The Tuna Fisheries of Cape Verde and Senegal

Cape Verde

The tuna fishery of Cape Verde is yet small but plays a major role in the country's fishing industry industry which caught only about 8,300 metric tons (t) of fish in 1978, (6,300 t were caught by artisanal fishermen and 2,000 t by commercial fishermen). The two most important fisheries are shellfish (shrimp and lobster) and tuna, but precise catch data is unavailable.

Even though the catch is small, the fishing industry is a vital sector of the Cape Verde economy. Fish is a substantial proportion of the protein consumed in Cape Verde. Fishery products are also the most important single export commodity, accounting for about 30 percent of the country's total exports in 1978. When Cape Verde's exports of used cars and scrap iron are excluded, fishery products account for over 70 percent of the country's domestically produced exports.

Tuna is the single most important species caught by Cape Verde fishermen. It makes up most of the commercial catch and is also important to artisanal fishermen. Most of the tuna caught since 1976 has been skipjack tuna.

Note: Unless otherwise credited, material in this section is from either the Foreign Fishery Information Releases (FFIR) compiled by Sunee 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) or Language Services Biweekly (LSB) reports produced by the Office of International Fisheries Affairs, National Marine Fisheries Service, NOAA, Washington, DC 20235.

Fleet

Cape Verde's commercial tuna fleet consists entirely of pole-and-line vessels. Most are 15 m vessels used for fishing within 5 miles of the islands. The fishermen return to port daily and do not carry ice. The only large vessels, three 34 m vessels with carrying capacities of 200 t, are owned and operated by the state-owned company, INTERPESCA[1], off Cape Verde from June to December.

Beginning in 1979, INTERPESCA deployed its vessels off Angola during the remainder of the year. The NMFS Division of Foreign Fisheries Analysis believes the catch off Angola is mostly landed and processed in Angolan ports. The INTERPESCA vessels were originally purse seiners, but have been converted to pole and liners. The Government has been organizing a new company, PESCANAVE (footnote 1), which plans to obtain small multi-purpose vessels with carrying capacities of about 15 t to fish for both tuna and demersal species.

Processing

There are five canneries and three cold stores in Cape Verde. The canneries process tuna received from both artisanal and commercial fishermen, and have capacities ranging from 2 to 5 t per day[2]. Cape Verde has three major cold stores, all of which are believed to be located at the port of Mindelo. FRICAP (footnote 1) operates a 3,000 t cold store which in the future will be used for the domestic market. INTERMAR (footnote 1) will operate a new 6,000 t cold store which will be used primarily for exports. The INTERMAR cold store is being financed by a $3.2 million grant from the Dutch Government and the contract has been awarded to a Dutch refrigeration company, Grenco. The third cold store is privately owned and has a capacity of 600 t.

[1]A Government-owned holding company, INTERBASE, manages 6 subsidiary companies in the fisheries sector, including PESCANAVE, INTERPESCA, FRICAP, and INTERMAR.
[2]It is not known whether this quantity is the live weight of the fish or the canned and frozen tuna.

Exports

Almost all of Cape Verde's tuna catch is exported. The canneries export primarily to Europe. FRICAP and the smaller cold storage company export to Portugal and Italy for canning in those countries. Unconfirmed reports indicate that INTERBASE has negotiated a purchase agreement with a U.S. company, so exports in the future may be directed to the United States. Tuna exports totaled $360,000 in 1978, nearly 70 percent of total fishery exports of $525,000 (Table 1). Export earnings declined in 1978, primarily because of poor tuna catches. Unconfirmed reports indicate that catches in 1979 and early 1980 were substantially above 1978 levels so exports probably increased during those periods.

Development

The Government of Cape Verde took two major steps in the late 1970's which indicate the increased emphasis which it is placing on fisheries. The first step was to declare a 200-mile Exclusive Eco-

Table 1.—Cape Verde fishery export values (US$), 1976-June 1979.

Commodity	Export values (× 1,000) 1976	1977	1978	1979[1]
Tuna				
Canned	$156.2	$384.6	$198.4	NA[2]
Frozen[3]	196.3	127.3	162.2	$88.5
Total	352.5	511.9	360.6	NA
Other finfish	7.7	9.3	—	NA
Shellfish	242.0	131.9	162.7	79.0
Fish meal	28.4	16.6	2.3	5.2
Total	$630.6	$669.7	$525.6	NA

[1]January to June.
[2]NA=Not available.
[3]Includes an unknown (but probably small) quantity of species other than tuna.
Source: NMFS Division of Foreign Fishery Analysis estimates.

nomic Zone (EEZ) in February 1978. Since that time, the Government claims to have been conservative in allocating fishing rights within the EEZ. It is not known which, if any, countries have applied for Cape Verde licenses. The second step was to join the International Commission for the Conservation of Atlantic Tunas (ICCAT) in October 1979, making Cape Verde the 19th member of the Commission.

The Government of Cape Verde plans to expand its tuna fishery. Foreign nations desiring to fish in the Cape Verde 200-mile EEZ will be required to assist Cape Verde develop its fishing industry, and land part of their catch in Mindelo for transshipment through Cape Verde. The country has negotiated agreements with FAO, the Arab Bank for the Economic Development of Africa, and the Governments of Abu Dhabi and Saudi Arabia to finance the purchase of tuna vessels. Cape Verde hopes that these vessels will enable the country to catch about 40,000 t of tuna annually. Although achieving that goal and expanding port facilities at Mindelo into a major tuna transshipment center could take several years. The Government's decision to promote the industry's development, however, may eventually make Cape Verde's tuna fishery one of the most important in Africa. (Source: IFR-80/180.)

Senegal

The Republic of Senegal has one of the largest and most developed fishing industries in West Africa. Senegal's 700 km coastline borders on waters that, because of seasonal coastal upwelling, contain some of West Africa's richest fishery resources. Fisheries represent one of the most important sectors in Senegal's economy, accounting for about 7 percent of the gross domestic product. The fishing industry supplies food for domestic consumption and is a significant source of foreign exchange. In recent years government policy has favored commercial fishing over artisanal fishing, although both have been accorded high priority in Senegal's development plans. Senegal's highly developed tuna fishery, one of West Africa's largest, is dominated by the commercial sector.

Vessels, Ports, and Season

Senegal was one of the first West African countries to acquire commercial tuna vessels. Some of the earliest vessels were obtained from the Soviet Union, which delivered 10 vessels in all by 1975. The Senegalese fishermen, however, encountered significant maintenance problems with the Soviet vessels and claim they were unsuitable for local conditions. Senegal now relies primarily on West European and U.S. shipyards for its tuna vessels.

The Senegalese commercial tuna fleet in 1979 consisted of 34 vessels[3], 31 pole-and-line and 3 purse seiners. French interests own 30 of the pole-and-line vessels; the remaining vessels are Senegalese-owned. The number of vessels in Senegal's tuna fleet has declined since 1974, when there were 42, 26 of them French-owned.

The three Senegalese purse seiners were built in the United States during 1975. The *Jilor, Jofondor,* and *Niomre* have carrying capacities of 800 t each, a top speed of 15 knots, and an operating range of 7,000 n.mi. Reportedly, all three vessels experienced considerable maintenance difficulties in 1979 and it appears that one was inoperable for most of the year.

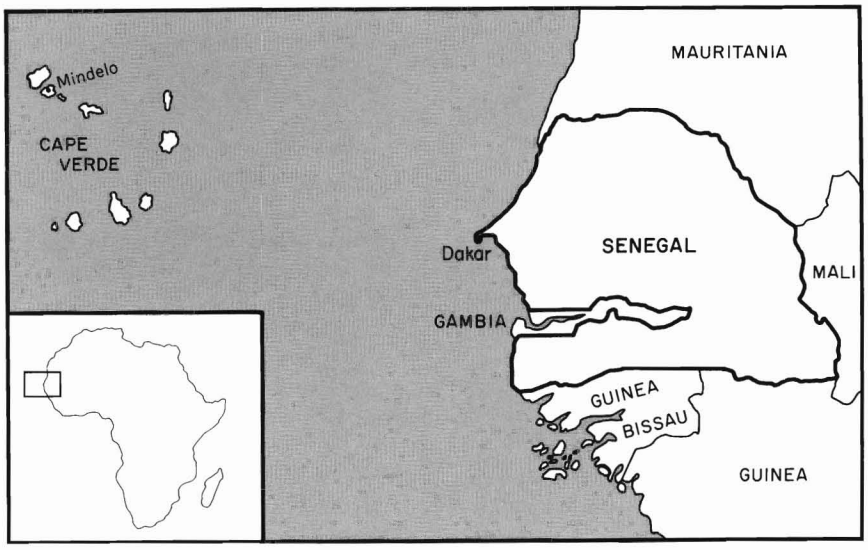
Senegal's tuna fleet is based in the capital city of Dakar (population 800,000), long a commercial center in West Africa. Dakar offers excellent cold storage and freezing facilities and maintains extensive communication and air links with other areas of the world. A new fishing pier was completed in October 1980 after 3 years of construction. Reportedly one of the most modern complexes of its kind in West Africa, the pier is equipped with facilities to provide water, oil, electricity, and telephone service to fishermen.

Senegalese fishermen report their largest catches during the summer months from May to October, although an occasional large catch in other months is not unusual. In 1978, 80 percent of Senegal's total tuna catch occurred during the summer season; in 1979, 93 percent of the tuna was caught during the same period. Senegal's tuna season corresponds to the cycles of upwelling which begin in May when the prevailing northeasterly tradewinds shift, and continues until November.

Species

Skipjack and yellowfin tuna are the most important species caught by Senegalese fishermen. Yearly variations in

[3]It is not known whether these are French-flag vessels based in Senegal or Senegalese-flag vessels owned by the French.



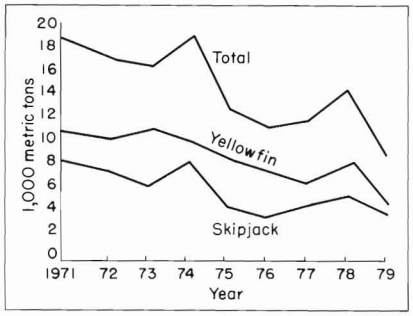


Figure 1.—Fluctuations in the Senegalese tuna catch, 1971-79.

Table 2.—Senegal's tuna catch, by species, 1971-79.

	Catch (t)			
Year	Yellowfin	Skipjack	Bigeye	Total
1971	10,300	8,100		18,400
1972	9,900	7,300		17,200
1973	10,400	6,300		16,700
1974	9,937	9,365	64	19,366
1975	8,325	4,312	19	12,656
1976	7,409	3,504	73	10,956
1977	6,847	5,055		11,902
1978	8,563	6,469		15,032
1979	4,785	4,231	99	9,115

Source: Ministry of State for Marine Fisheries, Directorate of Oceanography and Marine Fisheries, "Resultats Generaux de la Peche Maritime Senegalaise," 1979, and FAO "Yearbook of Fishery Statistics," various years.

Table 3.—Senegal tuna cannery production, 1978-79.

		Production (t)			
		1978		1979	
Company	Capacity	Amt.	%	Amt.	%
SAPAL	10,000	7,776	40	6,976	51
SNCDS	10,000	9,346	48	5,372	39
SAIB	3,500	1,839	10	1,438	10
Other		423	2		
Total	23,500	19,384		13,787	

Source: Ministry of State for Marine Fisheries, Directorate of Oceanography and Marine Fisheries, "Resultats Generaux de la Peche Maritimes Senegalaise, 1979."

the skipjack catch have paralleled changes in the tuna catch as a whole (Fig. 1). Skipjack tuna comprised 43 percent of the catch in 1978 and 48 percent in 1979. The yellowfin catch, however, has been more stable, particularly from 1974 through 1978. Yellowfin tuna composed 57 percent of the catch in 1978 and 52 percent in 1979. A third species found in Senegalese waters, bigeye tuna, is of negligible significance.

Catch and Landings

Senegal's tuna catch has fluctuated greatly over the past 9 years and particularly since 1974. From a record total of almost 19,400 t in 1974 the catch declined by 33 percent in 1975 and a further 11 percent in 1976 (Table 2). These declines were at least partially due to labor and managerial problems experienced by the state fishing company, SOSAP (Societe Senegalaise d'Armament de la Peche). SOSAP also encountered difficulties with its Soviet-built purse seiners, many of which were idled for long periods of time. In 1977 and 1978 and tuna catch increased, but in 1979 it fell again, by almost 40 percent from 1978 levels, and was the smallest catch since 1966. This decline is at least partially attributable to hydrological conditions which affected tuna migratory patterns during most of the year in certain areas along the West African coast.

Almost all of the Senegalese tuna catch is landed at Dakar. In addition, foreign vessels fishing off Senegal are required to land a portion of their catch in Dakar also. Spanish vessels, as stipulated by a bilateral agreement between Spain and Senegal, landed 2,500 t of tuna in Dakar in 1978 and 2,100 t in 1979. Vessels of the French company SOVETCO (Societe de Vente de Thon Congele), which manages French, Ivorian, and Moroccan tuna vessels off West Africa, also land part of their catch in Dakar. SOVETCO vessels landed 1,850 t in Dakar in 1978 and 2,600 t in 1979. In addition to the landings, foreign fishermen also transship tuna through Dakar, the second most important transshipment point in West Africa.

Processing

Senegal has three main tuna canneries, all located in Dakar and operated by joint Senegalese-French companies. The three canneries are the Societe Africaine de Produits Alimentaires (SAPAL), the Societe Nouvelles des Conserveries du Senegal (SNCDS), and the Societe Africaine d'Industrie de Bois (SAIB).

SAPAL, a subsidiary of the French firm Saupiquet, has a production capacity of 10,000 t per year. SAPAL, in spite of overall catch declines, was the only company of the three to expand its share of the tuna processing market in 1979 (Table 3). The decision by foreign vessels to sell most of the tuna they landed in Dakar to SAPAL accounted for much of the company's success in 1979. Spanish vessels sold almost 96 percent of their tuna landed in Dakar to SAPAL, whereas the previous year this tuna had been processed by SNCDS. SAPAL also canned over 50 percent of the tuna landed in Dakar by SOVETCO vessels.

SNCDS, with a production capacity of 10,000 t per year, saw its share of Dakar's tuna processing market decrease sharply in 1979. SNCDS was greatly affected by the 1979 catch declines and the Spanish decision to switch their tuna sales to SAPAL. SNCDS continued to process a large portion (37 percent) of SOVETCO's Dakar tuna landings, however.

SAIB, the third important processing company, has a production capacity of 3,500 t per year. SAIB handled the same percentage of the tuna canned in both 1978 and 1979. SAIB received 10 percent of the catch landed by SOVETCO vessels in 1979.

Exports

Almost all the tuna landed and processed in Senegal is exported, primarily to France. Tuna shipments to France totaled about 12,000 t (almost 99 percent) in 1978 and 11,300 t (almost 96 percent) in 1979. The Federal Republic of Germany purchased most of the remainder, about 150 t (1 percent) in 1978 and 550 t (4 percent) in 1979. Other European and African countries accounted for negligible quantities in both 1978 and 1979.

Senegal has deployed its three tuna purse seiners in the Eastern Pacific. The NMFS Division of Foreign Fisheries Analysis believes that much of the catch of these vessels in transshipped in Panama or Mexico and exported to the United States. Senegalese tuna exports to the United States were 8,750 t in 1979 (Table 4). During 1979, Senegal failed to provide the National Marine Fisheries

Table 4.—Senegal's tuna exports to the United States, by species, 1978-79.

Species	Exports to U.S. (t) 1978	1979
Yellowfin tuna	630	2,250
Skipjack tuna	1,050	6,500
Total	1,680	8,750

Source: U.S. Department of Commerce, Bureau of the Census.

Service (NMFS) with the information necessary to ascertain whether its purse seiners were fishing in a manner that did not result in porpoise mortality greater than that allowed U.S. fishermen. As a result of NMFS' inability to determine compliance with U.S. regulations, the United States embargoed further Senegalese exports of yellowfin tuna in February 1980.

Foreign Fishing and International Agreements

Senegal declared a 200-mile exclusive economic zone (EEZ) and a 150-mile territorial sea on 1 April 1976. To patrol these waters, Senegal purchased three fast patrol vessels in 1977 from the British company Fairey Marine Ltd. The patrol vessels, armed with a single 20 mm machine gun and 3 light machine gun mountings, were designed primarily for fisheries enforcement. Senegal licenses vessels of several countries to fish off its coast, but only Spanish and French fishermen catch tuna.

Spain and Senegal first signed a bilateral fisheries agreement in Dakar during 1975. In exchange for fishing rights Spain agreed to land a percentage of the tuna it caught in Senegalese waters at Dakar and to train a certain number of Senegalese fishermen. Senegal also received credits for the purchase of vessels and fishing equipment in Spain, and tuna processed in Senegal was allowed duty-free access to the Spanish market. Senegal was not satisfied with the terms of the agreement and, when it expired in June 1979, refused to renew it. After 6 months of negotiations, the two countries signed a new agreement in January 1980 in which Spain agreed to pay for fishing privileges rather than extend credits, and to provide technical assistance in fisheries development.

France and Senegal signed a bilateral fisheries agreement in Dakar in 1974. Under this accord, France loaned Senegal $9 million for fisheries development. All French fishing vessels, with the exception of sardine seiners, were required to purchase Senegalese licenses. French tuna vessels which did not land their catch in Senegal paid higher licensing fees than others, and Senegal's tuna exports were allowed duty-free entry into the French market. The French-Senegalese agreement was superceded in 1979 by Senegal's fisheries agreement with the European Economic Community (EEC).

The EEC and Senegal signed a fisheries agreement in June 1979 after the EEC assumed responsibility for the international fishery relations of its member states. The agreement was the EEC's first with an African country. Vessels of EEC-member countries were granted fishing rights in exchange for the payment of precisely defined fees and an EEC grant of $11.4 million for Senegal's fisheries development. Like the previous agreement with France, EEC fishermen who land their catch in Senegal pay a lower licensing fee. France is the only EEC member with tuna vessels deployed off Senegal.

The Soviet Union and Senegal maintained extensive fishery relations until 1976. The Senegalese state fishing company, SOSAP, created during the 1960's, received Soviet financial and technical assistance. In 1964, the Soviet Union and Senegal reached an agreement, formalized in 1965, whereby the U.S.S.R. agreed to provide $6.7 million in low-interest loans for the building of 10 tuna vessels and the construction of a tuna cannery in Dakar. Fishery relations between Dakar and Moscow deteriorated during the 1970's, however, and reached a low point when SOSAP went bankrupt in 1976. Much of the blame for SOSAP's financial failure fell on the Soviet Union, which was accused of having provided vessels that were too small and inefficient, required too many repairs, and were wholly unsuited to local fishing conditions. Reportedly, the catch of seven of the Soviet vessels was only 2,000 t of tuna in 78 days, compared with 2,450 t for a single French vessel in only 30 days. In addition, Senegal cited lengthy delays in delivery of the vessels as a reason for SOSAP's bankruptcy. The problems encountered by Senegal in its fishery relations with the Soviet Union are significant because the Soviet Union is building a fleet of tuna purse seiners which could be deployed off the coast of West Africa in the future. (Source: IFR-80/177.)

Norway Nabs Fish Law Violators

Of the 1,000 inspections of foreign fishing vessels undertaken by the Norwegian Coast Guard last year, 273 violations of the law were registered. Only 14, however, resulted in arrest and prosecution.

Danish fishermen headed the list of those who violated the fishing and zone regulations in 1980, but British and West German fishermen were also included. East Germans and Poles were more inclined to respect the law, according to the Norwegian Information Service. Most of the violations took place off the coast of south Norway.

The violations ranged from small offenses such as failing to keep records of catches and failing to report according to the fisheries regulations, to serious violations such as the use of prohibited equipment. This last category can include the use of fine-meshed nets or tightening of the trawl while fishing.

The chief of Norway's Coast Guard Inspectorate, Nils A. Tiltnes, reported that there were relatively few cases involving ships that have no right whatever to be in the Norwegian zone. However, in this year there have been a number of incidents of fishing vessels from EEC countries which have continued unlawful fishing in the Norwegian zone after the so-called EEC fishing was halted.

The majority of cases are minor offenses and the Norwegian Coast Guard

then gives an oral or written warning. Serious offenses result in arrest and the case is transferred to police authorities ashore. The Coast Guard consists of 14 ships and will receive three new ships this autumn. These new vessels will be the largest in the Norwegian navy and will carry British helicopters. Each ship will cost about U.S. $40 million.

The Distant-water Fisheries of Korea

The Republic of Korea's (ROK) most important fishing area is its coastal waters and the waters adjacent to its coastal waters in the Yellow Sea, the East China Sea, the Sea of Japan, and the Pacific Ocean (FAO statistical area 61). Until 1970, all of the Korean fisheries catch was taken in that area. Korea's first major distant-water fishing effort was tuna fishing in the Atlantic and the Southwest Pacific. By 1975, however, Korea had deployed its vessels on all major fishing grounds of the world, except in the North Atlantic.

The Korean fishing industry, like fishing industries in other distant-water fishing countries, has begun to show the impact of the enforcement of 200-mile zones by coastal countries. After several years of rapid growth, the ROK fisheries catch declined in 1978 (Table 1). The catch totaled only 2.35 million metric tons (t) in 1978, principally because the Soviet Union declared a 200-mile Exclusive Economic Zone (EEZ) in 1977 and expelled Korean fishermen from what had become an important pollock fishing ground for them. Nonetheless, the Northwest Pacific (FAO area 61) remains the ROK's most important fishing area, producing 80 percent of the total ROK catch. In 1978, ROK fishermen caught 1.9 million t of fish in FAO Area 61, which included 250,000 t of Alaska pollock, 200,000 t of filefish, 200,000 t of sardine and anchovies, and 80,000 t of flatfish and croakers.

Korea's most important distant-water grounds are the Central Atlantic (FAO statistical areas 31 and 34), the Northeast Pacific (FAO statistical area 67), the Southwest Pacific (FAO statistical area 81) and the Indian Ocean (FAO statistical areas 51 and 57).

Table 1.—Republic of Korea fisheries catch by FAO statistical area[1], 1970-78

Geographical area	FAO area[1]	Catch (× 1,000 t) per year								
		1970	1971	1972	1973	1974	1975	1976	1977	1978
Korea: inland waters	04	0.5	0.9	1.5	1.6	1.3	8.8	15.0	25.9	32.9
Arctic	18									
Antarctic										
Atlantic	48									
Pacific	88									
Indian Ocean	58									
Atlantic										
Northwest	21							6.5	0.9	
Northeast	27									
W. Central	31		3.3	4.0	2.2	4.4	8.9	8.9	7.2	3.3
E. Central	34		39.9	40.1	64.2	75.5	97.2	105.0	99.0	94.3
Southwest	41						2.7	2.7	10.6	6.8
Southeast	47						1.9	1.8	0.3	
Pacific										
Northwest	61	842.1	981.2	1,234.2	1,545.8	1,859.5	1,914.6	2,034.7	2,029.5	1,914.0
Northeast	67						3.3	109.2	64.1	116.6
W. Central	71						1.6	16.5	15.6	16.5
E. Central	77						8.4	31.9	24.7	12.2
Southwest	81		30.3	40.5	43.6	44.3	38.5	25.7	66.3	54.3
Southeast	87							0.05	0.2	17.8
Mediterranean[2]	37							1.4		
Indian Ocean										
Western	51		16.8	21.0	26.4	38.4	35.1	30.0	60.4	63.2
Eastern	57						12.8	16.6	14.3	18.8
Total[3]		842.6	1,072.4	1,341.3	1,683.8	2,023.4	2,133.4	2,405.3	2,419.0	2,350.8

[1]Source: FAO "Yearbook of Fishery Statistics," 1975 and 1978.
[2]Includes the Black Sea.
[3]Totals may not agree due to rounding.

Central Atlantic

ROK catches in the Central Atlantic, primarily off West Africa, totaled 97,600 t in 1978. Most of the catch was tuna and billfish (32,000 t), and octopus and squid (31,000 t).

Northeast Pacific

ROK catches in the Southwest Pacific, primarily off New Zealand, declined in 1978 to 54,300 t. Tuna and squid groundfish stocks they could no longer fish in the Soviet 200-mile EEZ. ROK catches during 1978 in this area totaled 116,000 t, a new record. However, the U.S. and Canadian 200-mile fishing jurisdictions extend over much of the rich fishing grounds of this area and the ROK must continue to receive allocations to fish within the U.S. and Canadian 200-mile zones if it is to maintain this fishery.

Southwest Pacific

ROK catches in the Southwest Pacific, primarily off New Zealand, declined in 1978 to 54,300 t. Tuna and squid (20,000 t) are the most valuable species caught. Miscellaneous demersal and pelagic species provide another 34,000 t of fish. The ROK fishery in this area will probably decrease as foreign fishing is phased out by the New Zealand Government.

Indian Ocean

The ROK fleet caught a record 82,000 t of fish in the Indian Ocean during 1978, more than 80 percent of which was tuna and billfish. While Korean tuna longliners are deployed throughout the Indian Ocean region, the only countries within whose claimed waters ROK fisherman operate with the consent of the coastal country are the Seychelles and Australia. (Source: IFR-81/28.)