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REPORT

OF THE

OJIBUTI

ARTISANAL FISHERY DEVELOPMENT PROJECT

IDENTIFICATION/PREPARATION MISSION

FAO/INVESTMENT CENTRE

TRANSLATION FROM
THE FRENCH ORIGINAL

There are several errors in the figures printed in the FAO/IC report. For example, in the "Resume et Conclusions" (Summary and Conclusions), para. x should read, "(US\$498 000) de l'USAID," not "(US\$948 000)..."

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DJIBOUTI

SMALL-SCALE FISHERY DEVELOPMENT PROJECT

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Exchange rates and abbreviations

Exchange rates

US\$ 1.00 = 176 862 Djibouti Francs (Dj Fr)

1 Dj Fr = US\$ 0.00566

Abbreviations

IFAD = International Fund for Agricultural Development

USAID = United States Agency for International Development

FAC = Fonds d'Aide et de Cooperation

SEP = Livestock and Fisheries Service

BND = National Bank of Djibouti

Summary and Conclusions

- i) Fishing is very poorly developed in Djibouti. There are only about 70 active fishers, most of whom are based in the city of Djibouti. About one hundred fishers are unemployed. Fishing is entirely carried out on a small scale, 33 small "dugout" canoe-type boats - "pirogues" or "houris" - and four dhows chartered in Somalia. Yemenite fishers used to fish in Djibouti waters until 1978, to catch "sardinelles" for their own country. The whole of the current catch of about 580 tonnes is now sold fresh on the home market.

- ii) The stock of ground fish that can be caught in Djibouti waters each year is estimated at 2 000-4 600 tonnes, and some authors have put the possible "sardinelle" catch at 5 000 tonnes per annum.

- iii) Fish consumption per person per annum is about 2 kg; this could easily be increased to ease the serious protein deficiency of the Djibouti population.

- iv) The main obstacle to the development of fishing, and hence to the supply of the home market, is the total lack of infrastructure and facilities linked together to form a cold chain. In one of the world's hottest climates, fish deteriorates so quickly in the absence of any facilities for preserving it, that there are very few traders who will venture into the fish trade. Consequently, only very small quantities are sold, to the detriment of producers and consumers alike. This problem is so serious that the Government has encouraged the fishers to charter Somali fishing vessels to try to increase fish supplies.

- v) Since independence, the Government has been trying to attract foreign aid for fishing - a sector that will be given top priority in the first development plan currently being drafted.
- vi) The Government and the Investment Centre mission sent to Djibouti in October 1979 agreed on a general fisheries development project jointly financed by USAID, French bilateral aid (FAC), IFAD and the Government.
- vii) The aim of the project is to increase domestic fish consumption by improving the marketing facilities and increasing output. Production would be increased by improving fishing methods, introducing new types of small-scale fishing vessels and intensifying fishing in the waters under Djibouti jurisdiction; special emphasis is to be given to fishing in the Obock zone. It would also be possible to fish for export ("sardinelles" for the Yemen), but priority would be given to the home market. An experimental fisheries programme should make it possible to prepare a subsequent development phase making optimal use of local resources.
- viii) The component that has already been prepared for USAID financing will comprise the supply of improved fishing equipment for the existing fleet, two light refrigerated trucks, a small ice-making plant, and operating costs. French bilateral aid comprises the supply of a small ice-making plant. Both USAID and FAC will also provide a master fisher,
- ix) IFAD would finance a set of 10 small plastic boats with outboard motors and fishing tackle, two modern small-scale fishing-boats rigged out for commercial fishing and for the experimental fishery operation, a small pre-fabricated cold storage unit, the construction and equipping of 13 local fish retail outlets, equipping of a workshop and providing the working funds for commercial activities, and providing the services of one qualified mechanic.

- x) Over three years, the total cost of the project would be about 343 772 000 Dj Fr (US\$ 1 943 730), the Government has already put up 51 767 000 Dj Fr (US\$ 292 697); USAID has put up 88 million Dj Fr (US\$ 498 000) ; and France has provided 31 million Dj Fr (US\$ 175 323).
- xi) IFAD's contribution would be about 173 million Dj Fr. (US\$ 977 717).
- xii) The project would be taken in charge by the Livestock and Fisheries Service (SEP), the head of which would be the project manager. Retail fish outlets would be rented out to private businessmen by the Government. The plastic "houris" and fishing equipment would be sold on a "hire-purchase" ("location-vente") basis to the fishers who belong to the cooperative, on an individual basis. The two modern small-scale fishing vessels would be sold on a 'location-vente' basis to the fishing cooperative, which would leave the technical management of the boats to a special project unit. The fishing equipment will be bought by the fishers using a credit service to be managed by the National Bank of Djibouti; the bank is currently being established.
- xiii) The extra output due to the project is estimated at 285 tonnes, which is 50% higher than the present landed catch.
- xiv) The financial rate of return of the plastic "houris" would be over one hundred percent, the larger vessels 41.7 percent, the cold store 39.4 percent, the Djibouti fish retail outlets 23.7 percent, the Obock and Tadjoura fish retail outlets 60.8 percent, and the Ali Sabieh and Dikhil fish retail outlets 14.4 percent. The economic rate of return on the investments requested of IFAD will be 24.3 percent, and on the project as a whole, 11.4 percent.

Problems left pending

xv) The Djibouti Government still has to confirm its acceptance of the plan for coordinating the aid already put forward and scheduled with the aid that IFAD will be asked to provide.

xvi) Assurance must be sought that USAID will follow its programme of action with the proposed amendments to take account of the increased support to fishing and that the French bilateral cooperation will maintain the post of master fisher at SEP until December 1982.

xvii) The Government must also confirm that its ban on night fishing in the North is only a temporary measure.

Follow-up

xviii) A naval architect appointed by the FAO Fisheries Department will be given the task of studying the choice of two types of vessels to be introduced into Djibouti. This study could be carried out during the first quarter of 1980.

I. Introduction

1.1 At the request of IFAD, an Investment Centre mission visited the Republic of Djibouti in October 1979 to study the proposals presented by the Government relating to a small-scale fisheries development project. These proposals comprise: a) the financing of a boat to carry fish from Obock-Tadjoura to Djibouti, and to try-out improved fishing methods; b) the construction of 13 fish sales outlets throughout the territory of Djibouti; c) the provision of a line of credit for a fishing cooperative to enable the members to purchase boats, motors and other equipment and gear. These three contributions would support the actions undertaken in this sector by the Government with the assistance of USAID, French bilateral aid (FAC) and FAO.

1.2 During the 10 day visit, the mission met the Minister of Agriculture and Rural Development and his principal aides, the Minister of the Interior, senior officials from the Ministry of Finance and Planning and the "Commissaires" for the districts of Tadjoura, Obock, Dikhil and Ali Sabieh. Working sessions were held with USAID officials and officials representing the French bilateral aid programme. The mission visited the site of the project with the Director of the Livestock and Fisheries Service (S.E.P.) and inspected: a) the four fish landing points - two in Djibouti city and those at Obock and Tadjoura; b) the 13 sites on which the Government wishes to build fish retail outlets, of which 9 are in the town of Djibouti and the others in the secondary towns of Obock, Tadjoura, Dikhil and Ali Sabieh, respectively.

1.3 This report gives an account of the mission's findings and its proposals for a fisheries development project; these proposals have received the broad consent of the officials from the Ministry of Agriculture and Rural Development, and from the Planning Unit.

II. General Background

A. The Importance of Fishing to the General Economy

2.1 The Republic of Djibouti covers 23 000 km², with about 300 kms of coastline. Most of the country is covered in basalt rock which is practically uncultivated: only 0.26% of the land is cultivable. The country has a semi-desert climate, and temperatures can exceed 45°C in the hot season. There is a very high degree of atmospheric humidity in the coastal regions. The population has been estimated at 330 000; the growth-rate is high due both to the birth-rate and the influx of refugees seeking haven from the troubled surrounding areas. The capital, Djibouti City, accounts for 60%-70% of the population. If one adds the secondary towns of Tadjoura, Obock, Dikhil and Ali Sabieh, about 80% of the Djibouti population is urbanized.

23 700
300,000
60,000
non-urban

2.2 The economy of the Republic of Djibouti is marked by the dominance of the tertiary sector which accounted for 54% of the GDP in 1972, mostly from the port, the railways and trade. Foreign trade is limited to imports of consumer goods, foodstuffs and equipment. In 1976, imports totalled about 120 million dollars, compared with a few millions' worth of exports, mainly of animal hides. Djibouti imports over 95% of its food requirements. The rest is provided from its livestock: cattle and small ruminants, and fish products.

2.3 Fishing in Djibouti is entirely small-scale. Seventy local fishermen using dugout canoes "pirogues" or "houris" and about twenty Somalis make their living from fishing. Annual fish production is about 580 tonnes, with a quayside value of 100 million DjFr (US\$ 565 000). All the fish is sold fresh on the local market at an estimated retail value

of 180 million Dj Fr (US\$ 1 020 000). No fish is exported, and about 200 tonnes of deep-frozen and shell-fish are imported each year for expatriates and the French army.

2.4 The fish sub-sector plays a much larger role in the national economy than the figures would seem to indicate. The dramatic food and protein deficit in the country can only be reduced by fish: the nature of the soil and the cost of water mean that there is no chance whatever of thinking in terms of developing food crops. Neither can livestock farming production increase above present levels, due to the same constraints.

2.5 The first national development plan currently being drafted will put the development of the fishing sub-sector among its top priorities.

B. The Current State of the Fishery Sector

Physical factors

2.6 The territory of the Republic of Djibouti is practically split into two parts by the Gulf of Tadjoura. Fisheries development in the Northern coastal area is limited by the need to transport the fish between the northern ports of Obock and Tadjoura, and the main market of Djibouti, by sea or air.

2.7 The continental shelf that can be exploited measures about 2 280 km², in three distinct areas: a) from the southern border to Khor Ambada: 820 km², of which 700 have a sandy, shelly seabed; b) the Gulf of Tadjoura: 400 km², 9 miles wide along the southern coast, and 1 mile along the northern coast; c) from Ras Bir to Ras Doumerira: 1 000 km² bordering the coastline, 5 to 10 miles offshore.

2.8 Djibouti has a semi-desert climate with a very hot season from May to October, when temperatures can reach 47°C, and a cooler season with a minimum of 18°C. Rainfall is very erratic, ranging from 22 to 284 mm. The atmospheric humidity along the coast is permanently very high. The Northern monsoon, with force 4 winds on average, lasts from October to April. The May inter-monsoon period brings a period of calm. The South-western monsoon begins in June and ends in August. This is followed by a period in which the very strong Khamsin (force 6) wind blows from the North-East. Because of these winds, the small crafts can only set out on average 230 days a year. The thermocline moves 20-30 metres in the summer, and 100-120 metres in winter, causing the fish to scatter.

Resources

2.9 Over the past 16 years, about twelve surveys have been conducted to assess the size of the fish stocks in the maritime zone that constitutes the existing territorial waters of the Republic of Djibouti (see annexed "Bibliography"). The findings show that when there is an abundance of marine fauna, as in all tropical waters, the number of marketable species is very low, since there are few examples of each species, and a fragile ecological balance exists. Ground fish include sharks (Carchariniidae, Sphyrnidae, Pristiophoridae), groupers (Serranidés), snappers (Lutjanidae), dorads, (Lethrinidae), tuna and king mackerel, (Scombridae), jacks/trevallies (Carangidae) and barracudas (Sphyraenidae). The latest surveys have highlighted the large stock of coastal pelagic fish, especially "sardinelles" (Clupaeidae).

2.10 These surveys put the maximum ground fish potential catch at between 2 000 and 4 500 tonnes/annum, which offers a great deal of potential compared with the present 600 tonnes of fish caught by Djibouti fishermen. It is estimated that catches of "sardinelles" and other coastal pelagic fish could reach 5 000 tonnes. The Yemeni fleet that used to fish "sardinelles" in Djibouti waters until 1978 has an annual catch of about 200 tonnes.

The present situation of fishing

2.11 Djibouti fishers, all of whom are self-employed, are among the poorest and most under-privileged members of the population. About 70 are active and about one hundred others are unemployed or have to take up other jobs (micro-commerce, coaster crew). There are another twenty or so Somali fishers.

2.12 There are two types of vessel operating from Djibouti: a) the 'houris' (dugouts/canoes): this class of boat includes all kinds of one- or two-person open boats. Most of them are the traditional wooden variety, but there are also old pleasure canoes and ships' tenders both wooden and plastic. They vary in length from 3 to 7 metres. All of them are fitted with 6-9 HP outboard motors. Twenty-five unload their catch at Djibouti, and 4 at Obock and Tadjoura. b) the dhows or "boutres": these are the traditional wooden Red Sea boats called Sambuk or dhows; 13-15 metres in length, fitted with an outboard 35-50 HP diesel motor. There are now four of these which land their catch at Djibouti. They are chartered in Somalia by private Djibouti entrepreneurs.

A 20-metre fishing vessel has also been operating at Djibouti for the past few years. It has been docked for repairs at the present time, and is in such poor condition that it is beyond repair and re-use.

2.13 The small-scale Djibouti fishers mainly fish with hand-operated lines, trolling and tangle-nets. Fishing is carried out day and night, according to the season and the weather conditions. Normally, boats set out for only about twelve hours at a time, mainly because of the lack of fish preservation facilities.

2.14 The main fisheries are in 2 zones: in the North, along the whole coastline between Tadjoura and the border with Eritrea, and in the South between the Somali border and Khor Ambada, including the Musha and Maskali islands.

Territorial waters and fishing regulations

2.15 Law No. 52/AN/78 dated 9 January 1978 laid down the limits of the territorial waters: 12 nautical miles measured from the base lines; 24 nautical miles in the adjacent zone, and 200 miles as the exclusive economic zone. Pending agreement with neighbouring countries, the sea-border is deemed to be the median line of the channel separating the countries in the Arabian peninsula. Commercial fishery in the waters under the jurisdiction of the Republic of Djibouti is subject to authorization from the Ministry of Agriculture.

Production and markets

2.16 Total production is put at 580 tonnes, of which 400 are landed by the houris, and 180 by dhows. The landings at the three landing-points are: Djibouti 480 tonnes, Obock and Tadjoura 50 tonnes each. About 50% of the landings are sharks, while about 15% are the most sought-after species, such as tuna, jacks/trevallies and deraks.

2.17 Per capita fish consumption is 2 kg/annum. Surveys carried out before 1977 ^{1/} recorded per-capita animal protein consumption in Djibouti as 17.5 kg/annum equivalent of beef, while the deficiency threshold is 25.20 kg, and the optimum is 50.40 kg.

^{1/} Report by R. Moal - SCET International (in French)

- 2.18 If Djibouti could fish the total annual potential catch - which the most pessimistic estimates put at 7 000 tonnes - it would provide about 12 kg of beef equivalent per person per annum. This would make it possible to exceed the deficiency threshold without increasing the meat supply. Taking the higher estimate (9 600 tonnes), the total catch would account for 16.6 kg of beef equivalent, and would raise the per capita protein intake to 33 kg at the current population level.
- 2.19 All the fish landed at Djibouti city is sold fresh, either to private traders or taken to the town and sold by the fishers themselves. The traders supply community institutions such as the armed forces and the hospitals. They also supply market stalls set up in two places in the city, rented from the Administration. There are about a dozen stalls, side-by-side in the central market, and one at the Ambouli market in the south of the city.
- 2.20 In the secondary towns there are no fish markets. In Tadjoura and Obock the small amount of fish landed locally is sold door-to-door. The inland towns, Dikhil and Ali Sabieh, receive no fish supplies at all.
- 2.21 Fish costs about 300 Dj Fr/kg on average, which is much cheaper than meat, which sells for 500 Dj Fr/kg.
- 2.22 From time to time, Yemeni traders order fish, but their requirements cannot be met.
- 2.23 Djibouti has a very extended harbour which is well-equipped for trade, but it has never been used for industrial fishing. The small-scale fishing dhows use the Goubet landing stage at the western end of the harbour. The houris are moored, or pulled ashore, at the site known as "La Pêcheurie" on the eastern shore of the peninsula. Obock and Tadjoura have quais that the 13-15 metre small craft can use throughout the year. The houris are moored near the beach, where they can be pulled ashore without any difficulty.

2.24 The city of Djibouti and the harbour have the following food refrigeration capacity: a) $0^{\circ} + 2^{\circ}\text{C}$: $3\ 000\ \text{m}^3$; b) $-15^{\circ}\text{C} - 25^{\circ}$: $2\ 000\ \text{m}^3$; c) ice-making: 50 tonnes/day. The Livestock and Fisheries Service (SEP) has just brought cold-rooms back into service again at "La Pêcherie": $50\ \text{m}^3$ of cold-storage space, and $40\ \text{m}^3$ cooled to -25°C , coupled with a fish intake and processing unit $40\ \text{m}^2$ in size, and a modern $80\ \text{m}^2$ retail outlet. There are no public cold-storage units in the secondary towns. On the other hand, the public facilities (schools, infirmaries, barracks) are equipped with individual refrigerators and freezers.

2.25 Djibouti has no shipyard. A few craftsmen repair dhows' hulls and other traditional vessels, working in the open air. It is very difficult to get help from the harbour naval engineering workshops, which are equipped for very large vessels. The few local mechanics are overloaded with work, since the small vessel fleet is becoming delapidated. It is very hard to find spare parts for the diesel engines. The only outboard motor repair shop belongs to a private European businessperson whose charges are prohibitive for the local fishers.

C. Administration and development institutions

The Ministry of Agriculture and Rural Development

2.26 Fisheries are under the authority of the Ministry of Agriculture and Rural Development. The department concerned is the Livestock and Fisheries Service (SEP), headed by a livestock technician who is very well acquainted with fishery problems. Under him is a fishery development specialist, recently trained in France. The SEP staff total about one hundred; only five of them are currently dealing with fishery problems.

2.27 SEP's annual budget is 70 million Dj Fr (US\$ 400 000), of which 20 million are for operating expenses, and 50 million for personnel. The investment budget allocates 12 million Dj Fr per year to fishery development operations. The SEP headquarters is situated by the sea, at "La Pêcheurie". It comprises several large buildings, fitted out with offices, storage units and sheds. The fish handling and storage units are inside this complex. SEP also has a local unit at Dkihil and Ali Sabieh, with buildings and technical personnel for livestock and for sanitary control of markets.

Other administrative authorities

2.28 The harbour has its own ministry, directly dependent upon the Prime Minister.

2.29 A "Maritime Affairs Service" was recently created to take administrative control over seafarers and navigation safety.

2.30 There are National Boards ("Offices") for supply and trade at the Ministry of Trade, Tourism and Civil Aviation.

The fish wholesalers

2.31 At the moment, fish wholesaling is virtually a monopoly: several fish wholesalers buy the fish at "La Pêcheurie" or directly from the dhows. They also rent the stalls in the central market and at Ambouli.

Training

2.32 There does not exist any training specifically designed for fishery trades. The adult vocational training centre is well-equipped to train refrigeration engineers and technicians.

Research

2.33 The Djibouti "Institut Supérieur d'Etudes et de Recherches Scientifiques et Techniques" is carrying out trials in the farming of red algae, (*Eucheimia spinosum*). This programme is encountering considerable problems, particularly because of the herbivorous fish which attack the algae. The officials have been advised to call in specialists to find out if there exist any immediate solutions to this, and whether there is any likelihood that these algae could be farmed commercially sometime in the future.

Cooperatives

2.34 A fishery cooperative operated from 1958 to 1967. It ceased activity due to management problems.

D. Financial institutions

The Djibouti National Bank

2.35 The Djibouti National Bank was established in April 1979 with an initial capital of 300 million Dj Fr (US\$ 1 696 000). It will issue money, and operate as a deposit and development bank. Operations are expected to commence in mid-1980. For the time being, external funds for development projects are being managed by the Treasury or by private banks.

E. Constraints on the fisheries sector

2.36 The major obstacle to the development of fisheries is the lack

of a cold chain for fish. So far, no facilities have ever been used to preserve or conserve the fish from the time it leaves the boats to when it reaches the market stalls, despite the fact that this is one of the hottest climates in the world. This means that when fish is plentiful, the fishermen limit their catch; a large amount of the fish becomes inedible or spoiled after landing, and further deteriorates during transportation and on the market. Traditional preservation methods (salting, drying or smoking) have not gained acceptance.

2.37 For a city the size of Djibouti, with its large population (200 000), there are only two market outlets. The facilities are very rudimentary and poorly maintained. Ice is not used, nor is running water used for washing fish. The fish which is delivered in the early morning goes bad if left unsold until mid-day. The so-called "central" market is actually located in the northern outskirts of the city, which runs about 8 kms southwards. This means that very few homemakers can actually obtain fish. The fisher are practically at the mercy of the traders who fix the prices and the amounts of fish sold. Some fishers manage to break out of this system by door-to-door selling, or even selling their own fish in the central market in the heat of the sun.

2.38 At Tadjoura and Obock, with their 7 000 and 3 000 population respectively, there is no fish market. Since there is neither ice nor a cold storage facility, some fishermen venture across the Gulf of Tadjoura to deliver their surpluses to Djibouti City. The best fishers at Obock have given up the trade, because of the lack of a local market and of means for reaching the Djibouti market.

2.39 The inland towns, Dikhil, population 13 000, and Ali Sabieh, population 13 500, each with a refugee camp, have no fish supplies at all.

2.40 The annual production has reached its maximum because of a complete lack of finance to enable the fishermen to equip themselves. In this area of the Red Sea, where there is no wood, even the smallest traditional craft is very expensive; this is why there is such an odd assortment of different fishing craft. The locally available outboard motors cost three times the international or black-market price. The fishing motors are in a poor condition, because of the local replacement costs and the difficulties in procurement.

2.41 But even allowing for the hundred or so sea fishers who are not working because they cannot afford the equipment, or for whatever other reason, the total number of skilled fishers is still very low. This means that fishery has to be developed by selecting high yielding facilities and technologies.

2.42 But the local species of fish-- particularly the pelagic fish -- behave in such a way that one cannot directly introduce high-yield fishing methods used in more plentiful waters. Specific methods therefore have to be determined.

2.43 Since the country only gained its independence in 1977, the administrative officials are very few in number.

F. Fishery sector development

The USAID-FAC assistance project

2.44 In August 1979, the government signed a cooperation protocol with USAID for the provision of small-scale fisheries assistance in the form of a subsidy totalling US\$ 498 000, with a local contribution of US\$ 214 000,

and a contribution from France of about US\$ 176 000. This was for a pilot project to improve marketing and the small fishers' equipment and facilities, with the creation of a credit system for equipment and the organization of the fishers into cooperatives.

2.45 The facilities provided by USAID are: the permanent secondment of a master-fisher for two years, and the provision of consultants for short periods: the provision of a small ice-making plant (1 tonne/day) for Obock; two small insulated trucks, outboard motors and fishing gear, insulated containers for transporting fish, and funds to cover part of the project's operating costs. The project complemented the resources given to the Republic of Djibouti by French bilateral aid: one master-fisher and an ice plant producing 2 tonnes/day/year in Djibouti. Mention was also made of the need to coordinate this American and French aid.

2.46 The problem of financing some of the indispensable components of the project jeopardizes its implementation: the creation of retail outlets in the various quarters of Djibouti City and the secondary towns, a boat to carry the fish from the North to the capital, facilities to increase landings sufficiently to enable the new distribution circuits to be properly supplied. In order to unblock this situation, the Government of Djibouti requested the participation of IFAD.

III. Rationale

Development potential

3.1 The potential fish resources in the waters under national jurisdiction are far superior to the current landings (see para. 2.08).

3.2 Fish is the only locally available source of protein that can help fill the increasing food gap from which the people of the Republic of Djibouti are suffering.

3.3 Djibouti fishermen are also under-utilized: they are very skilled, as one can judge from the large catches they make with the very limited means at their disposal. They have made it clear that they are willing to cooperate with the government in anything which will enable them to break out of the current deadlocked situation.

3.4 Fishery could well become a highly profitable economic activity, in view of the potential yields and the price of fish on the local market.

3.5 The development of the fishery subsector is blocked because it is impossible to market any more fish, due to the lack of cold chain-type preservation facilities, combined with the fact that the fishermen find it impossible to equip themselves to increase production.

3.6 The strategy for unblocking this situation must be based on a plan of action to foster marketing, production and training.

3.7 In view of the current state of the fisheries, with so few active fishers and a rudimentary commercial system, the first fisheries development project must necessarily be limited in scope, with a choice of components appropriate to the situation.

Justification of choice of project components

3.8 Creation of a fish cold chain: in order to provide the interior market with sufficient quantities of quality fish, every phase in the circuit needs to be provided with permanent refrigeration cover.

3.9 Fitting out the boats with insulated containers or by insulating the holds, to enable them to carry ice out to sea. The ice would be made at the landing stages and could be used for keeping the fish cool when landed, during sorting, sale and transportation. Insulated vehicles are needed to transport the fish to the markets; each retail outlet must be equipped with a cold store or insulated container. Any surplus or unsold fish should be stored, chilled or frozen, and conserved both to reduce losses and to regulate supplies and support prices in times of plenty.

3.10 Increasing the sales outlets: fish must be put on sale in every district in Djibouti city. There are eight districts in all. Every secondary town should have one sales outlet: Obock, Tadjoura, Dikhil and Ali Sabieh.

3.11 Increasing production: introducing a new distribution system, and meeting the induced demand, will mean having to increase production. This can be done in several stages, making allowance for the constraints involved:

Stage 1: Setting up the installations and services for a new distribution network:

- a) supplying improved fishing gear and outboard motors for the existing houris fleet.
- b) introducing a small number of improved boats, to match the houris programme. These modern boats would also be fitted with outboard motors and high-yield fishing gear. If the model proves satisfactory, it could then replace all the old houris.

- c) introducing modern small-scale fishing vessels, having similar features to the dhows used in the region for fishing. This would satisfy four objectives: i) landings would increase substantially with very low manpower using a commercial fishery approach; ii) an experimental fisheries programme could be conducted, using new methods and facilities for the ground fish (demersaux) and pelagic species; iii) fish landed at Obock and Tadjoura by local fishermen that cannot be disposed of locally, could be transported to Djibouti City; iv) training could be provided for officers and deck-hands to manage and operate the modern small-scale fishing vessels.

Stage 2: This stage introduces modern fishing vessels, according to the results achieved in stage 1; the objective would be optimal exploitation of the nation's fishery resources.

Creation of a fisheries credit service

3.12 The distribution of facilities, boats, outboard motors and fishing gear to people with no other sources of finance in such a particular field as fisheries, must be carried out as part of a well-structured credit system, in joint collaboration with the SEP technicians and agents of the Banque Nationale de Djibouti (BND).

IV. The Project

A. General Description

4.1 The project would combine aid already pledged by USAID and France, plus the funds that would be provided by IFAD.

4.2 It is proposed to increase the supplies of fish to the domestic market by 50% over three years, by improving fish-wholesaling and marketing, and by increasing landings. It also aims at paving the way for a second phase in which the national fish resources would be optimally exploited. To achieve this, the project will endeavour to obtain all the technical assistance it requires.

4.3 The fish trade would be improved by using ice and cold storage throughout the whole process, from the moment the fish is caught to when it is sold retail, by: equipping the boats with insulated cases or hulls; producing ice specially for the fishing industry; concentrating all stages of preparation, sale, wholesale/retail handling and storage for Djibouti City in the fish sellers complex called "La Pêcheurie"; organizing a fish transportation service using light insulated trucks between "La Pêcheurie" and the retail markets at Djibouti, Dikhil and Ali Sabieh; setting up public fish retail outlets guaranteeing appropriate hygiene and short-term fish conservation facilities.

4.4 Landings would be increased by: supplying gear to the houris fishers; introducing a small number of improved houris and modern small-scale fishing craft similar in size to the traditional dhows; setting up technical training facilities for operation of the fleet; providing both people and material; establishing a credit system for the distribution of facilities; reviving the sea-fishing cooperative movement; preparing for the enlargement of fishery activities by implementing an experimental fisheries and training programme.

4.5 The project would involve all the fishing towns and the country's five urban centres: Djibouti, Tadjoura, Obock, Dikhil and Ali Sabieh.

B. Detailed features

Components of the cold chain

- 4.6 The project would provide insulated cases for the plastic houris. Each houri would be fitted out with one or two cases, thus enabling them to set out carrying about 70 kg of ice each time.
- 4.7 Ice-production plant: to produce 1 tonne every 24 hours of crushed ice. It will be installed at Obock. Another 2 tonne/day plant will be installed at "La Pêcheurie" in Djibouti City.
- 4.8 A new 25m³ prefabricated cold storage unit, operating at 0^o + 2^o or -20^oC will be installed at "La Pêcheurie".
- 4.9 Two insulated small trucks: each with a 1.5 tonne payload will be provided to transport the fish between "La Pêcheurie" and the markets at Djibouti, Dikhil and Ali Sabieh.
- 4.10 Insulated containers, with a capacity of 1 tonne of chilled fish, to be installed at 11 of the public fish retail outlets. Fifteen of these containers would be provided in all.
- 4.11 Public fish retail outlets

Thirteen will be built on the following basic model:

A 6 x 4 metre building made of ashlar bricks and "clostrat" tiles with a 3m counter covered covered with a canopy. The floor and walls will be tiled. Draining board. Sink with running water. Electric ceiling fan; room for storing fish on ice. Small cold store-room (8 m³) for the shops in Dikhil and Ali Sabieh.

- Locations
- Djibouti: (9 outlets) - Place Rambaud - Cité, near the territorial guards - Avenue 26 - Cité TSF - Cité du Stade
- Northern part of the Cité du Progrès
- Ambouli (2 outlets) - Northern district of the Hayabeleh lighthouse
- Tadjoura: at the side of the meat market
- Obock: at the side of the refrigeration plant
- Dikhil: at the side of the covered market
- Ali Sabieh: central market

The land is government-owned, and has been set aside for this purpose by the government; it can be made available at any time.

See annexed map of the city of Djibouti.

Improving catches

- 4.12 Outboard motors: 33 6HP outboard engines will be purchased to equip the houris fleet, with a set of spare parts.
- 4.13 Improved fishing gear for the houris: components for assembling the seines, tangle nets, cast-nets, hooks and material for the hand-lines and trolling - see annex 5 for a detailed list of these items.
- 4.14 Plastic houris: 10 reinforced fibre-glass boats with the same features as the houris (6-7m in length, with a 2 person crew and outboard motor) will be supplied to the Djibouti, Tadjoura and Obock fishers. They will be imported ready for use.

4.15 Two modern small-scale fishing vessels similar in size to the traditional dhows will be commissioned for service in Djibouti. They will be 13-15m long, with a 50-75HP diesel motor and a 5-person crew, fitted with an insulated hold. They will be equipped to fish for one or two days at a time, and delivered with a set of "mechanical" and "electronic" spare parts to give them complete independence of the local supply market; they would be fitted with commercial fishing gear (ground and drift lines and tangle nets) with a grant to purchase or manufacture experimental gear (nets, bow nets, lines, sienes). See annex 6 for a detailed list of the gear for the two modern small-scale fishing vessels.

4.16 Mechanical workshop: a workshop to provide maintenance and repair services for the outboard motors, the diesel engines and the mechanical and electronic components of the vessels will be set up at "La Pêche" in Djibouti City. The workshop will be fitted out with basic machine tools, and special tools for each type of gear. A small mobile workshop truck will also be provided so that repairs can be carried out at the harbour.

Technical assistance and training

4.17 Technical assistance will be provided for the permanent supervisors of the fishery, wholesale, marketing and training operations. This will be in the form of on-the-job training (6 person/years). The project will also provide consultants on short-term missions to help with marketing, organizing cooperatives, fishery techniques and statistics (8 person/months).

4.18 The project will also provide on-the-job training and improvement of skills for all the technical personnel with supervisory or executive duties. However, it would be possible to make use of six months of scholarships for training abroad, proposed by USAID.

C. Implementation schedule

4.19 The project has been structured by incorporating the facilities obtained from USAID and France (already procured, and due for delivery during 1980). Making allowances for the time it takes to process applications for IFAD loans, it is estimated that the components requested from IFAD could only be made available at the beginning of 1981. It follows that this project would have to be implemented in two stages, and that IFAD will only be involved in the second stage.

4.20 Phase 1: Year 1 - 1980

The project will follow the time-schedule laid down jointly with USAID, but on a smaller scale in the absence of several components (the new retail outlets) and because the fishing fleet at Obock and Tadjoura has been reduced.

4.21 The plan for the first year will involve the preparation of a campaign to promote fish consumption by the public, and the testing of the new facilities (ice, containers, trucks) on a smaller scale than originally planned, on behalf of public bodies (hospitals, schools, refugee aid).

- Commencement of extension work on behalf of the fishers, distribution of the fishing gear and outboard motors to be used on the existing hours; trials and demonstration runs with the improved tackle and gear; preparation of the training programme and the launching of the cooperative.

- Training and updating of Djibouti officials having supervisory and management responsibilities for the implementation of the project.

4.22 Facilities to be supplied in the first year: delivery of the two ice-making plants, to be commissioned in mid-1980. The fishing gear intended

for the existing houris fleet, and the eighteen outboard motors and the two insulated trucks will be supplied before mid-year. A master fisher and a technical assistant will also take part in the organization and management of operations.

4.23 Phase 2: Years 2-3 (1981-1982)

In the second year, the objectives are: commencement of the complete distribution circuit; enlargement of the fleet of small craft; provision of experimental small-scale fishing vessels.

4.24 Facilities provided in the second year: construction and equipping of the thirteen fish retail outlets; enlargement of the facilities at "La Pêcherie", and the installation of the new prefabricated "cold store"; equipping the workshop and equipment store; provision and commissioning of new houris, fully equipped with gear; delivery of the two modern small-scale fishing vessels, fully equipped. All of these items, which are mostly imported, will have to be delivered during the first three months of the year, and must be operational by mid-year.

D. Costs

4.25 The investment cost for the creation of the cold chain, will be 41 133 000 Dj Fr (US\$ 232 573).

4.26 The construction and equipping of the thirteen public fish retail outlets will cost 55 440 000 Dj Fr (US\$ 313 464).

4.27 Investment costs for improving the production facilities will be 57 459 000 Dj Fr (US\$ 325 048), as follows:

- equipping the traditional houris: 12 601 000 Dj Fr (US\$ 71 254);
- setting up the fleet of 10 plastic houris: 13 025 000 Dj Fr (US\$ 73 642);

- supplying the two "modern small-scale fishing vessels":
29 640 000 Dj Fr (US\$ 167 752), plus a small service
craft: 2 200 000 Dj Fr (US\$ 12 400). Another 10 720 000 Dj Fr
(US\$ 60 612) should be added to this for physical contingencies
to be financed by IFAD;

4.28 The mechanical and cold-store workshop will cost 4 000 000 Dj Fr (US\$ 22 617).

4.29 The working fund for the commercial activities will total 9 800 000 Dj Fr (US\$ 55 400), of which 1 800 000 Dj Fr (US\$ 10 177) for equipping the cooperative, and 8 000 000 Dj Fr (US\$ 45 233) for marketing the fish.

4.30 Technical assistance will total 84 928 000 Dj Fr (US\$ 479 200).

4.31 Operational costs scheduled under the project will total 60 104 000 Dj Fr (US\$ 364 832).

4.32 The total cost of the project will be 343 772 000 Dj Fr (US\$ 1 943 730), including a reserve fund to cover inflation of 12% of the total IFAD investment of year twelve (SIC) and 24% of the IFAD investment in year three. Foreign exchange represents 69% of the total investment.

4.33 The investment cost breakdown in terms of the four sources of finance is: Djibouti Government: 51 767 000 Dj Fr (US\$ 292 700) = approximately 15%. USAID: 88 076 000 Dj Fr (US\$ 498 000). Bilateral French aid: 31 000 000 Dj Fr (US\$ 175 300). IFAD's contribution will be 172 921 000 Dj Fr (US\$ 977 700). See Table 1, annex 10.

4.34 The investment schedule will be Year 1: 92 374 000 Dj Fr (US\$ 522 294); Year 2: 207 747 000 Dj Fr (US\$ 1 174 618); Year 3: 43 651 000 Dj Fr (US\$ 246 808). See Table 2, Annex 10.

IFAD's financial contribution

4.35 Facilities to be financed by IFAD

Twenty insulated containers (cases) for the houris: 1 600 000 Dj Fr (US\$ 9 047); the new cold store at "La Pêcheurie": 3 500 000 Dj Fr (US\$ 19 789). Constructing and equipping the thirteen public fish retail outlets: 55 440 000 Dj Fr (US\$ 313 464). The ten plastic houris with motor and fishing gear: 13 035 000 Dj Fr (US\$ 73 642). The two modern small-scale fishing vessels fully equipped: 29 640 000 Dj Fr (US\$ 167 752). Fitting out and furnishing the workshop: 4 000 000 Dj Fr (US\$ 22 670). The working capital fund for commercial activities: 9 800 000 Dj Fr (US\$ 55 400). Cost of expatriate mechanic 25 000 000 Dj Fr (US\$ 141 400). Physical contingencies: 10 720 000 Dj Fr (US\$ 60 612). A 20 188 000 Dj Fr (US\$ 114 147) allocation for inflation. See Table 3.

4.36 The distribution of these funds between Year 2 and Year 3 of the project: 153 696 000 Dj Fr (US\$ 869 000) in year 2, and 19 225 000 Dj Fr (US\$ 108 700) in Year 3. See Table 4.

V. Administration and Organization

A. Administration

5.1 The Livestock and Fisheries Directorate (SEP), would be the most suitable body to undertake responsibility for administering the execution of the project. Under its present Director, SEP has managed to substantially enhance the Djibouti fish trade, with the commissioning of the "La Pêcheurie"

complex as a landing/sales/storage centre, and to get the fishers used to the idea of setting up a cooperative scheme. This authority is also doing a great deal of useful work to distribute fresh meat in Djibouti (by supervising slaughtering operations at the time of sale and providing insulated trucks to transport the meat from the slaughter-house to the town markets. SEP would also be able to provide the minimum administrative staff required for the project, seconding some of their livestock officers to deal with fisheries. But they do not have a fisheries technologist, and so it will be necessary to call in expatriate technical assistance.

5.2 Technical assistance will comprise:

- two master-fishers to advise the project manager and supervise the implementation of the project operations. One of them will be particularly responsible for marketing for the traditional fleet, while the other would be in charge of the improved small-scale vessels (twenty-four months each).

- one marine engineer, to run the maintenance and repair workshop and manage the stock of outboard motors and spare parts (twenty-four months).

- consultants for marketing, organization of cooperatives and implementation of fishing techniques (eight months total).

5.3 A project committee will undertake coordination between the national and expatriate experts. See annex 6.

8. Organization

5.4 examining the present situation in which virtually all the fish is taken

automatically to "La Pêche" for sale, with or without storage, it would be fair to say that when the project supervisors manage all the components of the cold chain, they will be in full control of all the operations - using the facilities supplied to the fishers and the fish retail outlet tenants, and the credit recovery operations.

Management of cold storage installations

5.5A The cold chain installations are the ice-making plants, the cold stores, the sales complex, wholesale and retail selling points. They will become government property. Initially the project, and later SEP, will manage all of these facilities, except the fish retail outlets which will be rented to individual retailers.

Distribution of fishing gear

5.5B The master fisher and the expatriate engineer will supervise the storage and distribution of the equipment. When the engines and fishing gear are handed over, demonstration sessions must be given. Only members of the cooperative which is being created may procure the items of equipment; they must sign a contractual agreement laying down the conditions for use, and stipulating a schedule for technical supervision to be carried out by the project agents.

5.6 The ten plastic houri-type boats will be hire-purchased by the cooperative members individually, but with a joint guarantee by the cooperative.

5.7 The two modern small-scale fishing vessels will be given over to the fisher's cooperative by the Government on a hire-purchase basis. The cooperative will entrust their management to a special SEP department still to be created, called "experimental fishing-vessel department". These vessels would be managed using the "à la part" artisanal system.

5.6 The cooperative management committee will submit a list of persons interested in hiring the plastic houris to the project management committee, and a list of those who will become the permanent crew of the two modern small-scale fishing vessels.

Marketing system

5.9 At Djibouti, sales would be made at "La Pêcheurie" by public auction open to the managers of the fish retail outlets. Project personnel will handle the selling operations. Even when sales are made by batches, the catch of each houri will be dealt with separately. The proceeds of the sale will be given to the fisher after deduction of the loan repayment, social charges and cost of fuel and other necessary supplies. If any fisher feels that the prices are too low, he will be able to refuse to sell his catch and to store it in the cold store.

5.10 At Obock and Tadjoura, the fishers will take their own catch to the fish-market for sale, or to store it for later transportation to Djibouti.

5.11 The owners of the fish: the fisher or the trader who performs the various operations on the fish (sorting, washing, refreezing, maintenance) under the supervision of the project officials.

5.12 Fish transport between "La Pêcheurie" and the fish retail outlets will be effected by the two insulated trucks provided under the project; the trader to whom the fish belongs will be responsible for paying the cost of the operation.

Organization of the credit

5.13 The credit system for the facilities involves two types of equipment:

equipment obtained with USAID subsidies to be issued against payment of bills of exchange into a revolving fund, and equipment purchased using an IFAD repayable loan.

5.14 Repayments for equipment issued to fishers on an individual basis (boats, engines, nets) will be made by regular deductions from the proceeds of their fish-sales at "La Pêcheurie". The same applies to repayment of loans invested in the purchase of the two modern small-scale fishing vessels belonging to the cooperative.

5.15 The heavy installations - cold store, fish markets and their equipment will be repaid out of the operating profits and rents.

5.16 The accounts for these repayment operations will be managed at "La Pêcheurie", and payments will be made into accounts opened with the BND for both USAID subsidies and the IFAD loan.

5.17 A committee of all the project officials, the BND and the fishers' representatives will meet regularly and make the decisions relating to management of disbursed credits and reinvestment.

Maintenance and repairs of facilities

5.18 The project workshop set up at "La Pêcheurie" will provide the following services: testing the facilities and equipment upon delivery, familiarizing the fishers with their use; routine maintenance; certain types of repair work, monitored by other workshops in the case of mechanical equipment, cold storage and electronic facilities.

VI Production - Markets and Prices

6.1 At the present time, fish landings at Djibouti are estimated to be 580 tonnes, equivalent to a per capita consumption of 2 kg/annum. This is far too low to meet the domestic demand. And this demand is growing very rapidly, both because of the natural increase in the population, and the inflow of refugees. Apart from fish, other locally-available resources are very limited: over 95% of all food consumed in Djibouti has to be imported. Red meat is expensive, and there is no poultry at all. Most of the population of Djibouti City, 200 000, do not have access to the fish, which is distributed at two public retail outlets in the poorer districts (1-2 tonnes/day). The 200 tonnes of imported frozen fish and shellfish is for the foreign community. In the interior, the towns of Dikhim and Ali Sabieh have never had any fish supplies.

6.2 The price of fish varies from one species to another, and according to the season and time purchased. The average price of landed fish is about 170 Dj Fr/kg (US\$ 0.95), while the average retail outlet price is 300 Dj Fr/kg (US\$ 1.70). One can explain the difference in terms of the small number of fish-traders and the marketing risks caused by the lack of cold storage facilities for preservation.

6.3 During the fishing season, the extra production due to the project will be 285 tonnes, which is about 50% of the current levels. The total national production of fish will also be enhanced by the use of the cold chain facilities and the supervisory staff provided by the project.

6.4 The creation of a network of thirteen public fish retail outlets, using cold storage and sale by auction will help to narrow the gap between the price paid to the fisher and the retail price. One estimates that the average price of fish passing through "La Pêcherie", in Djibouti or sold

at the fish-markets of Obock and Tadjoura will be 220 Dj Fr/kg, which should ensure that the production facilities installed under the project will have a good earning capacity. The average retail price will remain 300 Dj Fr/kg. This is a very conservative estimate and it would make it possible to make the most of the investment to benefit distribution.

VII Financial and Economic Justification of the Project - Credit Terms

7.1 Financial rate of return on the new fishing vessels (IFAD)

The rate of return on one plastic houri will be 101.6%, while the rate of return on a modern small-scale fishing vessel will be 41.7%. The management cost of the project has not been included.

7.2 Financial rate of return on the "distribution chain" component (IFAD)

The rate of return on the prefabricated cold store will be 30.4%. The rates for the thirteen public retail outlets will be: 23.7% for the nine outlets in Djibouti City 60.8% on the two on the northern coast, Obock and Tadjoura, and 14.4% on the fish-markets in the two towns in the interior, Dikhil and Ali Sabieh.

7.3 Financial rate of return on the IFAD loan

The financial rate of return on the whole of the IFAD loan is put at 24.3%.

7.4 Financial rate of return on the installations financed by the USAID subsidy and France

The rate of return on the Obock ice-making plant is put at 76.6%, and the rate of return on the Djibouti ice-making plant at 101.6%.

7.5 The financial rate of return on the project as a whole

The total project rate of return would be 11.4%.

7.6 Credit terms for the means of production created under the project

The credit authority for fisheries to be created at the BND could offer the following credit terms to persons procuring goods and services for production purposes (fishers, the cooperative, the project unit):

<u>IFAD Components</u>	<u>Rate</u>	<u>Maturity period</u>	<u>Grace period</u>
<u>Houris</u>			
- engine	9%	1 year	-
- hull	9%	3 years	1 year
<u>U.P.A.M.</u>	9%	5 years	1 year
<u>Cold store</u>	9%	5 years	1 year
<u>Djibouti city retail outlets</u>	9%	10 years	-
<u>Obock & Tadjoura fishmarkets</u>	9%	5 years	-
<u>Dikhil & Ali Sabieh fishmarkets</u>	6%	12 years	-
<u>Obock ice-making plant</u>	9%	10 years	+
<u>Djibouti ice-making plant</u>	9%	5 years	-
<u>Djibouti cold storage complex</u> ^{1/}	6%	5 years	-

^{1/} All the cold stores and the premises already in use.

Economic justification

7.7 Fish is the only foodstuff resource on which Djibouti can depend to deal with the very serious protein deficit from which the population is suffering. In view of the very low current level of fish production and the pressing nature of the problem, the first small-scale fisheries development project is going to need a great deal of investment, totalling about 344 million Dj Fr (US\$ 1 943 720) to increase landings by 285 tonnes in Year 3, which is 50% of the present catch, worth 85.5m Dj Fr (US\$ 483 500). Since the earning capacity of the fishery operations will make it possible to repay the loans for the boats financed under the project very rapidly, the national credit authority will also be able to use the same funds to finance a new set of ten houris in Year 5, and two large vessels in Year 7. In year 8, production is expected to double, as a result.

7.8 The project will create about 250 permanent jobs, of which seventy would be directly created (thirty seamen - thirteen equipment employees and twenty-six retailers. It must improve the social status of the fishers and stimulate new jobs in fishing by preparing the integration of all the activities in this sector from the catch to the retail trade stages in support of the fishing cooperative movement.

7.9 The experimental fisheries programme and the training scheme for young fishers will make it possible to pave the way for the second stage of development, to lead to a rational and optimal use of the country's fish resources.

VIII. Follow-up

Problems pending

The Djibouti Government will have to confirm its approval of the plan to

coordinate the aid already granted and scheduled, with the aid that IFAD will be asked to provide.

Assurance must be forthcoming that USAID will keep to its plan of action with the modifications proposed to make allowance for the enhancement of the fisheries facilities and that the French will maintain the post of the master fisher at SEP until December 1982.

The government must also confirm that the ban on night fishing in the North is only a temporary measure.

Follow-up

A naval engineer, appointed by the FAO Fisheries Department will be given the responsibility for studying which types of boats should be introduced into Djibouti. This will have to be carried out during the first quarter of 1980.

DJIBOUTI
DEVELOPMENT OF SMALL-SCALE FISHING IN DJIBOUTI

Allocation of resources ^{1/} in '000 DjFr.

	<u>Gov't</u>	<u>US/AID</u>	<u>FRANCE</u>	<u>IFAD</u>	<u>TOTAL</u>
I. Cold chain	<u>15 000</u>	<u>15 033</u>	<u>6 000</u>	<u>5 100</u>	<u>41 133</u>
II. Fish retail outlets	-	-	-	<u>55 440</u>	<u>55 440</u>
III. Improvement of means of production:	<u>1 000</u>	<u>13 794</u>	-	<u>42 665</u>	<u>57 459</u>
fitting out traditional hours	<u>1 000</u>	<u>11 601</u>	-	-	<u>12 601</u>
new hours	-	-	-	<u>13 025</u>	<u>13 025</u>
2 modern small-scale fishing vessels	-	-	-	<u>29 640</u>	<u>29 640</u>
personnel liaison boats	-	<u>2 193</u>	-	-	<u>2 193</u>
IV. Workshop and stores	-	-	-	<u>4 000</u>	<u>4 000</u>
V. Working capital fund	-	-	-	<u>9 800</u>	<u>9 800</u>
VI. Operating	<u>35 767</u>	<u>59 249</u>	<u>25 008</u>	<u>25 008</u>	<u>145 032</u>
<u>BASE COST OF PROJECT</u>	<u>51 767</u>	<u>88 076</u>	<u>31 008</u>	<u>142 013</u>	<u>312 864</u>
VII. Physical contingencies				<u>10 720</u>	<u>10 720</u>
Subtotal	<u>51 767</u>	<u>88 076</u>	<u>31 008</u>	<u>152 733</u>	<u>323 584</u>
VIII. Inflation contingency allocation				<u>20 188</u>	<u>20 188</u>
<u>TOTAL COST OF PROJECT</u>	<u>51 767</u>	<u>88 076</u>	<u>31 008</u>	<u>172 921</u>	<u>343 772</u>

^{1/} See Annex 10

DJIBOUTI
DEVELOPMENT OF SMALL-SCALE FISHING IN DJIBOUTI

	<u>Project costs</u> ^{1/}			<u>US\$</u>		
	<u>Local currency ('000 DjFr)</u>			<u>Local Foreign exch.</u>		
	<u>Total</u>	<u>Local Currency</u>	<u>Foreign exch.</u>	<u>Total</u>	<u>Local Currency</u>	<u>Foreign exch.</u>
I. Cold chain	<u>41 133</u>	<u>15 000</u>	<u>26 133</u>	<u>232 579</u>	<u>84 812</u>	<u>147 761</u>
II. Retail outlets	<u>55 440</u>	<u>50 000</u>	<u>5 440</u>	<u>313 464</u>	<u>282 706</u>	<u>30 758</u>
III. Improvement of production facilities:	<u>57 459</u>	-	<u>57 459</u>	<u>325 048</u>	-	<u>325 048</u>
fitting out traditional hours	<u>12 601</u>	-	<u>12 601</u>	<u>71 254</u>	-	<u>71 254</u>
new hours	<u>13 025</u>	-	<u>13 025</u>	<u>73 642</u>	-	<u>73 642</u>
2 modern small-scale fishing vessels	<u>29 640</u>	-	<u>29 640</u>	<u>167 752</u>	-	<u>167 752</u>
liaison craft	<u>2 193</u>	-	<u>2 193</u>	<u>12 400</u>	-	<u>12 400</u>
IV. Workshop and store	<u>4 000</u>	<u>1 000</u>	<u>3 000</u>	<u>22 617</u>	-	<u>16 963</u>
V. Working capital fund	<u>9 800</u>	-	<u>9 800</u>	<u>55 400</u>	-	<u>55 400</u>
VI. Project operating expenses	<u>145 032</u>	<u>35 767</u>	<u>109 265</u>	<u>820 029</u>	<u>202 225</u>	<u>617 804</u>
Base cost of project	<u>312 864</u>	<u>35 767</u>	<u>211 097</u>	<u>1 768 968</u>	<u>569 580</u>	<u>1 199 388</u>
VII. Contingencies on IFAD investment	<u>10 720</u>	-	<u>10 720</u>	<u>60 612</u>	-	<u>60 612</u>
Subtotal	<u>323 584</u>	<u>101 767</u>	<u>221 817</u>	<u>1 829 580</u>	<u>569 580</u>	<u>1 260 000</u>
VIII. IFAD-Inflation contingency allocation	<u>20 188</u>	-	<u>20 188</u>	<u>114 147</u>	-	<u>114 147</u>
Total project cost	<u>343 772</u>	<u>101 767</u>	<u>242 005</u>	<u>1 943 737</u>	<u>569 580</u>	<u>1 374 147</u>

^{1/} See Annex 10.

TABLE 3

DJIBOUTI

Development of small-scale fishing

Items to be financed by IFAD

	<u>Unit price</u> <u>DjFr</u>	<u>No.</u>	<u>DjFr</u>	<u>Total Cost</u> <u>US\$</u>
1. Houris insulated cases	80 000	20	1 600 000	9 047
2. "La Pêcheurie" cold store	3 500 000	1	3 500 000	19 789
3. Construction of 13 fish retail outlets	variable	13	50 000 000	282 706
4. Refrigerators for the retail outlets	96 000	15	1 440 000	8 142
5. Cold stores for the fish-markets at Dikhil & Ali Sabieh	2 000 000	2	4 000 000	22 616
6. Plastic hulls and houris	500 000	10	5 000 000	28 270
7. Houris outboard motors	150 000	15	2 250 000	12 722
8. Outboard engine spares 30% of the value of 45 items			2 025 000	11 450
9. Houris fishing gear	misc.		3 750 000	21 203
10. Construction of and equipment for the cold storage workshop			4 000 000	22 616
11. Two modern small-scale fishing vessels	10 000 000	2	20 000 000	113 082
12. Diesel engine spare parts	one set		500 000	2 827
13. UPAM ¹ /Commercial fishing gear	2 569 000	2	5 140 000	29 062
14. UPAM/experimental fishery equipment	2 000 000	2	4 000 000	22 616
15. Allocation for 10% cost increase	1-14		10 720 000	60 212
16. Assistant mechanical engineer	24 Months		25 008 000	141 398
17. "Production" working fund	1 Month		1 800 000	10 177
18. "Distribution" working fund	1 Month		<u>8 000 000</u>	<u>45 235</u>
			152 733 000	863 570
Reserve for inflation			<u>20 188 000</u>	<u>114 147</u>
Grand total			<u>172 921 000</u>	<u>977 717</u>

[1/ modern fishing boats]

TABLE 4

DJIBOUTI

Development of small-scale fishery
Schedule for finance/credits requested from IFAD
in '000 DjFr and (US\$)

	year 1	year 2	year 3	Total
Prefabricated cold store	-	3 500 (19 789)	-	3 500 (19 789)
Construction of and equipment for the retail outlets	-	55 440 (313 464)	-	55 440 (313 464)
10 plastic houris	-	12 625 (71 383)	2 000 (11 308)	14 625 (82 691)
2 modern small-scale fishing vessels	-	28 640 (161 934)	1 000 5 654	29 640 (167 588)
Mechanical workshop: fitting and furnishing	-	4 000 (22 616)		4 000 (22 616)
Working fund	-	9 800 (55 400)		9 800 (55 400)
Technical assistance	-	12 504 (70 700)	12 504 (70 000)	25 000 (141 400)
Physical contingencies	-	10 720 <u>(60 612)</u>	-	10 720 <u>(60 612)</u>
Subtotal		137 229 (775 910)	15 504 (87 660)	152 733 (863 570)
Inflation reserve fund (12%)		16 467 <u>(93 108)</u>	3 721 <u>(21 039)</u>	20 188 <u>(114 147)</u>
Grand total	nil	153 696 (869 018)	19 225 (108 699)	172 921 (977 717)