Britain's interest in the South African hake fishery was given new emphasis by the British White Fish Authority (WFA) in late February 1966. WFA reported it was working with South African scientists to assess the long-term prospects of the southern groundfish resource. WFA said: ". . . it is essential to look for alternative stocks for British vessels . . . ." Britain fears its traditional fishing grounds may be depleted by foreign fleets. Ironically, South Africa has exactly the same fears about its fishery resources and has declared a 12-mile fishing limit.

In late 1965, about 100 foreign fishing vessels were fishing groundfish off South Africa. Spain and the U.S.S.R. each had about 40 vessels there and at least 8 other countries had vessels in the area. The foreign vessels were fishing fairly close to shore, but beyond South Africa's declared 12-mile fishing limits. In an editorial proposing international regulation of the southern groundfish resource, Fishing News International said: "While these are still the early, turbulent days of long-range fishing, they are already showing that reluctant 'hosts' will get nowhere by standing on the cliff tops and shouting at the factoryships and freezer trawlers on the horizon." (Various sources.)

Venezuela

NEW RESEARCH VESSEL "LA SALLE" DELIVERED FROM NORWAY:

The 130-foot oceanographic and fisheries research vessel La Salle was delivered in late 1965 by a Norwegian shipyard to the La Salle Foundation of Natural Sciences in Caracas, Venezuela.

The vessel is equipped with laboratories for marine biology and oceanography. The laboratories are specially insulated against sound and vibration. The vessel carries 20 Nansen bottles, electronic fish-detecting and charting equipment, hydraulic winches for scientific instruments, and gear for both stern trawling, purse-seining, and long-line fishing. Facilities for holding fish alive, a freezing room of 700 cubic feet, and a refrigerated fish hold of 5,100 cubic feet, are also provided on the vessel.

Specifications of the La Salle are length 130 feet, breadth 31 feet, depth 13½ feet, deadweight about 300 tons, and main diesel engine 800 brake horsepower giving a cruising speed of 11.5 knots. The vessel has accommodations for 20 men.

New Venezuelan fisheries research vessel La Salle.

During the first 6 months of operation, the La Salle will have a complete Norwegian crew, and the Norwegian officers will stay on board for a year.

The cost of the vessel was about US$550,000. (The Export Council of Norway, December 1965.)

Yugoslavia

FISH MEAL IMPORTS:

In the first half of 1965, Yugoslavia imported over 17,000 metric tons of fish meal, almost all of it from Peru. (U. S. Embassy, Belgrade, March 1966.) Comparative data for Yugoslavian fish imports in 1963 and 1964 are given in the table below:

Yugoslavian Fish Meal Imports, by Country of Origin

Country	First Half of 1965	1964	1963
	(Metric Tons)		
United States	0	0	4,000
Peru	17,019	33,769	19,307
Italy	16	0	0
Total	17,035	33,769	23,387

Foreign Fishing Off United States Coasts, March 1966

OFF ALASKA:

Soviet: The number of Soviet fishing vessels off Alaska increased slightly during March. Early in April about 200 Soviet vessels were fishing off Alaska as compared to about 150 vessels in early March. This is about the same as last year at that time.

The Gulf of Alaska remained the center of Soviet fishing efforts with well over 100 medium and large trawlers and support vessels in the Pacific ocean perch fishery.

During March, two ocean perch fleets of about 35 vessels each operated on the Portlock Bank (east of Kodiak Island) and on the Continental Shelf off Yakutat. A third fleet of about 30 vessels was dispersed along the 100-fathom curve from Cape Spencer to Dixon Entrance (off southern Central Alaska).

Fig. 1 - A Soviet trawler fishing in the Bering Sea.

Towards the end of March there was a shift away from the Yakutat grounds: some vessels joined the Portlock Bank fleet; others went north for the Bristol Bay flounder fishery. In early April no more than 20 vessels remained off Yakutat. During the first 3 months of 1966, the Soviet fishing fleets caught over 30,000 metric tons of Pacific ocean perch in the Gulf of Alaska.

The Soviet shrimp fleet in the Gulf of Alaska consisted of 14 medium refrigerated trawlers (class SRTM) operating on the shrimp grounds near Shumagin Islands. The fleet was supported by one refrigerated carrier. During the first three months of 1966, this fleet caught over 4,000 metric tons of shrimp, 30 percent above the January-March production quota. If the Soviets continue fishing for shrimp with such good results, they will soon exceed their 6,000-ton quota for 1966.

Fig. 2 - Soviet medium trawler alongside refrigerated vessel in eastern Bering Sea. Note deck arrangement and fishing gear on trawler.

The flounder fishery this year began in late February when the Soviets shifted their herring fishing effort in the Central Bering Sea to the flounder fishery because their exploratory vessels were unable to locate sufficient herring. By early March about 30-40 vessels fished for flounder north of the Unimak Island on the Continental Shelf in 40-50 fathoms. By early April, this fleet doubled and reported good catches. Flounder is frozen and taken back to the Siberian Mainland, where half is sold as landed and the other half canned.

At least three large crab factory vessels departed Vladivostok the last week of March. This indicated that Soviet king crab fishing in Bristol Bay began about the same time as in previous years. Soviet king crab catches in the east Bering Sea decreased considerably in 1965 after the U.S.-U.S.S.R. agreement on king crab fishing early 1965. In 1964 the Soviets fished in Eastern Bering Sea from April-July using 3 king crab factoryships, 9 net-setting medium trawlers, and 33 pick-up boats. With this fleet of 45 king crab fishing vessels, the Soviets landed 2.8 million male crabs and produced about 72,000 cases of canned crab. In 1965, the same number of vessels operating from April to June caught 2.2 million crabs but produced only about 45,000 cases, a decrease of 37.6 percent and an indication that smaller crabs were landed. In 1965, the Soviets ended crab fishing in the

Eastern Bering 1 month earlier than in previous years, probably to fish in other parts of the Bering sea for saury, pollock, and other species. Despite the effort, the Soviet Far Eastern crab fleet failed to meet its yearly production quota in 1965.

Japanese: At the end of March about 60 Japanese fishing vessels were operating off Alaska. Three Japanese factoryships were in the Bering Sea, presumably for Alaska pollock. One factoryship, accompanied by 11 trawlers, was located about 100 miles west of the Pribilof Islands. The second factoryship, with six trawlers, continued operations about 50 miles north of Unalaska Island. The remaining factoryship, accompanied by about 30 trawlers, fished about 150 miles west of Port Moller.

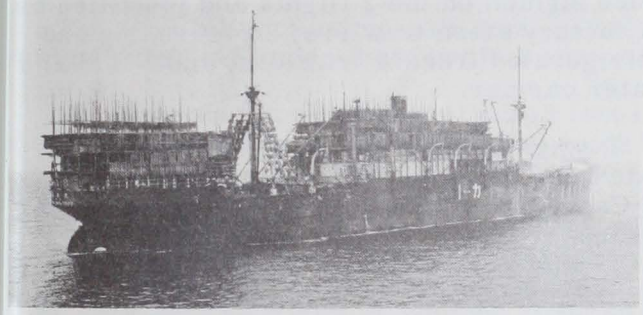

Fig. 3 - Japanese king crab factoryship operating in North Pacific.

One of the three Japanese factory trawlers reported fishing in March in the Bering Sea Triangle Area north of Unalaska Island returned to Japan. The two remaining trawlers continued fishing in the same area. Two additional Japanese factory trawlers continued to fish off the central Aleutians.

Fig. 4 - Sorting and weighing crab meat prior to freezing aboard a Japanese crab factoryship in North Pacific.

A crab factoryship with five net-setting trawlers operated on the outer Bristol Bay "flats" about 150 miles west of Port Moller.

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OFF PACIFIC NORTHWEST:

Soviet: In early March large concentrations of Soviet fishing vessels (which were reported in February fishing from Dixon Entrance to Queen Charlotte Sound) switched north off Central Alaskan waters. A few large stern trawlers and medium trawlers, however, remained in the general area of Queen Charlotte Sound presumably fishing for Pacific ocean perch.

Throughout February 1966, the research vessel Adler was observed conducting fishery explorations off the Pacific coasts. On February 17, she was sighted about 17 miles west of Coos Bay, Oregon. By February 22, the Adler was off Willapa Harbor, Washington. At the end of the month she docked in Vancouver, British Colombia (Canada), to get supplies and fuel. In March 1966, the Adler was reported off the California coast, according to Soviet sources.

The American Telephone and Telegraph Company's underwater cable which runs between Seattle and Alaska has been severed twice since the Soviet fleets began fishing off Dixon Entrance early 1966. The second break, which occurred on January 24, 1966, forced the company to bring its cable repairship all the way from Hawaii. The ship remained in the area until March 5 patrolling the cable areas.

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IN NORTHWEST ATLANTIC:

Soviet: In early March Soviet fishing activities in the Northwest Atlantic off U. S. coasts were particularly heavy when 71 fishing vessels (including 52 large stern trawlers) were sighted during one single surveillance flight. By mid-month, however, it was observed that fishing was poor (lack of fish on decks of Soviet trawlers) and by March 16 only about 30 Soviet fishing vessels were sighted in the Northwest Atlantic. The rest switched to hitherto little exploited mid-Atlantic waters off New Jersey and Virginia.

Soviet fishing vessels on Georges Bank during March showed a slight increase over the previous month. A total of 107 vessels were sighted as compared with 92 vessels

sighted during February 1966, and 42 vessels in February 1965. The vessels sighted in March were identified as 67 factory stern trawlers, 6 processing and refrigerated freezer trawlers, 19 side trawlers, 4 medium side trawlers, 6 refrigerated transports, 1 factoryship, 2 fuel and water carriers, 1 tug, and 1 passenger transport. Fishing operations ranged along the 100-fathom curve of the Continental Shelf from south of Long Island (Hudson Canyon), eastward to the southwest and southeast parts of Georges Bank (Lydonia and Corsair Canyons). These same areas were fished by the Soviets also in 1965 and like then catches were primarily whiting and red hake.

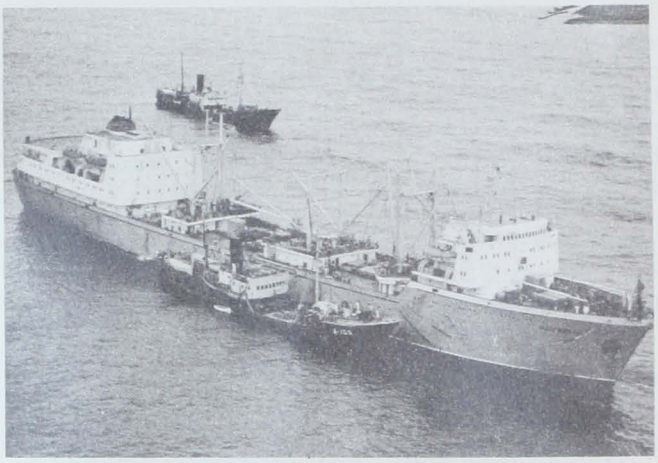

Fig. 5 - Soviet processing and refrigerated factoryship operating in Northwest Atlantic. Standing by are Pioneer-class Soviet trawlers.

The Soviet fleets, operating in groups of 30 to 40 vessels, were located 50 to 70 miles south of Block Island, and 30 to 40 miles south and southeast of the Nantucket lightship. They also fished in the southeast part of Georges Bank.

Spanish: A U. S. fishing vessel from Boston reported that a fleet of about 30 Spanish trawlers began pair-trawling in the southeast part of Georges Bank. Presence of Spanish trawlers was confirmed; at least 15 were sighted near Corsair Canyon during March surveillance patrols.

Boarding of Polish Trawler "Virgo": On April 1, 1966, a Polish trawler (the Virgo GDY-309) requested permission from the U. S. Coast Guard to enter the Port of Boston for repairs to its trawl winch. A boarding party, including U. S. Bureau of Commercial Fisheries personnel, inspected the vessel, which remained in Boston until April 8.

The Virgo is one of 14 Polish stern trawlers (2,800 gross tons each) fishing for cod off Labrador. In May they were expected to switch to the Atlantic Ocean perch fishery. The Virgo's yearly quota is 5,200 metric tons of frozen fish (exclusive of fish meal). Part of the catch is packed in English-labeled cartons, landed at St. Pierre et Miquelon (French) and transhipped aboard Canadian transports to the United States.

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OFF MID-ATLANTIC COASTS:

Soviet: During March, two surveillance flights were conducted along the middle Atlantic Coast areas in response to reports concerning substantial Soviet fishing activity from southeast of Cape May, N. J., to Cape Hatteras, N. C. A total of 34 Soviet vessels were sighted on the 2 flights and identified as 31 factory stern trawlers, 2 processing and refrigerated freezer trawlers, and 1 fuel and water carrier.

Twenty-three of the 34 vessels were located in a 60-mile area from 70 miles east of Cape Henry, Va., to 70 miles southeast of Cape May, N. J. Moderate catches of fish on deck appeared to be primarily whiting with lesser amounts of scup (porgies). All vessels were using heavy bottom-tending trawls.

The remaining 11 vessels were located in a 30-mile area 90 miles east of Atlantic City (Hudson Canyon). Those vessels engaged in fishing operations had heavy to moderate catches on deck--primarily red hake and whiting. Several vessels were under way heading in a southerly direction.

This was the largest concentration of Soviet fishing vessels ever observed as a result of periodic surveillance flights along the mid-Atlantic areas. Soviet fishing activity in those areas was negligible in 1965. In the spring of 1964, however, factory stern trawlers and 12 side trawlers did fish for scup off the Virginia and North Carolina coasts.

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IN THE GULF OF MEXICO AND CARIBBEAN:

Soviet: Like in 1965, there has been an increase of Soviet fishing activities in the Gulf of Mexico and Caribbean. It is believed that at least a dozen or more medium and large trawlers fished for various species in early

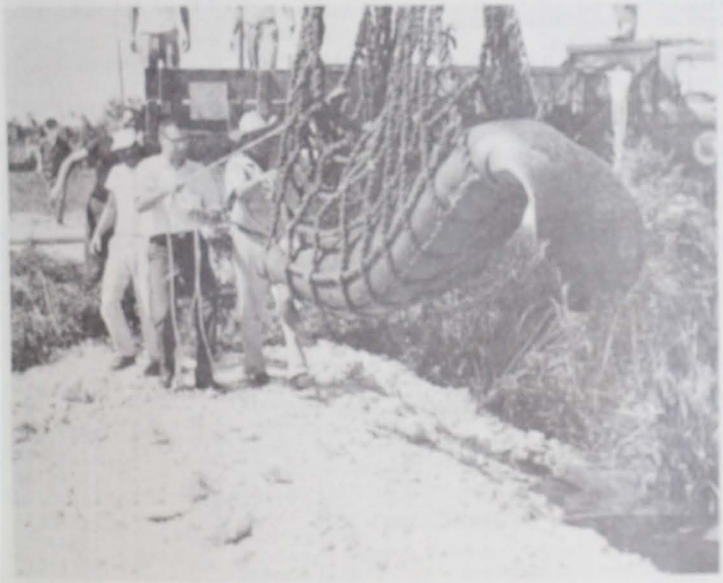
pril 1966. That the U.S.S.R. must have a nsiderable number of vessels in the area evident from the fact that in February the viet passenger ship Baltika arrived at Havana, Cuba, with about 350 Soviet fishermen aboard. They replaced Soviet fishermen who were due to go home on leave.

SEA COWS SHOW PROMISE AS "WEED CONTROLLERS"

A sea cow safari into the jungles of Panama was made in late September 1965 by State fficials of the Florida Central and Southern Flood Control District (FCD).

The possibility of using manatees (knows as sea cows) to control aquatic weeds is being studied under a Florida State project as well as under a Federal project in the Canal Zone.

Manatees can grow to more than 12 feet in length. They are strict vegetarians and have roved to be excellent weed eaters. But aside from their eating habits, not too much is known about these unusual mammals. More information is needed about their life cycle, particularly their rate of reproduction.



n June 1964 a manatee was lowered into a fenced-off section of a canal in Florida. That was the start by the Central and Southern Florida Central District of a three-year study of manatees and their usefulness in controlling aquatic weeds.

The Panama visit was planned to give Florida researchers an opportunity to visit a remote area in the Panamanian jungle where 5 adult sea cows and a juvenile were penned in a 7-acre lagoon. The visit also provided a valuable opportunity to exchange information.

The Florida Central and Southern FCD is currently spending $200,000 a year to keep its waterways clear of vegetation. Unless some new method of weed control is discovered--such as the use of manatees--the District's weed control costs may increase to $500,000 a year when the Flood Control Project is completed.

The total cost of aquatic weed control in Florida--including expenditures by cities, counties, drainage districts, individuals, and State and Federal agencies--runs into several million dollars annually. It is estimated that if weeds were left untreated, all the inland waterways in the southern United States would be choked with vegetation and impassable to navigation within 3 years. (News Release Central and Southern Florida Flood Control District, West Palm Beach, Fla.)

Note: See Commercial Fisheries Review, Oct. 1964 p. 107 and Dec. 1964 p. 106.