

## New Fisheries Development Program Announced by FAO

A \$35 million program for developing countries with extended fishing limits to help them benefit from their new resources has been announced by the United Nations Food and Agriculture Organization (FAO). Designed to respond to urgent requests for help from developing coastal states, the program covers every aspect of fisheries management, from the framing of basic policy to resource assessments and advice on legal, financial, and marketing questions.

Kenneth C. Lucas, Assistant Director-General of FAO's Fisheries Department, said it was the view of the Director-General that the consensus on 200-mile economic zones reached at the UN Law of the Sea Conference in New York gave developing coastal states an unprecedented opportunity to build up their fisheries as a valuable food source for domestic use and for export and to take a greater share of the total world catch of over 70 million tons a year.

"If all coastal states declare 200-mile zones, an area almost equal to the earth's land surface will come under national jurisdiction for the first time. Without efficient management, these zones could become the setting for the same tragedies of overfishing and economic collapse that occurred in some coastal areas before the extension of coastal state jurisdiction. We now have a definite but shortlived opportunity to build a base for stable fisheries development," he said.

Lucas said the FAO program will include both medium and long-term measures. The Organization will give immediate priority to assessing fisheries development opportunities and to comprehensive analyses of pol-

icy problems throughout the world. Work in this field is already under way in Malaysia, West Africa, the Philippines, and Seychelles.

Over the longer term FAO will provide specialized advisory and technical assistance to help nations assess their fisheries resources and the best use that can be made of them. Assistance of this type has already been offered to Burma, Sierra Leone, Guinea, Indonesia, Malaysia, Thailand, and the Philippines.

The Organization will also be supplying expert advice, again on request, concerning legislation in management of fisheries.

Lucas said FAO, with 30 years of experience in fisheries management and development throughout the world, was in a unique position and had a special mandate to conduct programs of this type. The Organization already has well-established regional programs in the South China Sea, the West African Coast, the Indian Ocean, and West Central Atlantic.

He explained that fish now accounts for roughly 55 percent of the animal protein consumed in Asia and 24 percent in Africa. By the year 2000 demand for fish could well double with more than three-quarters of the increase coming from developing nations.

Fisheries development will also bring economic benefits with better incomes and employment opportunities for some 10 million fishermen and 40 million shore workers presently employed in developing countries, he said. A strengthening of the fishing industry will also benefit foreign exchange balances for many developing countries.

The FAO program will cover the following areas: 1) Specialized help in framing policies and strategies for the management and development of fisheries zones; 2) assistance in stock assessment so that coastal states can set catch quotas and adopt other management measures; 3) strengthening regional fisheries bodies, particularly those established through FAO, to enable them to respond effectively to the new situation created by the proliferation of 200-mile zones; 4) promoting sound investment in fisheries development by national and international institutions (FAO estimates that at least \$30 billion will be needed by the end of the century); 5) technical support for extended economic zone management and development; 6) assistance in legal and institutional aspects of economic zone management and surveillance; and 7) assistance in distributing and marketing fish products.

### Australia Experiments With Blue Grenadier

Large quantities of the deepwater blue grenadier, *Macruronus novae sealandiae*, were landed in South Australia during January 1979 to an enthusiastic reception by processors according to a report in *Australian Fisheries*. The stern trawler *Margaret Phillipa* landed some 200 metric tons (t) of this previously little-exploited species in the second half of January from grounds off the west coast of Tasmania.

The Australian General Manager of the South Australian Fishermen's Cooperative Limited (SAFCOL), Mal Pach, said development of the blue grenadier fishery would prove an important step towards Australian self-sufficiency in fish. He predicted development of the blue grenadier fishery would be more important than the gemfish fishery. Blue grenadier would provide economical fresh, frozen, and smoked fish for consumers. It would cost less than gemfish, which had developed a large market in South Australia as a low-price, high-quality fish.

The first major landing of blue grenadier was 42 t. About 6 t was sold on

the fresh fish market and the remainder sent to SAFCOL's fish processing plant at Millicent for production of smoked fish and frozen fillets. Blue grenadier also was to be tested for use in production of fish fingers from the Millicent plant, expected to begin in early 1980.

Pach said the blue grenadier was first discovered in waters off the South Island of New Zealand, where it is known as whiptail. The fish caught by the *Margaret Phillipa* had been taken from waters as deep as 800 m. The fish were about 1 m long, weighed 4-5 kg, and produced fillets with soft, delicate texture.

*Australian Fisheries* also reported that the trawler *Zeehaan* made further good catches during a continuing deep water survey off the Tasmanian west coast. The government-chartered vessel made the catches in January on grounds between King Island and Strahan from which it also took good hauls of these species early last year.

The deep water trawling survey was sponsored jointly by the Commonwealth Government and the Tasmanian Fisheries Development Authority (TFDA), with staff from the Commonwealth Department of Primary Industry's Fisheries Division and the TFDA on board *Zeehaan* during the surveys.

The phase of the survey beginning January included surface and deep-water temperature probes, water sampling, fish length frequency measurements, and otolith sampling designed to aid assessment of fish stocks in the area and their schooling behavior. Information is processed by the CSIRO Division of Fisheries and Oceanography in Sydney.

## Japan Outlines Fishery Problems

Japan's Fisheries White Paper for fiscal year 1978 (1 April 1978-30 March 1979) points out that the Japanese fisheries catch was maintained at an adequately high level in 1977 and 1978, with increases in

coastal and offshore catches largely offsetting decreases in the catch made in foreign 200-mile fishing zones. In a departure from previous White Papers, however, it focused on a number of problems facing Japan's fisheries.

The problems identified included: 1) The need to reassess and better conserve and manage Japan's offshore and coastal fishery stocks, and to stabilize fishery prices; 2) the need to improve conditions in remote Japanese fishing communities which are losing population; 3) the need to improve diplomatic efforts aimed at gaining additional or greater access to the 200-mile fishing zones of other nations; and 4) the need for greater efforts in artificial salmon hatching, conservation of tuna resources, and prevention of coastal pollution.

The White Paper presents detailed statistical data on Japan's fisheries in 1977. The most important developments were given for catch, consumption, fishing companies and fishermen, and trade.

### Catch

Japan's 1977 fisheries catch totaled 10.8 million metric tons (t), a slight increase over the 1976 catch of 10.7 million t. Japan is the world's most important fishing nation, and its catch was nearly 15 percent of the world's total fisheries catch in 1977. The composition of the 1977 Japanese catch showed that offshore and coastal catches totaled 7.9 million t, up 5.8 percent and 4.1 percent, respectively, over 1976, while distant water catches totaled 2.7 million t, a decrease of 9.7 percent below that of 1976. The most significant developments were record coastal catches of sardine and mackerel and a sharp decline in the Alaska pollock catch.

### Consumption

Per capita consumption of fishery products, reflecting consumer resistance to increased fish prices in 1976-77, decreased to 47.4 percent of total animal protein intake in 1977, continuing a trend in Japan of greater meat and other nonfish protein consumption relative to fish.

## Fishing Companies and Fishermen

The total number of marine fishing establishments in Japan in 1977 was 212,000<sup>1</sup>, a 0.3 percent decline from 1976. The total number of fishermen in 1977 was 459,000 (of whom 360,000 were coastal fishermen), a slight decrease from 1976.

### Trade

Japan's 1977 fishery imports totaled 1.1 million t valued at 6.6 billion yen (US \$2.4 billion), an increase of 28 percent in quantity and 17 percent in value over 1976. Japan's 1977 fishery exports totaled 590,000 t valued at 1.8 billion yen (US \$686 million), a decrease of 9 percent in quantity and 17 percent in value from 1976. The negative balance of fisheries trade thus exceeded US \$1.7 billion. (Source: IFR-79/96.)

## Ural River Fisheries Increases Predicted

More than 10 million kg of sturgeons and salmonids and 1 million kg of black caviar are taken from the Russia's Ural River annually, a sum that is from 40 to 50 times more than was harvested there 30 years ago, according to Soviet scientists. The Ural River, 1,575 miles long, is about 300 miles longer than the Columbia River and empties into the Caspian Sea. It is also predicted that new biological and technical regimes could increase the river's productivity and fish catch almost fourfold by the year 2000.

On the recommendation of Russian ichthyologists, the traditional Ural River fishery has been changed to the mouth of the river and fishing operations are conducted on a "3 days on, 2 days off" schedule. Under this system, catches are predicted to increase without significantly affecting spawning fish. (Source: LSD 79-11.)

<sup>1</sup>Many of these establishments are small associations of as few as two or three fishermen.

## The Fisheries of Cape Verde

The Government of Cape Verde is placing great hopes on its fishing industry and expects over the next 10 years to invest \$93 million in that sector. Despite these rather ambitious plans, the development of Cape Verde's fishing industry faces many obstacles, according to the NMFS Foreign Fisheries Analysis Division.

### Background

The Government of Cape Verde has repeatedly stated that the fishing and tourist industries are two areas in which Cape Verde has considerable potential. Faced with a burgeoning population of 327,000 growing at an annual rate of 2.9 percent, a continuing deficit in food production (in 1979, Cape Verde was expected to import at least 75 percent of its food), and with no mineral resources yet discovered on the Islands, Cape Verde hopes that its fisheries can be developed to reduce the quantity of food which must be imported. It is also hoped that fishery exports will earn additional and badly-needed foreign exchange.

### Fishing Industry

Cape Verde's fishing industry is neither well developed nor extensive. The waters around the islands are rough and during a good part of the year high winds and high waves make fishing hazardous. Throughout the islands there are about 800 fishing vessels, or "botes"<sup>1</sup>, 5-8 m long, with crews of two or three. The botes are planked sailboats made locally, mainly on the islands of Brava and Sao Vicente (Fig. 1) from imported wood (which costs at least three times as much as it does in the United States).

In January 1978, at a small shop in Mindelo on Sao Vicente Island, production of fiberglass vessels began. However, because of their prohibitive cost, few have been sold. In 1978 about 50 percent of the 800 Cape

<sup>1</sup>Botes is the word for vessels in Orioulo, the local language.

Verde fishing vessels were based on Santiago Island, with another 30 percent working off Sao Vicente. The Cape Verde fishing fleet now has fewer vessels than in recent years, probably because some were owned by the Portuguese who returned to their home country when Cape Verde became independent in 1975.

### Fisheries

The Government of Cape Verde declared a 200-mile Exclusive Economic Zone (EEZ) in early 1978. The EEZ covers an area of about 200,000 km<sup>2</sup> including 3,500 km<sup>2</sup> of continental shelf. About 3,000 fishermen operate along the 1,000-km coastline. Their catch amounts to about 6,350 metric tons (t) annually (5,350 t pelagic species, 900 t demersal and tuna species, and 100 t crustaceans), with a value of about 120 million escudos a year (US\$3.2 million)<sup>2</sup>.

The waters of Cape Verde contain moderate quantities of horse mackerel, whitefish, barracuda, grouper, tuna (various species), and occasionally

<sup>2</sup>One ton of landings would thus average about US\$450.

whales, as well as some lobsters. Like many tropical countries, the waters of the archipelago do not contain abundant stocks of fish and shellfish. During portions of the year, fish is not available in the domestic markets of Cape Verde and the variety of species available is always limited. A Cape Verde fisheries expert estimates that the country's fisheries catch could increase, from a total of little more than 6,000 t, to 17,000 t a year by modernizing the fleet and improving storage capabilities.

The waters of Cape Verde do have substantial, though migratory, stocks of bigeye, bluefin, yellowfin, and skipjack tuna. Tuna fishing takes place from July to October. Cape Verde concluded an agreement with Angola in October 1978 permitting six Cape Verde tuna vessels to fish in Angolan waters during the off-season. Fifty percent of Cape Verde's catch in Angolan waters, however, must be landed in Angolan ports.

### Processing Facilities

In early 1978, six canning plants were operating on Santiago, Boa Vista, Sal, Sao Nicolau (2 plants), and Maio Islands, employing about 540

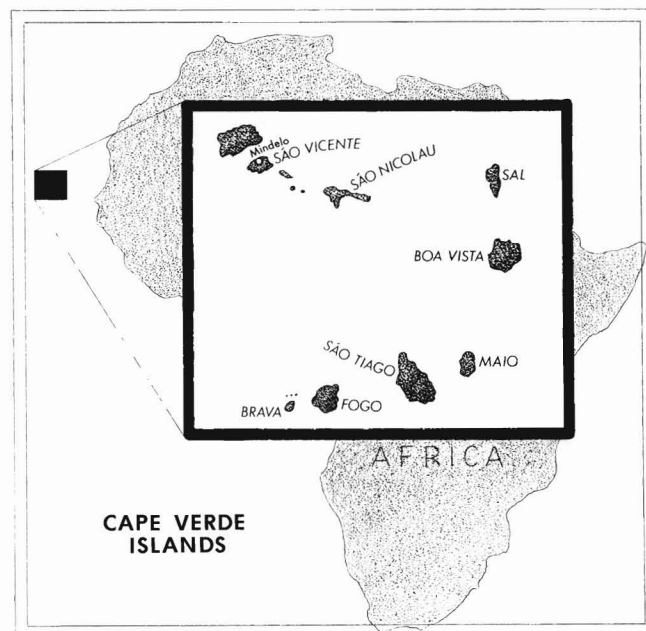


Figure 1.—Cape Verde Islands.

people (mostly women) during the tuna season. The six plants are now operating at about 55 percent of capacity because landings have declined since the Portuguese left. These plants are owned by firms operating 15 small vessels (up to 20-23 m long) and three large vessels (up to 30 m long). These vessels normally fish within 30 miles of the coast. The total production of canned fish is about 560 t per year<sup>3</sup>. A large part of the production of canned tuna (packed in 2-kg cans with water mixed with cooking oil) is exported to the United States and Portugal. These plants have recently faced two continuing problems: 1) An inadequate supply of tuna, and 2) nonavailability of oil to preserve the canned product.

At Mindelo, on the island of Sao Vicente, there are two companies with cold storage and freezing plants. FRICAPE, the largest, has a present cold storage capacity of 3,000 tons and has based its operation on a tuna fleet of 10 wooden pole-and-line vessels and 3 steel tuna purse seiners. Their average monthly catch during 1975-77 varied from 20 to 150 t per month.

FRICAPE was negotiating earlier in 1979 with a U.S. tuna company for the lease or purchase of a tuna seiner with a carrying capacity of 900 t. The Cape Verde Government was pleased with the proposed contract and was interested in negotiating the purchase by that company of chilled and frozen tuna. The vessels presently owned by FRICAPE have an on-board total freezing capacity of only 200 t.

The second freezing enterprise is Frigorifico Exporters; it has a cold storage capacity of 300 tons and presently operates three tuna vessels. The Government of Cape Verde has decided that it will not encourage the expansion of Frigorifico Exporters. Instead, the Government will actively support the expansion and development of FRICAPE, which until independence was operated as CONGEL under the joint Portuguese-Cape Verde ownership.

<sup>3</sup>In February 1978, the canned products were sold at an average price of US\$1,950 per ton on world markets.

### Development Plans

The Government of Cape Verde planned to expand the cold storage facilities at Mindelo to 9,000 t during 1979. The Government of the Netherlands, through the Dutch firm ARENCO and with financing in the amount of 6.5 million florins (\$3 million), has assisted in this effort. As part of this project, modern wharves were constructed in Mindelo; vessels requiring a draft of up to 7 m will be able to come alongside the new piers. The Cape Verde Government also plans to establish a fish filleting operation at Mindelo and will be looking for financing in the amount of US \$4 million for this project. The Government hopes that this operation will be producing 6,000 t of fillets per year by the end of 1982. The Government also plans to build a fish net factory at Mindelo and again will be looking for financial assistance for this project.

Though funding is an obvious problem, the Government of Cape Verde has rather ambitious plans to increase the country's present highseas fishing fleet by a total of 19 vessels, including 12 purse seiners, 5 stern trawlers, and 2 refrigerated fish carriers. The Embassy estimates that the cost of these vessels would amount to at least U.S. \$80 million.

### Lobster Exports

The Government of Cape Verde plans not only to increase its annual catch of fish, mostly tuna and horse mackerel, but also hopes to increase the annual per capita consumption from the present 13-15 kg to 20 kg by the end of 1980. It does not appear likely that this goal will be attained mainly because of the lack of cold storage facilities, especially on the two most populous islands, Fogo and Santiago. In the interior of Santiago Island fish is rarely available, and then only in dried form.

Lobster is caught for export on the islands of Sal and Maio. The total lobster catch of all the islands of the archipelago is about 110 t per year. A large part of this catch is air-freighted from the Sal Airport to Portugal,

France, and the United States. On Sal Island, a plant with holding tanks for live fish and freezing units is partially finished. Approximately \$2 million would be required to finance the completion of this facility, which was abandoned at the time of independence. A lobster export operation could be begun on Brava and Fogo Islands. Lobster stocks could be commercially harvested on these islands and catches from Sal Island could be increased. Lobsters sell at a low price (US\$1.00/kg on Brava, US\$2.50/kg on Fogo, and US\$3.50/kg on Sal). The Government of Cape Verde estimates that an additional 100 t of export-quality lobster stocks could be harvested each year without causing any damage to the lobster stocks. There are direct air connections from Sal Island to New York (thrice weekly); Lisbon (twice weekly); and Paris, London, Frankfurt, and Amsterdam (once a week).

### Investment

From the 1978 budget the Cape Verde Government plans to invest a total of 130 million Cape Verde escudos in the fishing sector (approximately \$4 million). Of this total, 50 million escudos (\$1.5 million) will be spent on development and expansion of the freezing plant at Mindelo and the remaining 80 million escudos (\$2.5 million) will be used to modernize artisanal fisheries. The latter will include financing the purchase of outboard motors for small fishing boats. During the next 10 years, the of Cape Verde expects to invest a total of \$93 million in fisheries.

### Foreign Aid

The Government of Japan has also shown some interest in financing artisanal fishing projects, perhaps in exchange for using Mindelo as a base for one of its fishing fleets, a situation which existed prior to independence. For the present, at least, it appears as though Cape Verde will continue to deny rights to fish in its 200-mile fishing zone to any of the major powers. (Source IFR-79/89.)