

## Mexican Fishery Development Plan Aims to Hike Fish Production 300 Percent in 6 Years

Mexican Fisheries Director Fernando Rafful has released the details of the new National Fisheries Development Program after conferring with President Lopez Portillo and presenting the Plan to the Mexican Congress on 4 August. The Plan is designed to advance Mexico's present position as the world's 28th most important fishing nation to the world's 5th-ranked fishing country.

Mexico has a 10,000-km coastline and its new 200-mile Exclusive Economic Zone (EEZ) covers an area of over 2 million km<sup>2</sup>. The country's fishing industry is now dominated by fisheries for species primarily destined for export, such as shrimp, lobster, and abalone. The new Fisheries Development Plan provides an increase in Mexico's fishery landings of over 300 percent, from about 0.55 t in 1976 to 2.4 million t by 1982, as well as an increase in the availability of fishery commodities on the domestic market.

To accomplish this, the Mexican government has proposed an investment of \$1.3 billion from government and private domestic and foreign sources, which is more than double the

figure mentioned in previous reports. The Mexican government was also considering revising the laws governing foreign investment. Rafful stated that the Plan aims at transforming Mexico into a modern fishing nation by expanding the fleet, constructing new fishing ports and processing plants, and improving the organizational and financial structure of the industry.

The largest portion of the \$1.3 billion planned investment will be used to expand the fishing fleet. The government has allocated \$526 million, or over 40 percent of total planned investment, for the construction of 993 vessels. This includes 106 tuna boats, 62 sardine/anchovy seiners, 616 shrimp trawlers, 82 groundfish trawlers, 4 large stern trawlers, 12 medium hake trawlers, 10 red crab trawlers, 1 seaweed harvester, and 100 snapper/grouper smacks. Only 339 shrimp trawlers and 4 tuna boats are to replace existing vessels, the rest will be deployed in the expanding fleets.

The Mexican government has traditionally attempted to discourage vessel imports and to promote the purchase of fishing vessels from domestic ship-

yards. The 500 shrimp trawlers financed by the Mexican Government during the Echeverria Administration for cooperative fishermen were all built in Mexican shipyards.

The new Lopez Portillo Administration, however, has received, many requests from private and cooperative fishermen for permits allowing the importation of foreign-built fishing vessels. After approving import licenses for 21 used Peruvian anchovy seiners in January 1977, the Government suspended further vessel imports, pending the completion of a study to determine if Mexican shipyards can meet the country's demand for fishing vessels. Although Mexican shipyards have considerable expertise in constructing shrimp trawlers and have begun to build tuna boats, it is unlikely that they have the capacity to build all of the vessels envisioned in the Plan by 1982.

Aquaculture and freshwater fisheries development received the second highest priority from the Department of Fisheries with a planned investment of \$239 million. Mexico has more than 5 million acres of inland waters and the Government believes that landings can be increased 780 percent to 660,000 t by 1982, amounting to 25 percent of Mexico's projected total fishery landings in that year. Part of this investment will finance the building of 24 aquaculture centers, 42 intensive-culture fish farms, and 100 pilot fish farms.

Most of the expanded aquaculture and freshwater catch will be food fish for the domestic market. Recent press reports have indicated, however, that a new experimental shrimp aquaculture project will be built at Puerto Peñasco at the northern tip of the Gulf of California. The project will utilize new methods developed by the University of Arizona and the University of Sonora and is being partially funded by the Coca Cola Company.

Another priority program under the new Plan is a \$177 million investment to develop needed fisheries infrastructure, primarily the construction of fishing ports. A total of 160 fishing ports are planned, 60 on the Gulf of Mexico and 100 along the Pacific coast.

### JAPAN PLANS HUGE ARTIFICIAL REEF

A gigantic artificial reef, as much as 20 times the size of any currently in existence in Japan, is reportedly being planned off the coast of Yamaguchi Prefecture in a 3-year program beginning in FY 1978. The reef would provide a fishing ground for yellowtail, jack mackerel, Pacific mackerel, and snapper, according to the program. Initial construction will place eight 10-cubic-meter and

1,000 2-cubic-meter concrete blocks along with a seaweed bed consisting of 4,000-cubic-meter quarry rock on a sea bed from 70 to 80 meters deep off the City of Hagi.

By the end of the FY 1980, the reef will be enlarged to five times the initial size at a cost of approximately \$1.9 million. (Source: Foreign Fishery Information Release No. 77-10).

Priority has been assigned to the traditional fishing ports of Alvarado, Tuxpan, Tampico, Ciudad del Carmen, Mazatlán, Guaymas, Salina Cruz, and Ensenada. Plans also call for investments in roads, trucks, refrigerated vans, communication facilities, water and power supplies, maintenance and repair facilities. The Plan also addresses one of the major problems limiting the growth of the Mexican fishing industry, namely the lack of an adequate national distribution and marketing system. Significant quantities of fish are consumed only along the coast and in a few large inland cities. The government now plans to invest \$142 million to provide the distribution and marketing facilities needed for a wider distribution of seafood commodities. A better distribution of sardine, anchovy, shark, oyster, and octopus catches in the states of Colima, Michoacan, Chiapas, Tamaulipas, Veracruz, and Tabasco has priority under the Plan. Other investments provided for under the new Plan include \$146 million for industrial development and transportation, and \$70 million for research and training.

Rafful has indicated that the Plan will create 100,000 additional jobs in the fishing and fishery-related industries. Most of the increased catches envisioned in the Plan will come from Mexico's 200-mile Exclusive Economic Zone and inland water. The catches of tuna, cod, hake, squid, and cuttlefish, however, are projected off the coasts of other countries or in international waters. Mexican consumers now eat about 230,000 t of fishery products annually. The Government hopes to increase this consumption to nearly 895,000 t by 1982 and also to promote the buying of species which are in abundant supply in Mexican waters, but unfamiliar to Mexican consumers. Special emphasis will be placed on marketing species such as anchovy, squid, cuttlefish, crayfish (*langostilla*), and hake, which are currently underutilized by Mexican fishermen and consumers.

Productos Pesqueros Mexicanos (PROPEMEX), a state-owned production and marketing enterprise, has posted invitations for bids in several

Mexican newspapers following tentative approval of the Fishery Development Plan's Budget. To qualify for bidding, firms or persons must be on the approved list of Government purveyors.

The invitation is divided into four major classifications: 1) Fishery vessels and other vehicles, auxiliary equipment and gear, electronic, communication, fishing gear, etc.; 2) production—processing and packing equipment for fishmeal plants, refrigeration equipment, boilers, compressors, pumps, filters, scales, etc., laboratory equipment, industrial gases and chemicals; 3) maintenance—electrical motors, breakers, starters, transformers, electrical material such as wire, conduit, lamps, pulleys, belts, valves, controls, pipe, stainless tubing, hoses, etc; 4) others—forklifts, trucks, panel trucks, diesel engines, tools, lubricants, construction material, safety equipment, office equipment, construction material, etc.

Interested firms must register with PROPEMEX as soon as possible at their Mexico City office: Gerencia de Adquisiciones, Avenida Baja California No. 255-A, Colonia Hipodromo Condesa, Mexico, D.F. U.S. firms should notify their Mexican representatives to take the necessary action.

According to the NMFS Office of International Fisheries, there is no doubt that Mexico's fisheries catch can be substantially increased. Whether Mexico can achieve its goal of increasing the fishery landings to 2.4 million t by 1982 is an open question. Such a large increase in 6 years would be an astounding achievement by any country. While considerable development of the country's fisheries was accomplished during the Echeverria Administration (1971-1976), the rate of growth never approached the rate which would be required to reach 2.4 million t by 1982. Between 1970 and 1976 the Mexican fisheries catch increased at an average rate of under 20 percent annually. The projected annual rate of growth in the new plan is about 55 percent.

Numerous problems still plague the Mexican fishing industry. The large

state-controlled corporation has amassed multi-million dollar deficits which continue to increase. Bitter conflicts divide the private and cooperative fishermen. Many cooperatives are hopelessly in debt and accusations of corruption are commonplace. Existing laws impede needed foreign investment. Much of the industry is centered on export markets and provides only a few low-priced foods to the domestic consumer. The important Pacific shrimp fishery is being overfished and large amounts of shrimp are being sold illegally. To solve these and other problems by 1982 and to increase the catch by 300 percent will require a phenomenal performance by the new Department of Fisheries.

Rafful, has apparently succeeded in winning the confidence of many Mexican business and cooperative leaders. The coordination of the many diverse government agencies which previously dealt with fisheries will help the government to formulate and implement a coherent national fisheries policy. The new Fisheries Development Plan appears to be a well-conceived program designed to modernize the industry as well as to alleviate some of the problems which have plagued it. The Mexican Congress was expected to approve the Plan with only limited revisions. Many informed observers believe that even if the catch goal of 2.4 million t is not achieved by 1982, the Mexican fishing industry will undergo the most significant period of growth in its history. (Source: IFR-77/158).

## **Russia, Japan Okay Fish Quotas in Japan's Waters**

The Soviet-Japan Interim Fisheries Agreement which regulated the Soviet fishing in waters under the Japanese 200-mile jurisdiction from July through December 1977 was signed in Tokyo on 4 August. The agreement allocated a catch quota totaling 335,000 metric tons to 276 Soviet vessels for the period. During the negotiation, the Soviet delegation surprised the Japanese by revealing that the Soviets had caught 635,000 tons the previous

year in the Japanese coastal waters (or 487,000 tons from July through December), more than twice the amount the Japanese government had estimated. The catch quota allowed to the Soviet Union by the new agreement, therefore, would represent a 31 percent reduction when compared with the Soviet-claimed figure for the comparable 1976 period, but an increase of as much as 50 percent when compared with the original Japanese estimate.

Alaska pollock, with a 30,000-ton catch quota, received the largest cut of all fish species, by as much as 108,000 tons or 78 percent from the Soviet-claimed figure of 138,000 tons during the comparable year-earlier period. The agreement further stipulated a restriction to Alaska pollock fishing by impos-

ing a year-round ban on bottom trawling at depths less than 500 meters in all of the 200-mile zone waters and inside of the "otter line" off the Pacific coast of Hokkaido.

In the new agreement the Soviet Union apparently emerged with much of its fishing rights for sardines and mackerel intact, the species in which they have a strong interest. The agreement allowed a combined catch quota of 200,000 tons for these species, only 11 percent less than the comparable 1976 catch total of 224,000 tons. Furthermore, catch allowance of up to 10 percent was recognized for sardines and mackerel, provided that the increment be contributed from the quotas for other species. The 276 Soviet vessels admitted into Japan's 200-mile zone

represents a cut of approximately 10 percent from a year ago.

The delegations of the two governments are scheduled to meet again in late August to begin negotiations for a long-term fisheries treaty. A breakdown of catch quota for July through December 1977, is shown below in

Species	1977 Quota	1976 Catches
Sardine, mackerel	200,000 t	224,000 t
Alaska pollock	30,000	138,000
Itohikidara (Remonema)	58,000	66,000
Saury	10,000	0
Sand lance	4,500	30,000
Others	32,500	29,000
Total	335,000	487,000

comparison with actual catches for the comparable 1976 period. (Source: Foreign Fishery Information Release No. 77-11.)

## PRC, Japan Exchange Fishery Visits

The executive secretary of the Sino-Japanese Friendship Association, Sun Ping Hua, told a group of Japanese visitors in Peking in early August 1977, that the PRC was carefully examining her relationships with neighbor nations on the issue of a 200-mile fishery conservation zone. The visitors were fishermen from Shimonoseki City, located in the western part of Japan.

Hua maintained that the PRC (People's Republic of China) would not establish a 200-mile zone in the near future, and that when it did, it would not draw the 200-mile line unilaterally. The North Korean 200-mile zone measures had taken effect only a few days earlier, and Sun expressed approval, though he reportedly criticized the Soviet establishment of a 200-mile zone.

Hua's statements somewhat alleviated the Japanese fishermen's concerns. However, the fishermen were aware that the PRC had begun to be active in fishing operations in the East China and Yellow Seas. Giant Japanese fishing companies are selling fishing vessels to the PRC, while the PRC has stepped up her own fishing vessel construction program. Besides, the South Korean fishermen have been driven out of the North Korean and Soviet 200-mile zones. The western Japanese

fishermen fear that the PRC would not lose any time in setting up her own 200-mile zone if South Korean fishermen increase their efforts in the East China and Yellow Seas.

A 40 member western Japanese fisheries delegation led by Governor Kamei of Fukuoka prefecture visited the People's Republic of China in late October 1977. Each of the four prefectures represented in this tour were to select six fishing industry leaders and four prefectural and municipal government administrators to participate. Earlier this year, 451 Japanese businessmen and community leaders, including 18 leaders of the nation's fishing industry, visited the PRC for 2 weeks, touring Shanghai, Yantai, and Peking.

Between 12 July and 3 August, an 11 member delegation of the PRC Fisheries Association, led by the president of the Association, Hsiao Ho, visited Japan. Although the visit was arranged through a private organization, the Japanese Government was interested in the visit, and Director Okayasu of the Japan Fisheries Agency interviewed the visitors for 1 hour on 30 July.

Besides attending receptions and other special events in their honor, the delegation visited the following facilities: 1) Fishing harbors in Choshi,

Misaki, Nagasaki, Shimizu, and Shimonoseki; 2) fish processing centers in Karatsu and Tokusui; 3) aquaculture sites at Kanagawa Prefectural Fisheries Laboratory, Nagasaki Prefectural Aquaculture Research Laboratory, Shiki Shinmachi Aquaculture Center, Western Japan Regional Fisheries Center, and Yamaguchi Prefectural Mariculture Center; 4) Nagasaki, Kinshi and Tokushima shipyards; and 5) the Japan Specialty Steel Company and the Yanmar Diesel Engine Manufacturing Company.

The PRC has requested the Taiyo Gyogyo Company of Japan to sell eight trawlers engaged in operation in the sea regions to the west of the Japanese islands. Taiyo recently obtained Japanese Fisheries Agency clearance as well as an understanding by the fishing industry, and will export to PRC five 11-year-old, and three 7-year-old trawlers.

Taiyo has also signed a contract with PRC for the sale of a 5,000 t refrigerated transport vessel *Yuyo Maru*. The vessel, which underwent maintenance service, was scheduled for delivery to PRC officials at the end of September 1977 at the port of Sasebo, Japan. Seven PRC engineers were trained in Japan on the handling of the vessel's engine and gear.

Six refrigerated transports, 850 GT each, were built and exported to the



People's Republic of China by Kinshi Shipyards of Japan between April and October 1974. Each of the vessels was 67.15 m long, 10.90 m wide, had a full load draft of 4.50 m, took a 40-man crew, and was capable of cruising at 12 knots fully loaded.

The vessels were not equipped to fish, but had pumps for transferring fish from other vessels or purse seines and have jet devices to provide crushed ice directly to the satellite vessel holds. Three refrigerated transports of 2,000 GT each and capable of supplying oil and other necessities to fishing vessels were also constructed and delivered to the PRC by the same company in December 1975.

The president of Taiyo returned from the PRC on 5 July 1977 and held a news conference on his 8-day courtesy visit. He disclosed that his company was to purchase about 500 t of Yellow Sea prawns from PRC fishermen in Po Hai Gulf between September and November 1977. The high seas transloading was first attempted in 1976, and 50 t of the PRC-caught fresh prawns were marketed in Japan.

Taiyo's president also planned to buy fur products from the PRC and exhibit them in Tokyo, Osaka, and Sapporo for marketing. In response to his questions concerning PRC 200-mile zone legisla-

tion, PRC officials assured the president of Taiyo that they wished to continue the friendly fisheries relationship with Japan. They said that while the fisheries conservation efforts must be directed to each species, the historic Japanese catch levels would be taken into account when PRC established its 200-mile fishery conservation zone.

In 1974, Japanese importation of PRC fishery products reached the record high annual volume of 39,000 t, valued at 29 billion yen (US\$107.4 million). Since, the imports declined steadily both in volume and in value until recently. Japan imported from PRC only 13,000 t of fishery products valued at 9 billion yen (US\$33.3 million) during the first half of 1977. More recent reports, however, indicate a gradual increase in the PRC exports to Japan. High quality sea urchin roe and fresh clams contribute to this upswing in the fisheries trade.

Although the trade in fish between the two neighbor nations declined, the exchange of fishery technology has not diminished. On the contrary, PRC has intensified her efforts to obtain assistance from Japanese fishing companies to develop her fishing, and aquacultural and fish processing technologies. There are possibilities of the establishment of a bilateral governmental technical cooperation scheme involving fisheries. Table 1 shows Japanese imports of PRC fishery products in 1975 and 1976. (Source: Report 77-5, NMFS Language Services Branch.)

### Russians, Danes Explore A Joint Fishery Venture

Denmark's Fisheries Minister, Svend Jakobsen returned from a 6-day summer visit to the Soviet Union and told the press that Denmark sought an agreement with the Soviet Union whereby Soviet-caught reduction fish would be landed in Danish ports to be processed by the Danish fishmeal industry. Jakobsen also proposed that food fish be landed in Denmark and then re-exported to the Soviet Union. Also discussed was the possibility of Denmark building and selling fishing

vessels and gear to the Soviet Union. The Soviets appeared, however, to be more interested in obtaining drydock facilities for routine overhaul and repairs of their fishing fleet.

There was at first some concern that the Soviet Union would have to sign a fisheries agreement with the European Economic Community (EEC) before concluding a joint fisheries venture with EEC member Denmark. Soviet refusal to recognize the EEC and, more specifically, its jurisdiction in West Berlin, had complicated previous Soviet-EEC fisheries negotiations. According to more recent information, however, the joint venture proposal was judged to be a private arrangement which did not require prior Soviet recognition of the EEC. Although Danish Fisheries Minister Jakobsen carried out the original negotiations, the joint venture proposal was in fact initiated by the leaders of the Danish fish processing industry.

According to the NMFS Office of International Fisheries, the Danish fish meal industry is threatened by the prospect of inadequate supplies of fish. The recent decision by the European Commission to ban herring fishing temporarily further accentuates the problem and may, in the long run, force the Danes to use other species for reduction. Danish fishmeal plants on Jutland's northern coast will be particularly affected, and unemployment in the area is certain to rise. Strong demands have been made on the Danish government to provide grants to fishermen totaling US\$5 million and to seek a solution that would maintain Danish supplies of reduction fish.

The possibility of Danish shipyards exporting fishing vessels and gear to the Soviet Union, would not be new in Danish-Soviet fishery relations. The Soviet Union has a history of vessel contracts with the Burmeister and Wain shipyard in Copenhagen that dates back to 1932.

By 1960, the Soviets had already purchased about 20 freezer trawlers from that shipyard. In the course of the 1960's and early 1970's, this figure doubled with Soviet purchases of 21 refrigerated transport/freezer trawlers

Table 1.—Japanese imports of PRC fishery products, 1975-76, by quantity (t) and value (million yen)<sup>1</sup>.

Products	1975		1976	
	Quant.	Value	Quant.	Value
Live fish				
Eels	34	386	24	962
Fresh or frozen				
Spanish mackerel	1,831	380	1,000	319
Prawns	9,768	13,996	5,577	12,763
Clams	7,141	1,018	10,040	1,748
Other	3,285	981	4,078	1,056
Salted or smoked				
Herring roe	1,116	1,726	1,447	3,844
Jellyfish	3,286	1,781	1,247	836
Other	178	49	156	48
Regulated items				
Crabs, squid, etc.	6,607	1,480	7,248	1,937
Other	1,662	434	842	180
Total	34,910	22,651	31,661	24,750

<sup>1</sup>One million yen = US\$3,700.00 at the exchange rate of 270 yen = US\$1.00.

of the SKRYPLEV-GRUMANT class. The first four vessels, constructed during 1962-1963, were of the SKRYPLEV class and were designed primarily as freezer vessels. The remaining vessels, constructed between 1964 and 1971, were all part of the GRUMANT class, which was based on the SKRYPLEV design with the addition of trawling equipment.

Until the late 1960's, the B and W shipyard was the Soviet Union's only supplier of these types of freezer vessels. However, when Dutch shipyards became capable of constructing similar vessels, the Soviets contracted for several vessels of the related REMBRANT series and the first deliveries of these took place at the end of the decade.

Trade between the B and W shipyard and the Soviet Union was not limited to vessels alone. In 1959, cooperation between the two was expanded by the issuance of a license whereby the Soviet Union could build B and W diesel motors. Since then, many of the vessels built in Soviet shipyards have been equipped with Soviet-built models of B and W motors.

Some of the reasons why the Soviets now appear to be more interested in obtaining drydock facilities in Denmark for routine overhauls and repairs of their fishing vessels rather than purchasing Danish vessels and gear may be that: 1) the Polish and East German shipyards can fill Soviet vessel orders more cheaply; 2) Soviet shipyards themselves can produce comparable vessels and gear; and 3) the Soviet Union has reoriented its fisheries investment program toward improving shore-based processing facilities, ports, and the retail market network for fishery products rather than further increasing the size of its already large fishing fleet. (Source: IFR-77/166.)

### Japan To Boost Aid For 200-Mile Zone Program

The Japanese Ministry of Agriculture and Forestry, in late summer, disclosed a draft budget request for FY 1978 containing a proposal to increase fishery-related spending by an average 27 percent over the current FY 1977

budget. The requested total government spending in the fisheries sector for FY 1978 is ¥224,400 million (US\$865 million at ¥260 = US\$1).

A program receiving a special emphasis in the FY 1978 fisheries budget is the development of fisheries within Japan's own 200-mile zone, for which a sum of ¥18,688 million (US\$72 million) is allocated. This program, which ranked a distant second behind one aiming to protect Japanese fishery rights in foreign waters in 1977, has been given a spending boost of about 70 percent to attain a significant status in substance. The draft budget request was submitted to the Finance Ministry to be incorporated into the overall government budget request which was to go to the Diet for legislative approval early in 1978. (Source: Foreign Fishery Information Release No. 77-12.)

### Artificial Spawning of Milkfish Reported

Philippine press reports indicate that a team of Filipino and foreign fishery researchers have succeeded in inducing artificial spawning and hatching of viable larvae of the sabalo (*Chanos*

*chanos*), also commonly called bangus or milkfish. This was reportedly accomplished in the laboratories of the Aquaculture Department of the Southeast Asian Fisheries Development Center (SEAFDEC) in Pandan, Antique.

The artificial spawning procedure involves injecting the female milkfish at regular intervals with a hormone solution to induce maturing. The milkfish are a sensitive breed and are notorious for refusing to spawn in captivity. Once the eggs were stripped from the female they were mixed with sperm from the male milkfish.

Despite its experimental stage, this breakthrough in artificial spawning could have a significant economic impact on the Philippine fishpond industry which is earning approximately US\$135 million and is primarily based on milkfish culture. Philippine milkfish production, under natural conditions, has been close to 100,000 metric tons per year since 1969, according to FAO statistics. It is estimated, however, that it will be 5 or 6 years before refinement of the artificial spawning procedure would allow the production of milkfish fry on a commercial scale. (Source: IFR-77/163.)

### Japan Reports 1975 Tuna Catch Within 200 Miles of Foreign Coastlines

In 1975 as much as 46.7 percent of the total Japanese longline tuna catches came from within 200 miles of foreign shores, according to a *Suisan Shuho*

report. Operating in those waters, 750 tuna longliners belonging to members of Nikkatsuren (Japan Association of Tuna Vessel Owners) harvested 136,200 t of tuna by longlining. The following table gives details on the harvest by country and by species. The table does not include results of the 1975 skipjack pole-and-line fishery.

Japan's 1975 longline tuna catches within 200 miles of foreign shores (in metric tons).

Country	Bluefin tuna	Albacore	Bigeye tuna	Yellowfin tuna	Other tuna	Marlin	Other <sup>1</sup>	Total
Australia	4,440	840	1,200	1,890	8,370	2,700	870	11,950
Equador	—	—	9,690	2,140	11,830	1,360	360	13,550
Indonesia	30	210	4,510	5,140	8,900	890	260	10,100
Mexico	160	—	—	1,370	1,500	4,150	190	5,730
Micronesia	190	810	11,400	14,270	26,670	2,190	1,210	29,980
New Zealand	4,740	120	180	80	5,120	370	510	6,000
Philippines	—	70	1,100	4,240	5,400	260	50	5,730
Portugal	1,970	140	2,670	1,440	6,220	380	200	6,790
South Africa	820	100	270	2,220	3,410	190	150	3,730
United States	1,290	590	3,100	1,680	6,660	680	550	7,900
Total	17,280	3,520	49,480	40,600	110,880	18,860	6,370	136,200
Value <sup>2</sup>	223.1	8.1	322.0	207.0	760.0	105.5	16.6	883.0

<sup>1</sup>Included are 60 t of skipjack and 485 t of shark.

<sup>2</sup>Yen, in millions (US\$3.33).