

Japan's 1983 Fisheries Catch Sets Record

Japanese fishermen enjoyed a record-high fisheries catch in 1983. The U.S. Regional Fisheries Attache in Toyko reports that Japan's 1983 fisheries harvest totaled 11.9 million metric tons (t), an increase of almost 5 percent over the 1982 catch of 11.4 million t. Japan has successfully maintained its fisheries catch above 10 million t since 1979 (Table 1), and continues to land the world's largest fisheries catch.

Marine Fisheries

Japan's 1983 marine fisheries harvest increased by 4.7 percent to 11.7 million t and accounted for 98 percent of the total catch. The largest increase in 1983 was in the off-

shore/coastal fisheries catch, which increased by 4.8 percent compared with 1982, from 8.1 million t to nearly 8.5 million tons. The greatest percentage change was in the marine aquaculture catch, which increased by 12.2 percent to nearly 1.1 million t in 1983—nearly five times the inland water harvest and about half the distant-water catch.

Inland Fisheries

Japan's inland fisheries catch comprises less than 2 percent of the total catch and decreased by nearly 4 percent in 1983. The freshwater catch decreased by almost 5 percent and the freshwater aquaculture catch decreased by 2 percent.

Japan's record high catch in 1983 was largely the result of an increased sardine catch. In 1982, Japan's sardine catch was 3.3 million t, while in 1983 it increased to 3.7 million t and accounted for over 30 percent of the total fisheries catch (Table 2). The two other leading species making up Japan's fisheries catch were Alaska pollock (12 percent of the total) mackerel (7 percent of the total). The mackerel catch increased by 12.1 percent in 1983, but the pollock catch decreased by 8.6 percent. The 135,000 t decrease in the pollock catch was due almost entirely to decreased catch allocations which Japan received from the United States (such allocations were 835,000 t in 1982, but only 731,000 t in 1983). Sardine, Alaska pollock, and Pacific mackerel together accounted for 51 percent of the total 1983 marine catch. Finally, the number of whales harvested by Japan decreased by 7.3 percent in 1983. (Source: IFR-84/51.)

Table 1.—Japan's fisheries catch by major fisheries, 1979-83¹.

Fishery	Catch (1,000 t)					Percent change 1982-83
	1979	1980	1981	1982	1983 ²	
Marine						
Distant water	2,066	2,167	2,165	2,089	2,114	+ 1.2
Offshore	5,458	5,705	5,939	6,070	8,531 ³	+ 4.8
Coastal	1,953	2,037	2,038	2,072		
Aquaculture	833	992	960	938	1,052	+ 12.2
Subtotal	10,590	10,901	11,103	11,169	11,698	+ 4.7
Inland						
Aquaculture	95	94	92	96	94	- 2.1
Other	136	128	124	122	116	- 4.9
Subtotal	231	221	216	218	210	- 3.7
Grand total	10,590	11,122	11,319	11,388	11,908	+ 4.6

¹Source: U.S. Regional Fisheries Attache, U.S. Embassy, Tokyo.

²Preliminary statistics.

³Offshore and coastal breakdowns were not available.

Table 2.—Japan's fisheries catch by species, 1979-83¹.

Fishery	Catch (1,000 t)					Percent change 1982-83
	1979	1980	1981	1982	1983 ²	
Sardine	1,817	2,198	3,089	3,325	3,731	+ 12.2
Alaska pollock	1,551	1,552	1,595	1,567	1,432	- 8.6
Pacific mackerel	1,414	1,301	908	718	805	+ 12.1
Tunas	363	378	360	372	358	- 3.8
Skipjack tuna	347	377	305	303	373	+ 23.1
Saury	278	187	160	207	240	+ 15.9
Squid, Jpn. flying	213	330	197	182	195	+ 7.1
Salmon	131	123	150	136	161	+ 18.4
Pacific cod	92	97	103	95	105	+ 10.5
Other	4,384	4,579	4,452	4,483	4,508	+ 1.0
Total	10,590	11,122	11,319	11,388	11,908	+ 4.6
	<i>Number of whales</i>					
Whales	4,918	5,191	4,887	4,967	4,606	- 7.3

¹Sources: U.S. Regional Fisheries Attache, U.S. Embassy, Tokyo, and Ministry of Agriculture, Forestry and Fisheries of Japan.

²Preliminary statistics (salmon data do not agree with FAO statistics).

Japan's Surimi Production Up 11 Percent in 1983

Japanese frozen surimi (minced fish meat) production during 1983 amounted to 376,997 metric tons (t), up 10.7 percent from the 1982 total of 340,534 t (Table 1). Of that total,

208,110 t (55 percent) consisted of factoryship-processed production (motherships and large trawlers) and 168,887 t (45 percent) was from land-based production.

Compared with 1982, the 1983 production of factoryship-processed surimi increased 4.8 percent and that

of the land-based surimi production was up 18.9 percent. While the 1983 production was the largest in 7 years, it was not a year for overall record production. Fluctuations in the trend of Japan's frozen surimi production for the last 11 years is shown in Table 1.

Meanwhile, Japanese production

of certain surimi-based products increased from 960,000 t in 1982 to 981,000 t in 1983. Production of imitation crab legs and other fish cake increased from 36,000 t to 44,000 t. Imitation crab legs are made with minced Alaska pollock meat (50-60 percent), crab meat or crab paste (some companies claim to have up to 20 percent), and other ingredients. Fried fish cake production grew from 289,000 t in 1982 to 297,000 t in 1983

Table 1.—Japanese frozen surimi production, 1972-83. (Source: FFIR 84-8.)

Year	Production (t)			Year	Production (t)		
	Factory ship	Land-based	Total		Factory ship	Land-based	Total
1972	193,500	161,200	354,700	1978	183,012	132,433	315,445
1973	223,600	159,100	382,700	1979	180,401	114,425	294,827
1974	195,300	152,800	348,100	1980	183,232	105,668	288,900
1975	191,200	166,000	357,200	1981	192,264	114,393	306,657
1976	187,000	198,000	385,000	1982	198,534	142,000	340,534
1977	168,823	191,769	360,592	1983	208,110	168,887	376,997

while steamed fish cakes dropped from 352,000 t in 1982 to 347,000 t in 1983. Production of fish ham and fish

sausage increased from 95,000 t to 98,000 t in 1983. (Sources: FFIR 84-8, 13.)

Norway's Fisheries Up Over 1982 Levels

In 1983, as in previous years, most of the Norwegian catch of major fish species was determined by international agreements and national regulations. The total harvest of fish, shellfish, and seaweed amounted to 2,928,600 million metric tons (t), or 11 percent more than in 1982 (Table 1). Pelagic fish, notably capelin, accounted for most of the increase.

Exports of fishery products increased by 25 percent, to Norwegian Kroner (NK) 7.5 billion (US\$1.0 billion)¹. Weak demand abroad for Norway's traditional stockfish and klippfish was more than balanced by increased sales of frozen fillets, fish meal and oil, and cultured salmon. Government fishery subsidies for 1984 remained at the 1983 level of NK 1.1 billion.

The industry complains that these subsidies are too low despite the fact that it will receive an additional NK300 million in state guarantees for selected fishery products. A reduction of catch quotas for the two major fish species (cod and capelin) indicates reduced employment in the Norwegian fishing fleet and fish processing industry in 1984. Long-term prospects appear more promising, due to increasing stocks of herring,

cod, and capelin, and growing production of cultured fish.

Fishing Industry

The total catch in 1983 of major species was largely determined by international agreements and national regulations, such as quotas and bans on fishing in certain areas and at certain periods of time. The total allowable catch (TAC) for Arctic cod and cod-like species and for Barents Sea capelin was limited to the quantities stipulated in Soviet-Norwegian agreements, while fishing quotas for major species of fish in the EC zone of the North Sea and adjacent waters were set jointly by Norway and the EC. The Ministry of Fisheries also determined maximum fish quotas for

certain types of gear and for individual vessels.

Value

The ex-vessel value of the 1983 catch, subsidies included, was NK4.1 billion, up 5.2 percent. Increased catches were mainly recorded for pelagic fish species (capelin, Norway pout, North Sea herring), the bulk of which are reduced to fish meal and oil. The catch of pelagic species amounted to 2,063,000 t, up 21.5 percent over 1982. The catch of cod and other groundfish (haddock, pollock, redfish), which are normally marketed as higher-priced commodities for human consumption, was 608,600 t, or 13.7 percent below the 1982 level. Shrimp, *Pandalus borealis*, reached an all time high of 75,000 t, up 45 percent.

The Barents Sea cod stock is still relatively low following years of overfishing by Norwegian, Soviet, and other trawler fleets. Because of the prevalent sea temperatures and the current age distribution of the cod, the bulk of the cod stock stays largely in the western part of the Barents Sea, which is within Norway's economic zone. Norwegian fishermen, however, were limited in fully exploiting this advantage in 1983. The Ministry of Fisheries (MOF) introduced bans for specified grounds and/or seasons; limitations on the number of fish nets per vessel; maximum catch quotas per vessels, and other restrictions. According to a MOF official, such regulations reduced Norwegian cod landings in 1983 by about 50,000 tons.

Table 1.—Norway's fishery catch, 1980-83, by species and quantity

Species	Harvest (t)			
	1980	1981	1982	1983 ¹
Herring	1,361	10,095	23,449	43,800
Mackerel	76,921	62,098	74,062	75,000
Capelin	1,118,069	1,347,258	1,159,646	1,494,000
Pout	129,525	85,736	169,103	189,000
Whiting	134,973	166,702	170,047	191,000
Cod	281,201	338,882	343,483	276,000
Haddock	68,101	66,071	46,840	24,100
Saithe	176,962	222,183	231,297	220,000
Ling	27,189	23,459	28,403	29,000
Cusk	36,968	30,593	27,368	26,200
Redfish	8,614	9,461	10,220	11,500
Shrimp	44,810	40,970	51,499	75,000
Crab	2,178	2,175	2,074	2,000
Seaweed	126,813	148,365	149,730	150,000
Other	293,782	134,356	153,175	122,822
Total	2,526,985	2,686,958	2,638,136	2,928,600

¹In 1983, the average value of US\$1.00 was NK7.30.

¹Preliminary figures for 1983. Totals may not add due to rounding.

Exports

Total exports of fishery products reached NK7.5 billion in 1983, an increase of nearly 25 percent. Exports of frozen fillets increased substantially (by 28.5 percent) during the first 10 months of 1983 compared with January-October 1982. This was due to import restrictions in Norway's main markets for stockfish and klippfish (Nigeria, Brazil, Portugal), which prompted Norwegian processors to process as large quantities as possible of cod and cod-like species (haddock, pollock) into frozen fillets in 1983.

Brisk demand for and high prices of fish meal and oil resulted in an export value increase of 47.7 percent and 30.3 percent, respectively. Exports of fish products to the United States almost doubled to NK750 million. Aimed at Norwegian whaling, the environmental groups' boycott actions against the exports of Norwegian frozen fish to the United States did not prevent the U.S. imports of frozen fish fillets and blocks from Norway from increasing slightly in 1983 to 18,000 t.

Fish farming is assuming a significant and rapidly expanding role in the Norwegian fishing industry. During the last decade, fish farm production has increased from 1,000 t to about 17,000 t in 1983. Atlantic salmon, *Salmo salar*, accounts for about three-fourths of this production. Exports of air-freighted fresh salmon to the United States exceeded 2,000 t in 1983. (See "Norwegian Salmon and Trout Farming" by R. Ford, page 28, this issue.)

Fishery Agreements

Norway-U.S.S.R.

Soviet-Norwegian fishery negotiations for 1984 were concluded on 18 November 1983. Of a total allowable catch (TAC) of 260,000 t of cod—80,000 t less than in 1983—Norway was allocated 80,000 t, as well as 40,000 t of coastal cod; the Soviet Union 80,000 t and 40,000 t of Murmansk cod; and third countries 20,000 t. The Soviet Union, however, transferred 60,000 t of its cod quota to

Norway (reflecting the fish migration of recent years to Norwegian waters). In compensation, the Soviets were allotted a 385,000 t blue whiting quota (100,000 t less than in 1983) in Norway's economic zone including Jan Mayen. The 1984 haddock TAC was stipulated at 40,000 t, 18,000 t for each country and 4,000 t for third countries. In addition, Norway was allowed to catch 2,000 t of shrimp, *P. borealis* and 18,000 seals in the Soviet economic zone. Of a TAC of 1.5 million t of capelin (400,000 t less than in 1983), Norway was, as in previous years, allowed to catch 60 percent and the Soviet Union 40 percent.

Norway-EC

The EC, on 14 December 1983 approved a fisheries agreement with Norway. As a result of the Norwegian Government's plan to reduce the foreign catch of exclusive Norwegian fish stocks north of the 62nd parallel, the 1984 EC cod quota was reduced by 3,000 t (to 7,500 t) and the haddock quota by 1,900 t (to 2,200 t). The 1984 EC pollock quota was maintained at 6,000 t and the redfish quota increased 500 t, to 5,000 t. The Norwegian quota for herring caught west of Scotland was reduced by 500 t to 7,000 t in 1984. Quotas for North Sea herring were set in May, and of a preliminary 50,000 t TAC, Norway was allowed 15,000 t. Norway's mackerel quota west of Scotland was increased from 20,000 t in 1983 to 23,000 t in 1984. For the joint North Sea mackerel stock, Norway's quota was 24,500 t, the EC's 7,500 t. Norway's North Sea brisling quota was reduced from 40,000 t to 25,000 t, at Norwegian request. Norway was also allotted a 2,450 t shrimp quota (2,500 t in 1983) off Greenland and a new 600 t quota in EC zones in the North Sea. Norway's dogfish quota was raised by 1,000 t, to 3,000 t.

Support Measures

The formal basis for Government subsidization of the Norwegian fishing industry is a 1964 agreement between the Ministry of Fisheries (MOF) and the Norwegian Fishermen's Union (NFU). The dual objec-

tives of this agreement were to increase the fishermen's income to the level of other occupations and to lead eventually to a fishing industry independent of Government subsidies.

During the two decades of the agreement, the first objective appears to have been met. However, until 1982, annual subsidy negotiations normally resulted in agreements between the MOF and the NFU. For 1983 and 1984, the differences in the subsidies demanded by the NFU and offered by the Government were too large to be bridged through negotiations. In the absence of agreements, the MOF stipulated aggregate subsidies at NK1.1 billion for 1983, or 27 percent of the ex-vessel value of the Norwegian catch. An analysis of the 1983 subsidies shows that the product price supports and cost-reducing disbursements accounted for NK974 million, or nearly 90 percent of total subsidies. Measures aimed at making the fishing industry less dependent on state support were postponed, with NK115 million allotted for "efficiency and structural" measures.

In addition, the stockfish industry was granted NK200 million in liquidity loans and NK240 million State guarantees for stockfish exports to Nigeria. The opening demand and offer in the negotiations concerning 1984 fishery subsidies were NK2,033 million and NK600 million, respectively. The NFU reduced its demand to NK1,450 and the MOF raised its offer to NK1,100 and NK300 million in export guarantees, but the parties still could not reach an agreement.

Following a short "protest strike" by fishermen, the final government offer was presented to the Storting (Parliament) as a proposal and was adopted by the Storting on 16 December 1983.

In its Storting proposal, the MOF stressed the necessity of channeling Government support, to the greatest possible extent, into measures promoting more efficient and economic fishing operations, aimed at reducing future requirements for Government aid. The possibility of realizing this objective is hampered by two political considerations: 1) The fishing industry's importance for maintaining

employment and population levels in the coastal districts and 2) securing sufficient income for those employed in the fishing industry.

Due to continued fishing fleet and processing industry overcapacity, the MOF claims that NK200 million is needed for effort and processing capacity reduction (scuttling vessels or selling them for nonfishing purposes, closing down fish processing plants, and modernizing vessels and fish processing plants). An additional NK85 million was available for such purposes from previous years.

Special 1983 Government guarantees for stockfish exports to Nigeria were fully utilized by the end of the year. In October 1983, the Guarantee Institute for Export Credits (GIEK) stopped issuing guarantees for exports to Norway's major klippfish markets (Brazil and the West Indies) because of the weak and uncertain economic conditions in those countries. This set the stage for the NK300 million export guarantee arrangement for 1984. Such guarantees are primarily supposed to cover political risk, but can also cover part of the commercial risk.

Outlook

The short-term outlook for the two major Norwegian fish species is less promising than in many years. Arctic cod and capelin quotas for 1984 were drastically reduced during Soviet-Norwegian fishery negotiations to make up for years of overfishing. It is likely that this will mean further reductions in the number of vessels (many of which have been unable to fish enough during recent years to service the capital invested), and an increase in the already high unemployment among fisherman and fish processing workers, particularly in northern Norway.

In the longer run—toward the end of the 1980's—ocean biologists hold out the prospect of larger stocks of herring and cod owing to conservation efforts and successful spawning seasons in recent years. The establishment of a 200-mile economic zone, and a gradual reduction of foreign nations' fishing rights in this zone, should help secure more fishery

resources for the Norwegian fishing fleet.

In addition, fish farming will help Norway maintain a position among the major fishing nations of the world. The abundance of protected areas along Norway's coast and favorable sea temperatures offer considerable opportunities for fish farming. Marine ranching of salmon and trout is expected to reach 50,000 t in the next few years, and the culturing of flatfish, cod, and lobster has also been initiated. (Source: IFR-84/33).

Norway Sets Shrimp and Capelin Records in 1983

Last year, 1983, was a very good year in general for Norwegian fisheries with increases in both quantity and first-hand value, the Norwegian Information service reports. Norwegian fishermen caught almost 300,000 tons more fish than they caught in 1982, reaching an aggregate catch of 2.9 million tons with a first-hand value of US\$525.6 million.

Last year was also a record year for the Norwegian capelin and shrimp harvests. Capelin catches increased by over 300,000 tons to almost 1,500,000 tons, according to Fisheries Directorate data. The first-hand value of the record capelin catches alone increased by US\$25.6 million. The first-hand value of harvested shrimp went up from US\$53.3 million in 1982 to US\$82.6 million in 1983 as the shrimp catch increased from 51,000 tons to 75,000 tons.

Cod Drops

In addition, the value of Norway's herring catches (including capelin catches) was expected to surpass US\$166.6 million in 1983. However, cod catches declined and first-hand value fell from US\$294.8 million in 1982 to US\$243.5 million in 1983. Despite the reduction, the cod fisheries remained Norway's most important fisheries, calculated in NOK value, according to the Fisheries Directorate.

The first hand value of Norwegian sealing fell from US\$1.6 million in 1982 to US\$306,000 in 1983, accord-

ing to the Shipowners' Association of North Norway, as the total catch decreased from 68,262 animals to 21,493. Less than half of the 1983 quota of 48,700 animals was caught. The low value of the catch was reportedly a result of difficult market conditions. Nevertheless, the shipowner companies believed that sealing should continue, not least out of consideration to the ecology.

Export Record

Norwegian exporters of fresh fish broke all records in 1983, reporting fresh and frozen fish sales worth US\$294 million. This was US\$102 million more than in 1982, according to Norinform data from the fish exporters association.

Reasons for the increases lay in the shrimp fisheries and the increased production and demand for Atlantic salmon. But even the earnings from salmon exports took second place to those from the shrimp fisheries. Last year 24,000 tons of shrimp were exported as against 18,000 tons in 1982, which was also reckoned to be a good year. The export value was US\$134 million compared with US\$75 million in 1982. An aggregate 75,000 t of shrimp were landed.

Traditional fish exports such as cod and saithe, however, had a relatively bad year. Norwegian exporters reportedly were impeded by EEC duties which make it difficult to sell these products in Europe.

Octopus Sales

The total fisheries export figures included capelin, round-frozen mackerel, greenland halibut, and "akkar" (octopus) which is fast becoming a popular product. About 7,000 tons of akkar were exported last year, and export for consumption is also increasing (formerly it was mainly used as bait). Last year 15 countries purchased akkar from Norway for consumption. If the drift of akkar into the Norwegian fjords continues this year it could be a very interesting product in 1984, according to Norwegian authorities. Salmon production was also expected to increase by 40 percent in 1984 (over 1983).

Pakistan Set to Develop Deep-Sea Fish Reserves

Pakistan's new deep-sea fishing policy is aimed at promoting joint ventures with foreign countries, allowing Pakistan to fish previously underutilized offshore resources. Until 1982, almost all Pakistani marine fishing was done within 15 miles of the coast. Pakistani fishermen used artisanal fishing vessels and gear in shallow coastal waters less than 50 m deep.

Fishermen complained to the Pakistani Government about the depletion of fishery stocks and the increasing level of fishing by foreign vessels. In response to these complaints and because there was interest expressed by foreign governments in obtaining licenses to fish in Pakistani waters, the Pakistani Government became more active in promoting the development of the country's deep-sea fisheries. The availability of U.N. technical assistance and the example of India's efforts to utilize tuna resources also were factors influencing the Pakistani Government's decision.

The major impetus for Pakistan's new offshore fishing policy was a 1982 study of its fishery resources by the Food and Agricultural Organization (FAO) of the United Nations. The report concluded that as many as 17 deep-sea trawlers could be deployed in waters off Sind Province in the Arabian Sea (see map). The report recommended that deep-sea fishing ventures be restricted to waters beyond 35 miles of the coast to minimize competition with Pakistani artisanal fishermen.



On the basis of the FAO report, the Pakistani Government decided to actively participate in developing the country's deep-sea fishery. In 1982 and 1983, the Pakistani Government approved joint ventures between private Pakistani fishing companies and companies from North Korea, Singapore, and South Korea. In addition, the Asian Development Bank, the U.N. Development Program, and the European Economic Community provided assistance for a multidonor marine fisheries development project.

No official information on the terms of the joint ventures, or on their results, has yet been made public. The Pakistani press, however, has reported some information, citing unidentified Pakistani Government sources. According to these reports, the three approved joint venture companies obtained licenses for 14 foreign trawlers with another three trawlers that were expected to be authorized later. The number of trawlers deployed in Pakistani waters at any given time is unclear. Depending on the extent of the Pakistani equity in each joint venture, as much as 37 percent of the value of the catch is remitted to the Pakistani partners in foreign exchange; this sum includes a 10 percent royalty payment to the Pakistani Government. The total catch of the three joint ventures during the 18 months preceding March 1984 was 5,500 metric tons, and had an export value of \$4.2 million. Of this total, the Pakistani Government received \$419,000 as royalties. The main species landed were mackerel, ribbonfish, rock cod, squid, and cuttlefish.

The presence of foreign trawlers has raised strong opposition among local fishermen. The Karachi Fishing Boat and Trawler Owners Association has urged the Pakistani Government to suspend the operation of foreign-owned vessels which were claimed to be fishing in waters less than 35 miles from the coast. Fishermen cite the instances when the Pakistani Navy detected six foreign-owned trawlers fishing illegally 35 miles off the Makran coast (see map), an area from which their fishing licenses specifically

excluded them. Also, three South Korean trawlers were seized in May 1984 for violating terms of their licenses and the owners paid fines to secure their release.

The chairman of the Pakistani Seafood Industries Association has also criticized the joint ventures. He argued that the Pakistani Government should concentrate on modernizing the fleet and gear of the traditional fishermen to better enable them to utilize the country's deep-sea fishery resources.

According to the NMFS Foreign Fisheries Analysis Branch, the Pakistani Government's position is complicated by its attempt to impose a new ban on coastal fishing of shrimp and lobster during June and July, as the FAO report had recommended. Artisanal fishermen, who depend largely on the coastal shrimp and lobster catch, claim that they are not overfishing, but that illegal fishing by foreign trawlers is affecting their catch and the decline of the resource. The Food and Agriculture Ministry, which includes the Marine Fisheries Department, is under pressure to review its deep-sea fishing policy and to increase surveillance of foreign trawlers. Inspection procedures have been tightened in recent months and catch reporting requirements strengthened.

Despite the criticism, local observers believe that it is unlikely that the Pakistani Government will be deterred from approving additional joint ventures. According to press accounts, at least two new joint venture proposals, providing for larger Pakistani equity in new joint venture companies than in those currently operating, are being reviewed. Moreover, Government-owned lending institutions are prepared to extend loans to the newly proposed joint venture companies while Pakistani fishing companies will acquire greater experience by drawing on the technical skills and market access derived from the foreign partners. Assuming Pakistani Government's approval, the joint venture agreements will lead to increased fishery catches and export earnings. (Source: IFR 84/53.)

EC, African Nations Expand Fisheries Ties

The European Community (EC) is attempting to alleviate some of the problems of its fishermen by expanding fisheries cooperation with African countries. The EC has already signed agreements with five West African nations (Senegal, Guinea-Bissau, Guinea-Conakry, Sao Tome and Principe, and Equatorial Guinea) (see map) and one East African island nation, the Seychelles in the Indian Ocean.

The agreements provide EC fishermen with increased access to fishing grounds claimed by African nations in exchange for fishing fees and fisheries assistance to those countries (Table 1). Some observers also note that EC-African relations will be significantly expanded once Spain and Portugal enter the European Community because both countries have extensive fisheries relations with many African countries.

Senegal

The EC signed its first fisheries agreement with an African country in June 1979 when a 2-year bilateral agreement with Senegal was concluded. The agreement has been periodically renewed, and the latest revision was signed in January 1984. The agreement's main provisions are:

1) The EC pays an annual \$7.6 million compensation fee to Senegal's Treasurer-General and the State Secretariat for Senegalese Fisheries. Monetary figures in the EC-Senegal agreement are given in CFAF (Central French African Francs) and have been converted to dollars using the exchange rate of 405 CFAF per U.S. dollar, prevailing on 31 December 1983.

2) The EC contributes \$247,000 to finance a Senegalese fisheries program carried out by the Oceanographic Center in Dakar.

3) The EC provides 20 study and training grants for a 5-year period to allow Senegalese fishermen to study in specialized EC fishery schools.

4) EC tuna fishermen pay fees of

about \$6.00 per metric ton (t) of tuna caught by vessels which land their entire catch in Senegalese ports, and \$18.00/t of tuna for vessels not landing their entire catch in Senegal. Other EC fishermen pay fees of \$21 per gross registered tonnage (GRT) per year for vessels landing their entire catch in Senegal, and \$42 per GRT per year for those vessels not landing their catch in Senegal. The higher fees for vessels not landing their catch in Senegal are designed to encourage EC fishermen to process their catch in

Table 1.—Terms of EC fisheries agreements with African countries.

Country	EC payments (US\$1,000)		Vessel fees (SUS/GRT/year)	Fishing fees (SUS/ton)	Max. fishing effort	
	Annual	Other			Capacity (Avg. GRT)	No. of vessels
Senegal	7,600	247	21	¹ 18	² 26,000	
Guinea-Bissau	1,300	220	97	18	³ 14,000	⁴ 50
Guinea-Conakry	616	176	97	18	³ 7,500	⁴ 50
Equatorial Guinea	158			18		² 27
Sao Tome	¹ 158	35		18		² 27
Seychelles	² 265			18		² 18

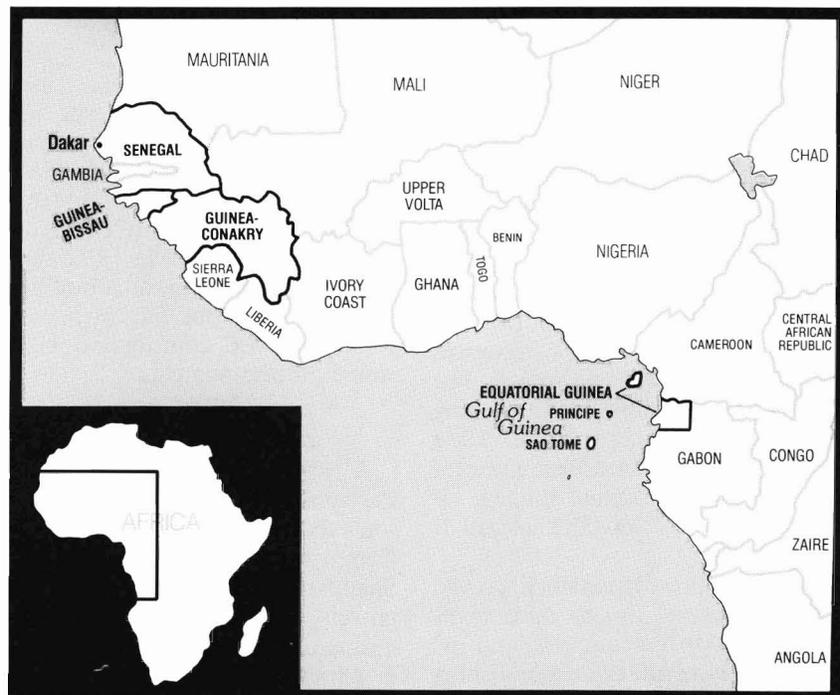
¹Fee for freezer vessels not landing their catch in Senegal; vessels landing their catch in Senegal are charged \$6.00/t of tuna.

²Applies only to tuna vessels.

³Applies only to bottom trawler and other nontuna vessels.

⁴For EC catches of tuna up to 4,000 t/year off Sao Tome and up to 6,000 t/year off Seychelles; EC payment increases proportionately if the catch exceeds 4,000 and 6,000 t, respectively.

Source: *Official Journal of the European Communities*, various numbers.



Senegal (and thus provide employment) rather than take their catch to Europe for processing.

5) Senegal issues licenses to EC vessels with a cumulative annual total of 40,000 GRT. Of this total, 23,000 GRT may consist of tuna freezer vessels which do not land their catch in Senegal, 3,000 GRT may be vessels which land their tuna catch in Senegal, and 14,000 GRT may be other non-tuna vessels.

Guinea-Bissau

The EC signed an agreement with Guinea-Bissau in February 1980 and renewed the agreement in a slightly modified form in March 1983 for an additional 3 years. The agreement allows EC fishermen in Guinean waters to deploy 25 freezer tuna vessels (with an average tonnage of 900 GRT each), 25 pole and line vessels (130 GRT average), and several bottom trawlers with an average annual tonnage of 7,500 gross registered tons. In return, the EC is to pay Guinea-Bissau an annual sum of \$1.3 million, as well as a lump sum of \$220,000 to finance a stock assessment study. EC fishermen pay fees of about \$97 per vessel GRT per year and \$17.60 per ton of fish caught.

Guinea-Conakry

The EC signed an agreement with Guinea-Conakry (the Revolutionary People's Republic of Guinea) in December 1982 for a 3-year period. The agreement is very similar to that signed with Guinea-Bissau and provides that the EC pay Guinea-Conakry \$616,000 per year as well as a one-time sum of \$176,000 to contribute towards a fishery resources program in that African nation. The fishing fees and allowable EC fishing effort are the same as those in the agreement with Guinea-Bissau, except that the average annual tonnage of trawlers is set at 3,000 GRT instead of 7,500 GRT.

The EC has provisionally approved three additional fishery agreements with West African countries, and EC fishermen have already begun fishing off the coasts of these nations accord-

ing to the terms set out in the agreements.

Equatorial Guinea

In July 1983 the EC provisionally approved a 3-year fisheries agreement with Equatorial Guinea. The agreement allows 27 EC tuna fishing vessels to operate off the Guinean coast and requires their owners to pay \$17.60 per GRT per year. In addition, the EC will contribute \$158,000 per year to Equatorial Guinea for fisheries research activities. This contribution applies to annual EC tuna catches of up to 4,000 t. If the quantity of EC tuna catches exceeds 4,000 t, the EC contribution is to increase proportionately (i.e., if the EC tuna catch is 8,000 t, the contribution will be \$316,000).

Sao Tome and Principe

In October 1983, the EC also provisionally approved a 3-year fisheries agreement with Sao Tome and Principe. The terms of the agreement are exactly the same as those set out in the EC-Equatorial Guinea agreement, except that the EC pays an additional one-time sum of \$35,000 to the National Bank of Sao Tome and Principe.

Seychelles

The EC signed a 3-year fisheries agreement with the Seychelles on 18 January 1984 allowing 18 EC tuna freezer vessels to fish off the Seychelles in return for a fee of \$18.50/t of tuna caught. The EC will also pay the Seychelles \$265,000 a year for annual tuna catches of up to 6,000 t. Should the EC catch exceed 6,000 t, the EC contribution will increase proportionately.

D'Ormesson Report

A report prepared by European Parliament Member Oliver d'Ormesson recommends that the European Community use the expected entry of Spain and Portugal into the EC, tentatively scheduled for 1986, as a means of increasing the EC presence in Africa. Spain is the key nation in the report's recommendations because

that country is one of the major nations fishing off both western and southern Africa.

Spain catches more fish by value than any foreign country operating off West Africa and holds second place, after the Soviet Union, in quantity (Table 2). The Spanish catch is greater in value because it is composed largely of such high-valued fishes as tuna, cephalopods, crustaceans, and hake while the Soviet catch is composed mostly of smaller low-value pelagic species. Spain has also concluded fishery agreements (including sales of vessels) with Morocco, Mauritania, Senegal, the Ivory Coast, Equatorial Guinea, Namibia, and Angola.

When, and if, Spain joins the EC, all of its external fishery relations like those of other EC members, will be conducted by the Community. In addition, all current Spanish agreements with third countries will be taken over by the EC upon their expiration. D'Ormesson sees this as an excellent opportunity for the EC to increase its influence in West Africa by entering into a greater number of agreements with more countries of the region.

D'Ormesson recommends that the European Community set up, as soon as possible, a conference between itself, Spain and Portugal, and West African coastal countries, to coord-

Table 2.—Eastern central Atlantic and southeast Atlantic catches by major distant-water fishing country, 1982, in thousands of metric tons.

Country	African area catch		Total
	Western ¹	Southern ²	
U.S.S.R.	956	888	1,844
Spain	444	208	652
Romania	84	81	166
GDR	95	31	126
Polarid		98	98
ROK	86		86
Japan	30	53	83
France	59		59
Bulgaria	7	50	57
Portugal	12	13	26
Other	42	12	55
Total	1,815	1,435	3,250

¹FAO Area 34.

²FAO Area 47

Source: FAO "Yearbook of Fishery Statistics, 1982"

dinate the fishery activities of all parties in the region. The first task of the conference would be to increase the degree of cooperation between the West African countries themselves in order to establish a unified policy for the management of fishery stocks, set fixed tariff schedules, and standardize license fees for foreign fishing vessels. The conference would also address the question of establishing a system of fisheries enforcement to reduce the number of infractions against conservation regulations, currently a serious problem in the region.

D'Ormesson sees a number of benefits to the EC as a result of a coordinated West African policy. First, the presence of the Soviet Union and its allies in the region could be partially balanced by an increased EC role in West African fishery affairs. The Soviet Union is the major foreign fishing nation in the region in terms of quantity of catch, while Romania, the German Democratic Republic, and Poland rank third, fourth, and fifth, respectively (Table 1). These countries have also concluded a number of fishery agreements with West African nations.

The EC, on the other hand, harvests a relatively limited catch in the region, and only France ranks among the top ten foreign fishing nations there by quantity of catch. With the addition of Spain and Portugal, however, the EC would comprise the region's second largest foreign fishing group by volume and the most important by value. D'Ormesson anticipates that the increased EC participation in the region could act to balance the presence and influence of Soviet bloc countries.

Economically, the EC would stand to gain much from increasing its presence in West Africa. The EC members, especially in the Mediterranean, are facing greatly depleted fishery resources, and are eager to add to their available fishing opportunities. Furthermore, many countries, particularly France, have expressed their fears over the possible adverse consequences to their fishing industries when and if Spain and Por-

tugal join the EC. Spain has one of the largest fishing fleets in the world and the French are worried that the Spanish will try to gain access to the fisheries jurisdiction of current EC members once Spain joins the Community. An increase in the Community's fishing effort in West Africa would also increase the EC's available fishery resources. It would also enable the EC to direct the Spanish fleet away from the Community's present fisheries jurisdiction.

Finally, d'Ormesson notes that the

West African countries will benefit from increased EC involvement in regional fisheries. The development of these fisheries can play a large part in aiding the EC efforts, under the Lome Agreements, to improve food supplies available to the African peoples. The report points out that annual per capita foodstuff production in Africa has been declining during the past two decades and that fisheries present a relatively underutilized means to increase the region's food supplies. (Source: IFR-84/29.)

Mexico Encourages Rock Shrimp Fishery

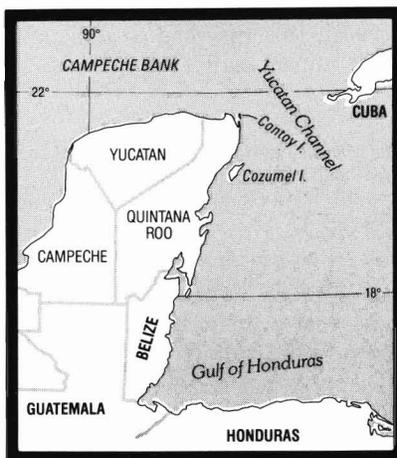
The Mexican Secretariat of Fisheries (SEPESCA) is encouraging cooperative fishermen to develop the Contoy shrimp fishery. Contoy Island is located off the coast of the States of Yucatan and Quintana Roo along the northeastern coast of the Yucatan Peninsula (see map). The shrimp fishery off Contoy is primarily for rock shrimp, *Sicyonia brevirostris*, which was conducted by U.S. fishermen until they were phased-out of the Mexican shrimp fishery in 1980. This fishery is much more difficult to conduct than that for other shrimp species because trawling on rocky bottoms often tears up trawls.

Mexican fishermen until recently have taken only small quantities of the species.

SEPESCA has held meetings with cooperatives on the rock shrimp fishery. Cooperative leaders, throughout The Federation de Cooperativas Pesqueras de Quintana Roo, have expressed an interest in developing the fishery. Following the meetings between SEPESCA and the cooperative leaders, the Banco Nacional Pesquero y Portuario (BANPESCA) agreed to transfer 50 shrimp trawlers to three cooperatives in Quintana Roo. The transferred trawlers had been repossessed by BANPESCA from other cooperatives which were not meeting mortgage payments.

The three cooperatives in Quintana Roo operated only 25 shrimp trawlers as of December 1983. The cooperatives have an additional seven trawlers, but four were in such poor condition that they are not serviceable. The other three trawlers are new, but BANPESCA had not yet provided credits needed to purchase trawl nets and other gear.

The 50 additional trawlers will increase the cooperative shrimp fleet in the state to 75. If the needed credits are provided by BANPESCA to repair old and equip the new vessels, as many as 80 trawlers may be deployed off Contoy and Quintana Roo by the end of 1984. Some observers point out, however, that



based on previous experiences, some of the transferred trawlers may be in poor condition and need overhauling before they can be used in the fishery.

Mexican press reports mention that one reason for SEPESCA's desire to develop the Contoy fishery is the fact that U.S. fishermen once fished there and continue to be interested in the fishery. One Mexican source reports that U.S. fishermen contacted Mexican officials in 1983 concerning U.S. access to the Contoy grounds. The Mexican press also reports that the Mexican Navy has intensified patrols off Contoy to prevent any foreign fishing. (Source: IFR-84/26.)

Mexico Starts New Gulf Longline Fishery

Mexico has initiated a longline tuna fishery in the Gulf of Mexico. The fishery is being conducted by Productos Pesqueros de Alvarado (PPA), an affiliate of the giant, state-owned fishing company Productos Pesqueros Mexicanos (PPM). PPA officials report that their vessels, operating from the Alvarado fishing port near Veracruz¹ would land about 900 metric tons (t) of tuna and other species in 1983. The NMFS Branch of Foreign Fisheries Analysis believes there is a substantial incidental billfish catch, but no statistical data is available on the quantities involved.

The new Mexican fishery was pioneered by a Captain Izumi, a Mexican citizen of Japanese ancestry, who for years tried to convince government officials, cooperative members, and private fishermen to initiate a tuna longline fishery, but with little success. The longline techniques that Izumi recommended were new to Mexican fishermen who hesitated to enter an unfamiliar, new fishery.

PPM finally decided, as a result of Izumi's recommendations, to begin test fishing in 1982. This exploratory

¹Alvarado was the first commercial fishing port built by Mexico and is still the most important Gulf port for Mexican finfish fisheries. About 60 medium and large vessels are currently based there.

fishing was conducted by PPA which attracted fishermen by outfitting a boat, guaranteeing a minimum salary, and promising to purchase the catch at 7.50 pesos² per kilogram. The PPA campaign began in July 1982 and the results proved so promising that the fishermen themselves asked to participate in future fishing trips. The fishermen asked that their compensation be changed from a minimum salary to a flat purchase arrangement of 30 pesos per kilogram. The fishermen only landed 90 t, but the results were promising enough for PPA to plan commercial operations in 1983.

PPA's 1983 longline operations began in May and continued into the fall. The company deployed two old Dutch-built trawlers (26 m long) especially rigged for longlining; the *Tiburón V*, a new Japanese-built longliner³ (44 m long); and several U.S.-built fiberglass boats (14.6 m long)⁴ The Dutch trawlers reported catches of 30 t in 2-week trips⁵. The *Tiburón V* reported catches of 160 t by mid-July. The small fiberglass boats reported catches of over 10 t each in 6- to 8-day trips.

PPA was reportedly paying the fishermen 50 pesos per kilo for tuna and shark near the end of the fishing period (probably for billfish, also, although actual confirmation was not available). PPA covered the costs of maintaining and repairing the vessels, supplying them, and paying off the remaining mortgage, if any. The fishermen reported substantial earnings of more than 200,000 pesos per month. Some fishermen complained, however, that they had to sometimes spend unnecessarily long periods in

²The Mexican peso has fluctuated widely on international markets since January 1982. The free market rate was about 150 pesos to the U.S. dollar late last year.

³The *Tiburón V* is one of a series of 10 longliners built in Japan. Most of the other vessels are currently deployed in shark longlining in the Pacific.

⁴These vessels were originally built primarily for snapper fishing. Additional information on the fiberglass boats can be obtained by requesting "Mexico. U.S. Built Fishing Boats Prove Successful" (IFR-83/108) from your local NMFS Statistics and Market News Office.

⁵Nine actual fishing days.

port at Alvarado, primarily because of an ice shortage. PPA officials were especially pleased, not only at the excellent catch rates, but because much of the yellowfin tuna catch was the more easily marketed larger fish, averaging 40 kg. PPA had also requested that PPM provide five additional longliners, which would enable the company to substantially increase its fishing effort. (Source: IFR-83/113).

Poland Transfers Fishing Efforts to South America

The Polish fishing industry was adversely affected when the United States denied it access to U.S. fishing grounds after the 1981 declaration of martial law in Poland. The U.S. 1981 catch allocation to Poland was 230,000 tons. Poland only partially succeeded in finding alternative fishing grounds and, as a result, the Polish 1982 fisheries catch was only 582,000 t, an 8 percent decline from the 630,000 t taken in 1981.

Many trawlers displaced from U.S. waters were deployed in high-seas fisheries off Peru, Chile, and Argentina. Complete catch statistics for 1983 were not yet available, but the Poles claim to have developed new high-seas fishing methods and will probably report improved results in 1983. Polish Government officials claim that their squid catch alone off Argentina exceeded 100,000 t in 1982 and that squid has become a major export commodity.

While improved fishing methods

Note: Unless otherwise credited, material in this section is from either the Foreign Fishery Information Releases (FFIR) compiled by Sune C. Sonu, Foreign Reporting Branch, Fishery Development Division, Southwest Region, National Marine Fisheries Service, NOAA, Terminal Island, CA 90731, or the International Fishery Releases (IFR), Language Services Biweekly (LSB) reports, or Language Services News Briefs (LSNB) produced by the Office of International Fisheries Affairs, National Marine Fisheries Service, NOAA, Washington DC 20235.

may have helped in 1983, the Poles also benefited from the British 150-mile Exclusion Zone around the Falkland Islands which had prevented

the Argentines from fully enforcing their 200-mile zone. Polish officials say that they have also developed new processing techniques for both squid

and krill which, combined with administrative reforms, should help make 1984 another successful year for Polish fisheries off South America.

Ecuador Tries New Shrimp Export Rules

The Ecuadorean Government implemented new shrimp export regulations on 23 January 1984 making exports of small shrimp, selling below a new minimum export price, impossible. The regulations were sharply criticized by the country's fishing industry and caused a massive backlog of shrimp in Ecuadorean ports. One press report indicated that, after a week, nearly 700 metric tons (t) of shrimp worth \$3.5 million was being held in Ecuadorean ports. Finally, on 30 January Minister of Natural Resources, Gustavo Galindo, suspended the regulations, allowing exports to resume. The Government and the industry then attempted to develop more workable export regulations.

The Government's initial decree established a minimum reference price for shrimp exports at \$4.50 per pound, thus eliminating exports of smaller shrimp. Ecuadorean shrimp is sorted into 17 different sizes. Most of Ecuador's shrimp are of the smaller size produced by shrimp farmers in the booming shrimp culture industry. Pond operators believe that they can maximize profits by producing primarily the smaller shrimp.

As a result, pond operators found that, after 23 January they could only export 6 of the 17 sizes. The new Government regulations were an effort to combat the common practice of "under-invoicing" exports, whereby an exporter reports to the Government an export price lower than the true one, and then either keeps the profits in a U.S. bank account, or sells the dollars in Ecuador at the free market rate of 90 sucres to the dollar. The Government only gives shrimp exporters 60 sucres for each dollar remitted through the Central Bank.

The Government would like pond

operators to diversify production and raise more of the larger shrimp. The larger sizes (21/25 shrimp per pound and down) command higher market prices of from \$5.30 to over \$8.00. Government officials claim that if shrimp farmers would concentrate on producing the larger sizes, greater revenue for the country would eventually result.

By rearing the shrimp longer, shrimp farmers would harvest their ponds only three times per year, instead of the current average of six times per year. Government officials maintain that less frequent harvests would also be ecologically beneficial because they would not exhaust the supplies of "seed" (post-larvae) that are currently collected in the estuaries to stock the ponds. Shrimp fishermen and some Government biologists are concerned about the extensive harvest of post-larvae in the estuaries.

Shrimp exporters, on the other hand, were sharply critical of the new regulations. They claimed that the smaller shrimp (above 21/25 shrimp per pound) accounted for 85 percent of exports. In 1983, shrimp was Ecuador's second most important export, after petroleum, constituting 8 percent of all exports, and earning approximately \$180 million.

The large shrimp (21/25 per pound and down) are mostly caught at sea, and industry spokesman like Agronomist Hugh Alban Nugues of the Federacion Ecuatoriana de Exportadores de Camaron, charged that only 4 of the 58 companies currently exporting shrimp have the capacity to fish for shrimp in the open sea. The 28 January regulations would thus have resulted in an export monopoly for a small number of companies.

The shrimp farmers also complained that if they were required to keep their shrimp in ponds for longer periods (three harvests per year instead of an average six), higher feed

costs, equipment needs, and increased maintenance costs would make it unprofitable for them to stay in business. Some were also concerned about the greater "risks" associated with culturing shrimp for longer periods and using feed.

They also stated that requiring them to sell 85 percent of the country's number two export product domestically, at local prices, was a ridiculous way to deal with the underinvoicing problem. (An Ecuadorean Government decree issued in October 1983 had reduced the amount of shrimp which had to be sold locally to only 2.7 percent of domestic production.) The culturists also pointed out that the regulations could affect the jobs of over 300,000 Ecuadorean workers who are directly or indirectly involved in the industry. (Source: IFR-84/23).

Japan Reduces Tariffs on Three Fish Products

Japan has announced the reduction of import tariffs on three fishery products, effective 1 April 1984. Import tariffs on salted salmon dropped from 15 percent to 12 percent, those on salted salmon roe from 5.9 to 5 percent, and those on fresh, chilled and frozen crab from 7.5 to 6 percent.

Mexico Sets Campaign to Protect Sea Turtles

The Mexican Government has initiated a new program to protect turtles in the Caribbean coastal state of Quintana Roo. Restaurants have been prohibited from including turtle meat and eggs on their menus. Turtles protection centers are scheduled to be established at Cabo Catoche, Contoy, and Isla Mujeres to hatch eggs and raise the hatchlings.