

## Canada Charts \$41 Million Course Toward Fisheries Prosperity

A \$41 million fisheries rebuilding program for 1977-78 will increase the value of the inshore fishery and build up Canada's offshore fishing effort in the new 200-mile zone, Roméo LeBlanc, Minister of Fisheries and the Environment, has announced.

Aimed mainly at the Atlantic coast, this year's measures form part of a long-term effort to rebuild the fishing industry into overall prosperity. The federal government had previously authorized around \$130 million for emergency aid since mid-1974 to keep major sectors of the fishing industry alive, particularly the groundfish<sup>1</sup> industry, the mainstay of east coast fisheries. The new program cuts back direct financial assistance and introduces concrete measures to strengthen weak sectors of the chronically troubled fishing industry, according to LeBlanc.

"We are changing the emphasis from rescue to rebuilding," LeBlanc

<sup>1</sup>Groundfish are cod, haddock, and similar "whitefish" species which feed near the ocean bottom.

said. "With the new 200-mile zone, we're now in a position to manage our fishery resources properly. Our programs will also touch historic shortcomings of the industry which had no relation to the 200-mile limit."

This year's program follows policy directions announced last year in the publication "Policy for Canada's Commercial Fisheries<sup>2</sup>". Specific projects for 1977-78 mostly originated with the regional directorates of the Fisheries and Marine Service, following consultations with fishermen and processors on regional needs.

The program particularly benefits inshore and nearshore fishermen in the fleet of more than 25,000 intermediate and small boats on the Atlantic coast. Measures will also assist the large-trawler fleet of some 160 vessels to increase offshore fishing and to move towards taking all the available catch within the Canadian zone.

<sup>2</sup>Available from the Information Branch, Fisheries & Marine Service, Ottawa, Ontario K1A 0H3.

The 1977-78 program falls into four sections: 1) Increasing the value of the fish; 2) fishing new grounds and new species; 3) fishing fleet changes; and 4) marketing.

### INCREASING THE VALUE OF THE FISH

#### Inshore Fishery

In the inshore fishery, a major effort to improve the quality of fish landings could raise the inshore fishery's value by 30-40 percent in many areas. Loss of quality has been a severe problem in the handling of inshore fish in some areas on the Atlantic coast because of lack of ice facilities, poor handling practices, pitchforking fish from boat to dock, and so on. In Newfoundland alone, upgrading quality and improving yield could increase usable landings by 18 million pounds and raise production value by \$22 million annually. The three major projects will raise fish quality and prices.

#### Newfoundland

In Newfoundland the federal Fisheries and Marine Service will initiate a 4-year, \$13 million program (of which \$3.6 million will be spent this year) to provide a new fish-handling system at 200 communities where 85-90 percent of inshore-caught fish are landed. The system is simple, low cost, and provides a fast discharge rate, important for preserving quality during the peak fishing season when air and water temperatures are high. Net bags layered in with the fish are unloaded by a dockside hoist that automatically weighs each bag.

On the dock, the fish go into a hopper that controls their flow across a sorting table; they are then iced into large insulated containers for storage on the wharf or immediate loading by a lift onto transport trucks. This new system will ensure the delivery of first quality fish to the processing plants.

Tests at five communities produced excellent results and good acceptance

### Maritime Fish Landings Down, Value Up in 1976

Preliminary Canadian statistics indicate that total landings in the Maritime Provinces off Canada's Atlantic coast in 1976 were 476,352 metric tons (t) round weight, valued at C\$136.1 million (at C\$1.00 = US\$0.98), an all-time record for landed value. In 1975, landings totaled 482,542 t and were worth C\$123.4 million.

As in 1975, total groundfish landings in 1976 continued to decline though cod landings increased by 3,619 t to 54,729 t. Other figures given by Environment Canada included: pelagic and estuarial landings of 185,260 t, valued at C\$18.5 million, and shellfish landings of 112,652 t, valued at C\$78.4 million. Preliminary data for 1976 herring landings

were 156,999 t compared to 184,316 t in 1975, a decrease of 10 percent.

Although the fishing industry in the Maritimes experienced various problems in 1976, such as high operating costs for catching and processing fish and quota restrictions, the prices paid to fishermen in 1976 compared favorably with previous years.

Source: Fisheries Statistics Branch, Environment Canada, Halifax—IFR-77/22. For complete statistics on Canadian Atlantic Coast fishery landings for 1976, send two preaddressed mailing labels to: W. L. Rodgers (F411), Office of International Fisheries, NMFS, NOAA, Commerce, Washington, DC 20235.

of the system by fishermen and processors. Federal quality standards for dockside inspection will be part of the system, enabling buyers to pay a premium price to the fisherman for first quality fish.

#### *Maritimes and Quebec*

In the Maritimes and Quebec, demonstration projects in nine communities will provide complete fish-handling systems from vessel to plant, involving more use of ice, faster unloading, and better quality-keeping at every stage.

#### *Nationwide Program*

A related nation-wide program will provide assistance for installation of commercial ice-making, ice-storing, and fish-chilling facilities on vessels or at landing sites.

#### **Lobster Fishery**

A tentative project to raise earnings in the lobster fishery would increase the size limit for lobsters in part of Lobster District 8 in New Brunswick and Prince Edward Island. Allowing one addi-

tional moult would double yield and market value. The project is under review with lobster fishermen.

#### **Cod, Flounder, and Other Species**

A series of small pilot projects will increase utilization of normally discarded flesh from cod and flounder, will develop and market canned flake and chunk mackerel packs, will use dried and ground scallop shells for animal food and fertilizer, will pursue development of a capelin roe fishery for the Japanese market, and will use ultrasonic techniques to automate detection of quality defects in fish fillets during processing.

#### **NEW GROUNDS AND NEW SPECIES**

Together with the previously announced 1977 fishing plan for the Atlantic groundfish fleet, these measures will take some pressure off the inshore fishery, where stocks have suffered from heavy fishing by large-vessel fleets, and will build up Canadian offshore fishing.

#### **Trawlers**

Trawlers of more than 100 feet length, based in the Gulf of St. Lawrence will receive assistance for fishing in waters outside the Gulf. Because of depletion of redfish and other stocks, these large vessels face severe restrictions on operations within the Gulf.

#### **Cod Stocks**

LeBlanc stressed the high importance placed on rebuilding cod stocks off Labrador and northeast Newfoundland for the benefit of both inshore and offshore fisheries. Northern fishing incentives will help develop this greatest remaining opportunity for expansion of Canadian groundfish fishing within Canada's 200-mile zone. Canadian trawlers have previously taken only a small fraction of the available catch in this area. While more Canadian fishing will replace some of the diminishing foreign effort in the area, continuing low quotas will allow a rapid rebuilding of the stocks for the inshore fishery.

#### **Other Measures**

As quotas in traditional fisheries become caught up later in 1977, incentives will help the large-vessel fleet move into other areas where they have in previous years been less active. A freezer-trawler will be chartered to determine the feasibility of using such vessels to fish nontraditional stocks in Canadian Atlantic waters, particularly for species such as silver hake and squid which spoil quickly unless frozen.

A 1-year program will carry out exploratory fishing and will develop and market products from grenadier, an Atlantic coast groundfish unfished by Canadians. A chartered stern trawler will provide the opportunity for Canadian fishermen to participate in offshore mackerel fishing, to take advantage of the sizeable resource on Brown's and George's banks off Nova Scotia in the winter months.

#### **FISHING FLEET CHANGES**

A 2-year program will subsidize conversion of the Quebec fleet of large redfish trawlers for multispecies fishing. This measure, affecting 7 of the

### **U.S. and Canada Sign Fishery Pact**

"The United States and Canada today (24 February 1977) signed in Washington a Reciprocal Fisheries Agreement to permit continuation of fishing by fishermen of each country off the coasts of the other for 1977, following extension of their respective fisheries jurisdiction to 200 miles. The agreement was signed on the Canadian side by L.H. Legault, Director General, International Directorate, Department of Fisheries and the Environment, and on the United States side by Ambassador Rozanne L. Ridgeway, Deputy Assistant Secretary of State for Oceans and Fisheries Affairs. The agreement will enter into force upon completion of internal proceedings by both sides.

"The agreement was concluded

following discussions between President Carter and Prime Minister Trudeau. The two leaders concurred that a fisheries agreement for 1977 should be concluded on the basis of the same spirit of cooperation which marked their overall discussions. They also reviewed the principles which would ensure that the interests of each in the fishing zone of the other are accommodated reciprocally for the remainder of this year.

"The two sides looked forward to longer term arrangements which are yet to be negotiated. They welcomed the signature of the agreement as an important step in the evolution of their fisheries relationship and as a contribution to their close ties as neighboring states."

fleet of 12 Gulf-based trawlers over 100 feet, will ease the pressure on the Gulf redfish fishery. Another project will convert four groundfish trawlers in the Maritimes region to replace older vessels in the scallop fleet.

### MARKETING

Market development for products from dogfish, lumpfish, seal, skate, and squid will receive additional support. Funds will be set aside to aid the industry in possible efforts this year towards cooperative groupings in export marketing activities.

Conditional grants for processors of frozen groundfish for export will still be available where monthly analyses prove the need. Current projections suggest that aid will run to about half last year's level and one-third the previous year's. Although fish are still scarce, prices have risen, and the situation of those processing companies that survived recent reverses has become more stable.

Direct assistance payments will continue to groundfish fishermen supplying first quality food fish. As before, there will be no such payments on fresh fish for export. All assistance payments will be conditional on full and prompt information on costs and earnings, and will be subject to continuous review and adjustment. A program under development for this year will, where necessary, help fishermen and small plant owners to develop proper record-keeping systems; besides substantiating claims for emergency aid, good record-keeping practices will be of permanent value after the temporary assistance program ends.

### Canada Restricts Joint Fishing Ventures in 1977

The Canadian Government has disclosed that it will introduce sharply restrictive policies in the area of joint ventures in the fishing industry for 1977. The new policy would, however, continue to permit experimental projects lasting no more than 1 year provided that the terms are strict and they work to the benefit of Canadian fishermen.

This decision reflects the Canadian Government's determination to plan and control fisheries programs in the newly established 200-mile fishing zone. One specific goal will be to introduce tight conservation measures for cod fishing in the waters off northeastern Newfoundland and Labrador.

In order to assure the recovery of depleted stocks, Canada is reducing the total allowable catch from 300,000 metric tons (t) in 1976 to 160,000 t in 1977. For the northern cod stock, the allocations to foreign nations have declined dramatically from 550,000 t in 1973 to 226,000 t in 1976 and 92,250 t in 1977. The clear purpose of these restrictions is to maintain or increase Canadian catches and at the same time

to protect certain stocks by reducing foreign catches significantly.

The Government is also prepared to require the submission of detailed plans by Canadian fishermen taking part in the short-term experimental projects in order to monitor all joint ventures and ensure that the interests of the Canadian fishing industry are protected.

LeBlanc expressed concern that even the present small-scale joint ventures were causing tensions between different elements of the industry and among different regions. Finally, he emphasized that in the future, joint ventures in the fishing industry would be tolerated only if they fit into the goals of overall fisheries planning and if they serve primarily as data gathering tools.

### Libyan Fisheries Development Noted

The Government of Libya has established a Nutrition Council under the Ministry of State for Nutrition and Marine Resources with the responsibility of developing marine fisheries. This was done to stress the importance the Government attaches to the food and marine resources sector within the 1976-80 "Transformation Plan." In 1976, the fisheries program was allocated 8.8 million Libyan Dinars (US\$2.6 million) of which only a small portion—250,000 L Dinars—was spent during the first quarter of the year.

The fisheries program provides for the construction of two ports (at Zuara and at Karsa), to complement the existing smaller ports. The program also provides for the completion of fishing ports at Khoms, Tripoli, and Janzour; and for additional piers in several ports. The Government also plans to construct fish canneries at Janzour, Khoms, and Zuara, and to install tuna-processing lines in the canneries at Zuara and Khoms. Icemaking and cold-storage plants in Tripoli, Sirte, Soussa, Talmetha, Ein Al-Ghazala, Derna, Tobruk, and Sabratha have been finished and are run by the State.

The preliminary estimates of available fishery resources off the coast of eastern Libya have been completed;

studies on species available in the territorial waters<sup>1</sup> were also done.

The Plan has provisions for the establishment of three joint ventures (with Yemen, Spain, and Malta) and for cooperation with Japan and Italy on an aquacultural project. A joint venture with Spain, named "Compagnie hispano-libyenne de peche," has already been formed. Five Arab banks have loaned US\$7 million to this company for purchasing two fishing trawlers, at a total cost of US\$15 million. The trawlers will be built in Spain. (Source: IFR 76/273.)

According to the NMFS International Fisheries Analysis Branch, the Nutrition Council had approved on 16 September 1975, a project to build seven small fishing ports at Abu Kamash, Marsa, Zuagha, Sabratha, Ein el Ghazala, Sirte, Zureik, and Tobruk. The "Ivan Milutinovic" company of Yugoslavia appears to have concluded the contract for the construction of these ports, with a preliminary estimated cost of \$12 million. The same company is presently working on the construction of a large port at Misurata (estimated cost is \$57 million) which will be completed this year and will be linked by railroad to Chad.

<sup>1</sup>Libya claims 12 territorial miles, but in the Gulf of Sirte 300 miles are claimed.

According to the Libyan Department of Marine Resources, at the end of 1975, a total of 1,388 fishermen were

registered in Libya, of which 831 were Libyans. In addition, Libya had 562 fishing vessels (14.5 m long) and 14

trawlers (from 18 to 22 m long). The per capita consumption of fishery products was estimated at 3.5 kg.

## Morocco's Shrimp and Lobster Fisheries<sup>1</sup>

### SHRIMP

Shrimp is Morocco's most important crustacean resource, but the country has not yet established a significant shrimp fishery. Only one shrimp trawler is registered in Morocco and that vessel is operated by an Italian joint venture. The rest of Morocco's shrimp catch is incidental to bottomfish catches.

Many shrimp species are found in Morocco's waters (Fig. 1), but only two are commercially important: deepwater pink shrimp, *Parapenaeus longirostris*, called "crevette rose" (Fig. 2); and giant red shrimp, *Aristemorpha foliacea*, called "crevette rouge" or "crevette royale," (Fig. 3).

### Catch

According to landing statistics provided by the Moroccan National Fisheries Office, ONP, Morocco's shrimp catch has decreased sig-

nificantly since 1964 (Table 1). The shrimp catches decreased suddenly in 1964 and have remained low ever since for two reasons: 1) In 1964 the French shrimp fleet withdrew abruptly from Morocco's waters, and 2) many Moroccan fishermen are reportedly

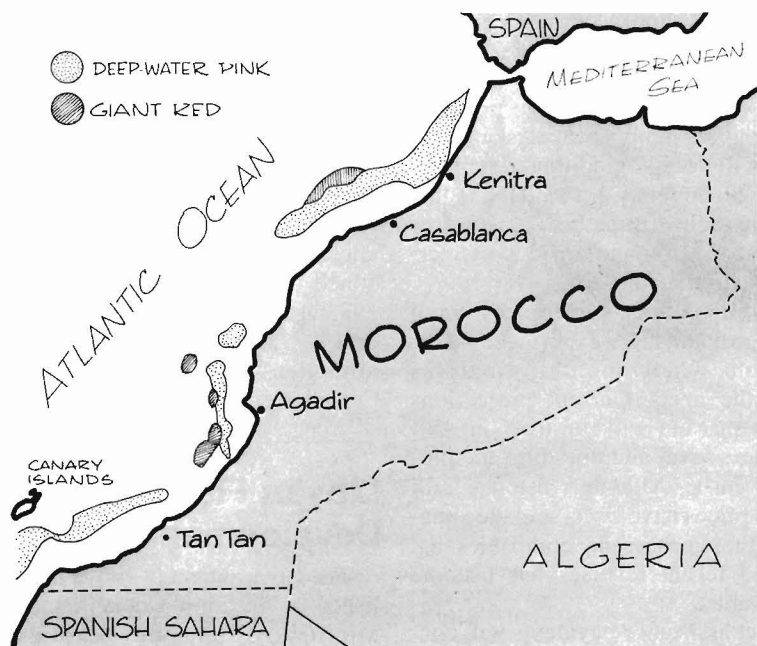


Figure 1.—Morocco's deepwater pink shrimp, *Parapenaeus longirostris*, and giant red shrimp, *Aristemorpha foliacea*, fishing grounds.

Table 1.—Morocco's shrimp catch, 1958-75, in metric tons.

Year	Catch	Year	Catch
1958	939	1967	543
1959	1,047	1968	258
1960	1,841	1969	205
1961	1,378	1970	528
1962	1,545	1971	291
1963	1,177	1972	291
1964	1,363	1973	134
1965	741	1974	131
1966	240	1975	303

Source: ONP, unpublished statistical data.

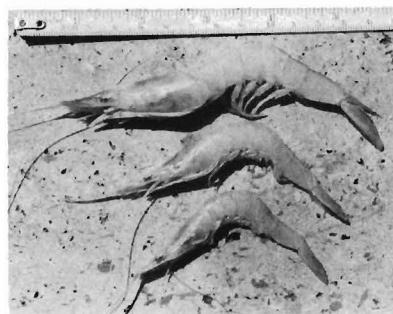


Figure 2.—Morocco's deepwater pink shrimp, *Parapenaeus longirostris*.

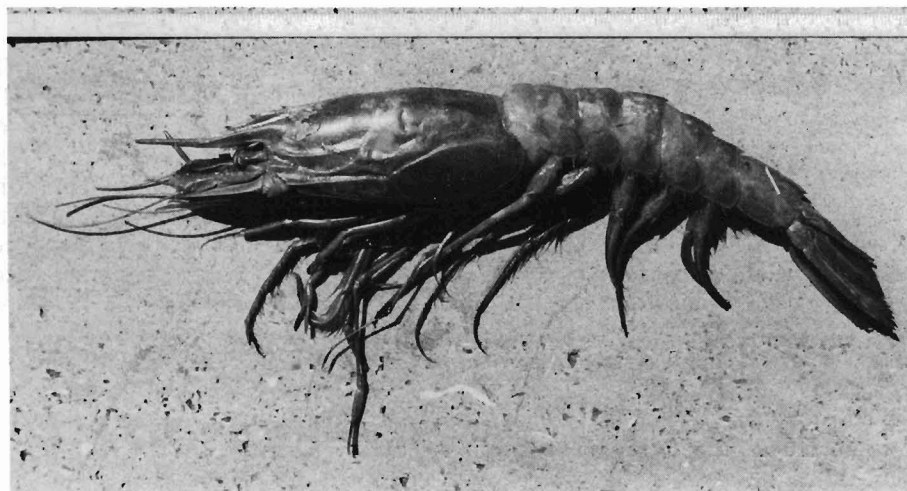


Figure 3.—The giant red shrimp, *Aristemorpha foliacea*, measures almost 15 inches from tip to tail.





Giant red shrimp and deepwater pink shrimp.

selling their incidental shrimp catches to Spanish vessels on the high seas rather than bringing them into Moroccan ports.

The Spaniards pay more for the shrimp than the Moroccan fishermen can receive at the domestic wholesale auction market. Although shrimp brings high prices in Morocco, most fishermen still consider it an incidental catch and do not concentrate on its harvest.

### Grounds

Most of Morocco's shrimp is caught less than a kilometer from the coast. Some shrimp, however, is caught further offshore in relatively shallow waters by large trawlers. The ONP, together with the UNDP/FAO, has conducted exploratory fishing for shrimp and reportedly found several large deepwater shrimp stocks at depths of from 400 to 800 m. No Moroccan vessels are capable of fishing that deep.

Morocco's shrimp is caught almost entirely along the Atlantic coastline. Most of the shrimp is landed in the two ports of Casablanca and Agadir. In 1975, nearly 290 t, or 92 percent of the total catch was landed in those two ports (Table 2).

Morocco's shrimp grounds are located mainly off Casablanca and Kenitra. Small stocks are also found off Agadir. The large southern resource of deepwater pink shrimp off Tan Tan is not currently being fished commercially. Additional shrimp stocks may also exist off the coast of the northern portion of the former Spanish Sahara which Morocco has annexed.

### Joint Ventures

An Italian joint venture to fish for shrimp and squid, ARMIPECHE, was reportedly established in July 1976. The Italian partner is the FRESCOGEI company of Milan. The joint venture's initial capitalization was \$412,500. The company has a 43-m trawler, the



Figure 4.—A "langouste," *Palinurus elephas*, and a "homard," *Homarus vulgaris*, awaiting air shipment to Paris. Polystyrene boxes used for shipping live lobsters are stacked in the background.

*Ain Leuh*, which was built in Italy and has a 200-m<sup>3</sup> hold, carries 18 crewmen, and can make voyages of up to 45 days.

### Prospects

Morocco's offshore shrimp resource could be expanded to at least the pre-1964 catch levels by the use of modern shrimp trawlers. Additional shrimp catches at depths of 400-800 m could result in even greater catches. No studies presently available, however, show the actual size and locations of the resource, the species available, or their migration patterns. Shrimp fishing with modern deepwater shrimp trawlers remains an attractive, but so far undeveloped, fishery.

### LOBSTERS

Morocco's rocky Atlantic and Mediterranean coastline has traditionally provided sanctuary for three species of lobster: the Norway lobster, *Nephrops norvegicus*, called "langoustine" by the Moroccans; the European lobster, *Homarus vulgaris*, called "homard" (Fig. 4); and the European spiny lobster, *Palinurus elephas*, called "langouste". A fourth species, the "green lobster", *P. mauritanicus*, is known to exist in sizeable quantities off Mauritania and most likely also off the

Table 2.—Morocco's shrimp catch, by port, 1974-75.

Port	Catch (t)	
	1974	1975
Al Hoceima	0.2	1.0
Tangier	2.3	5.0
Larache/Acilah	3.4	2.4
Kenitra	4.5	14.0
Casablanca	58.4	133.8
El Jadida	—	0.1
Safi	17.2	—
Essaouira	0.2	0.1
Agadir	44.4	146.2
Total	130.6	302.6

Source: ONP, unpublished statistical data.

**Table 3.—The Moroccan lobster catch in kilograms, by species and port, 1974 and 75.**

Port and year	Species			Total
	European lobster	Spiny lobster	Norway lobster	
Nador				
1974	—	6,735	9,902	16,637
1975	—	—	22,827	22,827
Al Hoceima				
1974	—	180	180	360
1975	—	—	125	125
Larache				
1974	41	5,673	40	6,424
1975	3,550	3,530	—	7,080
Mohammedia				
1974	1,286	4,604	393	6,283
1975	1,060	2,895	673	4,628
Casablanca				
1974	5,043	5,621	44	10,708
1975	5,876	4,477	45	10,398
Ei Jadida				
1974	—	—	—	—
1975	—	3	—	3
Safi				
1974	4,144	3,806	19,598	27,548
1975	8,583	11,395	46,448	66,426
Essaouira				
1974	6,872	5,788	1,299	12,959
1975	8,623	21,555	5,995	36,173
Agadir				
1974	690	715	—	1,405
1975	4,429	6,417	446	11,292
Total				
1974	18,076	33,122	32,126	83,324
1975	38,121	50,390	76,559	165,070

Source: ONP, unpublished statistical data

former Spanish Sahara<sup>2</sup>. Green lobsters are not presently being harvested by Moroccan fishermen.

### Fishing Regulations and Gear

Lobster is harvested from February through September. Fishing is prohibited from 1 October to 1 February. The taking of roe-bearing females is officially prohibited, but this regulation is not always strictly observed.

Morocco's lobster fisheries are somewhat primitive; one or two men operate from a rowboat or a sailboat close to shore. Baited wooden traps are usually set to catch the lobster.

### Catch

Statistics provided by the National Fisheries Office (ONP), show Morocco's European lobster catch averaged 20 t per year during 1958-75. The Norway lobster catch has averaged 11 t annually. The catch of spiny lobsters

<sup>2</sup>Mauritania obtained in the southern part of the former Spanish Sahara when that colony was partitioned between Morocco and Mauritania in 1975. The Mauritanian lobster fishery is described in Foreign Fisheries Leaflet 76-3, "The Fisheries of Mauritania", which is available from D825, Environmental Science Information Center, NOAA, U.S. Department of Commerce, Washington, DC 20235.

**Table 4.—Moroccan lobster exports, by commodity, quantity, and value, 1973.**

Commodity	Quantity		Value			
	kg	lb	Dirhams	Dir/kg	US\$ <sup>1</sup>	\$/lb
Lobster						
Tails	451	994	15,120	33.53	3,780	3.80
Live	47,827	92,211	1,297,150	31.01	324,288	3.52
Whole, other	2,687	5,923	59,690	22.21	14,923	2.52
Whole, nes.	305	672	9,030	29.60	2,258	3.36
Spiny Lobster						
Whole	103,681	228,575	3,882,260	37.44	970,565	4.25
Total	154,951	328,375	5,263,250		1,315,814	

<sup>1</sup>Calculated at the exchange rate of 4 dirhams for US\$1.00 prevailing in September 1976. Source: Ministère des Finances, *Statistiques du Commerce Extérieur*, Office des Changes, Royaume du Maroc, 1974.

has averaged 29 t per year, but this high average is due to an unusually large catch of 109 t in 1962; otherwise the catch has been closer to 20 t per year. There has been a general increase in lobster landings during the last 2 years (Table 3).

There has been a growing interest in deepwater lobster fishing in Morocco during the past few years, and it will probably be only a matter of time before deepwater fishing begins. Negotiations between a Moroccan company and a U.S. shipyard over the purchase of steel-hulled lobster vessels have already taken place.

### Domestic Market

Landed lobsters are usually penned in enclosures until they are picked up. Firms specializing in lobster marketing send trucks up and down Morocco's long coastline; they stop in small fishing villages along the coast to buy lobsters. These lobsters are then taken to the major cities where they are sold live.

Although lobster fishing remains underdeveloped, Moroccan fishermen easily sell their catch. There is a good demand for live lobsters in Morocco and a tremendous demand for Moroccan lobsters in France and Spain. As a result, lobster prices are high: \$3.50/lb for "homards" and \$4.50/lb for "langouste" are common in Moroccan retail stores and it is not at all uncommon to find live lobsters selling for \$20.00 apiece in a fancy Casablanca seafood restaurant.

### Exports

The export markets contribute both to the high prices of lobsters locally and

to the general absence of lobsters on the local markets. Morocco's lobster exports for calendar year 1973 are shown in Table 4.

## Moroccan International Fishery Relations and Joint Ventures Told

The Regional Fishery Attache for Africa, William B. Folsom, has prepared two reports on Moroccan fisheries. The first describes Morocco's international fishery relations. Folsom reports that Morocco's fisheries policy is founded on two principles: 1) the protection of Morocco's marine resources for the benefit of Moroccan citizens; and 2) the need to obtain foreign technology and capital to help develop these resources. The Moroccan Government's efforts to promote these goals through fishery agreements with France, Mauritania, Portugal, the Republic of Korea, the Soviet Union, and Spain are detailed in Folsom's report.

The second report describes Morocco's policy of promoting joint fishery ventures with foreign companies. One of the responsibilities of Morocco's Office National des Pêches is to encourage foreign fishery investments. Existing and planned joint ventures with Japan, France, the Republic of Korea, Italy, Denmark, and the United States are described.

A copy of either, or both, of these reports can be obtained by requesting the desired report(s), attached to IFR 77/65, from the International Fisheries Analysis Branch, NMFS, NOAA, Department of Commerce, Washington, DC 20235. Please specify the title of the report requested.