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DJIBOUTI

# FISHERIES DEVELOPMENT PHASE II

PROJECT PAPER

603-0015

January 1984

Agency for International Development

Washington, DC 20523

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D C 20523

ACTION MEMORANDUM TO THE ASSISTANT ADMINISTRATOR FOR AFRICA

FROM: AFR/PD, Norman Cohen

SUBJECT: Djibouti Fisheries Development Phase II (603-0015)

Problem: Your approval is requested for a grant of $2,998,000 from the Economic Support Fund appropriation to Djibouti for Fisheries Development Phase II (603-0015). It is planned that $1,000,000 will be obligated in FY 1984.

Discussion:

A. Project Description - The purpose of the Fisheries Development Project Phase II is to assist Djibouti in improvement and expansion of seafood production, processing and marketing. The project entails a continuation and expansion of technical and material assistance previously provided under project 603-0003 (Djibouti Fisheries Development). Through the original project, progress has been made in the areas of institutional development, fishing operations and marketing. The national fishing cooperative (ACPM) has been strengthened, commodities provided and a revolving credit fund set up for equipment investments by fishermen, and Djiboutian seafood marketing capacity expanded. Production levels of artisanal fishermen have risen substantially, but have not met market demand. The fisheries industry retains weaknesses in the areas of long-range planning, production levels, urban marketing and product handling/quality control.

The Phase II project is designed to improve the utilization of local marine resources for the benefit of the Djibouti populace. The project will help increase fishermen income, increase the national capacity to process and market seafood, provide access to seafood for the entire urban populace, and enhance the ability of the Government of the Republic of Djibouti (GROD) to support the fisheries industry as a whole. The strategy involves the use of extensive technical assistance and training of local personnel, and minor commodity support. In addition to short-term specialized technical assistance, long-term technical assistance will be offered over the three year life of the project in the areas of policy and program formulation, marine biology research, financial and operations management, marketing, fishermen training and equipment testing. The projected benefits of Phase II include: a 25% growth in the fishing fleet size, an overall internal rate of return of 21%, increased income for fishermen, the fisheries cooperatives and retailers, and a 100% increase in seafood production.

The project is in full conformance to AID country strategy. The fisheries subsector has the greatest potential of all Djibouti's productive sectors. The Phase II project is intended to provide assistance for

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institution building and to increase the availability of fish as a supplementary food source, improving the Djiboutians' protein - deficient diet. Thus this project will meet the basic needs of the people and economy through improved diet, increased employment, and import substitution.

Direct project beneficiaries are fishing families, employees of ACPM and the Fisheries Division of the Ministry of Agriculture, and individuals with on-shore jobs related to the fisheries industry (sales and services). Indirect beneficiaries are Djiboutian consumers who will have access to a lower cost, locally produced protein food.

B. Financial Summary

USAID Funding (in $ '000's)

| Activity | Year 1 | Year 2 | Year 3 | Total |
|---|---|---|---|---|
| SEP (Ministry) Assistance | $ 336 | $ 288 | $ 178 | $ 802 |
| ACPM (Cooperative) Assistance | 504 | 426 | 336 | 1,266 |
| Support/Training | 138 | 106 | 74 | 318 |
| Commodities | 95 | 50 | 15 | 160 |
| Others | 91 | 159 | 202 | 452 |
| Life of Project Costs | $1,164 | $1,029 | $ 805 | $2,998 |

GROD and Other Donor Funding

| | Year 1 | Year 2 | Year 3 | Total |
|---|---|---|---|---|
| GROD (Government) | $ 850 | $ 300 | $ 250 | $1,400 |
| ACPM (Fisheries Cooperative) | 250 | 350 | 500 | 1,100 |
| IFAD (UN estimate) | 600 | 600 | 400 | 1,600 |
| FAC (French Aid) | 100 | 105 | 110 | 315 |
| CRS-UNICEF | 75 | 75 | 75 | 225 |
| Estimated Total for All Participants | $3,039 | $2,459 | $2,140 | $7,638 |
| | FY 84 | FY 85 | FY 86 | Total |
| USAID Obligations Schedule | $1,000 | $1,000 | $ 998 | $2,998 |

C. Socio-Economic, Technical and Environmental Description

1. Socio-economic acceptability: The project is judged socially sound. It will help to satisfy the large unmet demand for seafood products among Djiboutian consumers, and will create new employment in the fisheries industry.

2. Human rights implications: None

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3. Technical analysis: The project is judged technically sound. It will provide upgrading of artisanal fisheries technologies in use in Djibouti.

4. Environmental analysis: The project IEE is negative. No future environmental analyses are necessary. The project contains assistance in four major areas: management, training, research and minor commodity support. Both the training and research components meet the criteria for categorical exclusion in accordance with Section 216.2(c)(2)(i)(ii). The management and commodities components were examined and a Negative Determination granted at the PID review stage.

D. Implementation:

1. Major conditions and covenants focus on Djiboutian support to the project through selection of qualified counterparts, operational support to the AID-financed research vessel, and material support of the national fishing cooperative and its membership. The covenants are considered necessary, and well within GROD capacities to fulfill.

2. The Project Committee has reviewed the Implementation Plan and believes that it is realistic.

3. The major implementing agencies will be the Fisheries Division, Ministry of Agriculture, GROD, the ACPM and AID (through a contractor to be selected).

E. 611(a): The requirements of 611(a) have been met.

F. 611(b): Not applicable.

G. The project officer in the field is John Lundgren, AID Representative/Djibouti. The project officer responsible in AID/W is Allan Reed, AFR/PD/EAP.

H. On December 9, 1983, an ECPR meeting was held under the chairmanship of DAA/AFR Glenn Patterson. The project was approved with the following advice to the field:

1. The Mission should establish long-term, in-depth collaboration with other donors in training and planning for the fisheries sector. Given the low educational level of the Djiboutian workforce, long-term training in maritime artisanal fisheries is appropriate. Such training might best be provided by another donor in Europe or elsewhere or by AID through another project.

2. The final evaluation of the project should consider possible Phase III participation by AID through the medium of OPIC guaranteed investment or loans or a follown-on bilateral project. However, Phase II should be a self-contained effort.

I. Waivers: Source/Origin Waiver for Vehicle attached. Waiver request for training materials, gear and miscellaneous equipment held pending further justification from Djibouti.

J. Justification to the Congress: Advice of Program Change is in LEG for clearance.

Recommendation: That you sign the attached Project Authorization and thereby approve FY 1984 funding of $1,000,000 and the requested waiver.

Attachments:
1. Project Authorization
2. Project Paper
3. Waiver

Clearances:
AFR/PD/EAP, JHeard _____ Date 12/21/83
AFR/EA, ESpriggs _____ Date 12/22/83
AFR/DP, HJohnson _____ Date [illegible]
GC/AFR, DRobertson _____ Date [illegible]
PPC/PB, RKramer _____ Date 12/24/83
DAA/AFR, GPatterson _____ Date 12/29/83

Drafted:AFR/PD/EAP, EKerst:dph:12/13/83

Doc. 0548J

# PROJECT AUTHORIZATION

Cooperating Country: Djibouti

Name of Project: Fisheries Development II

Project Number: 603-0015

1. Pursuant to Section 531 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Fisheries Development II Project (603-0015) for Djibouti, involving planned obligations of not to exceed $2,998,000 in grant funds over a three year period from date of authorization, subject to availability of funds in accordance with the AID OYB/allotment process, to help in financing foreign exchange and local currency costs for the project. The planned life of project is three years from the date of initial obligation.

2. The Project consists of a variety of activities designed to improve production, processing and marketing of fish in Djibouti, and to strengthen the institutions which administer the fisheries industry in Djibouti. These activities will include training of fisherman in more efficient techniques for fishing and fish processing; research on and exploration of fisheries resources; trials and demonstrations of new fishing gear, equipment and techniques; improvements to existing fish marketing plan based on market analyses and the construction of a marketing office; the development of a national fisheries industry strategy and policies; and the formulation and implementation of improved financial control systems for the principal fish marketing organization in Djibouti, the Association of Marine Fisherman (ACPM).

3. The Project Agreement, which may be negotiated and executed by the officer(s) to whom such authority is delegated in accordance with AID regulations and Delegations of Authority shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as AID may deem appropriate.

   a. Source and Origin of Commodities, Nationality of Services

      Commodities financed by AID under the Project shall have their source and origin in the Cooperating Country or in countries included in AID Geographic Code 941, except as AID may otherwise agree in writing. Except for ocean shipping, the suppliers of commodities or services shall have the Cooperating Country or countries included in AID Geographic Code 941 as their place of nationality, except as AID may otherwise agree in writing. Ocean shipping financed by AID under the

Project shall, except as AID may otherwise agree in writing, be financed on flag vessels of the United States or the Cooperating Country.

b. Covenants

(1) The Cooperating Country will assure that qualified counterpart personnel are provided for the AID-financed master fisherman, marketing manager (ACPM) and fisheries biologist not later than their arrival in Djibouti.

(2) The Cooperating Country will covenant and agree to provide all personnel required to operate the AID-financed research vessel and all funding necessary to pay the operating expenses of the research/exploratory program throughout the entire duration of the project.

(3) The Cooperating Country will agree that the primary function and use of the AID-financed research vessel throughout the Project be to provide data and information on fisheries resources which is required to determine proper fishing practices in Djiboutian waters and that the demonstration of fishing gear and methods and the training of crew and fishermen will be primarily carried out on other vessels.

(4) The Cooperating Country will agree that ACPM will be permitted to continue to utilize all government-owned facilities currently in use by it and will continue to enjoy all other governmental privileges that it currently has regarding its operation throughout the duration of the Fisheries II Project.

(5) The Cooperating Country will allow prices for fish products charged by ACPM to reflect actual costs and allow ACPM and its members and GROD-owned retail outlets to earn a reasonable profit.

(6) The Cooperating Country will provide adequate office space for the management/marine economist expert and fisheries biologist.

c. Waivers

Notwithstanding the provisions of paragraph 3a above, and based on the justifications provided in the Project Paper, the following waiver is hereby approved to permit procurement from the source/orgin indicated:

Waiver of the requirement that commodities for the Project have their source and origin in the Cooperating Country and AID Geographic Code 000 (United States) and the requirement of Section 636(i) of the Foreign Assistance Act to permit the procurement of one non-U.S.-manufactured motor vehicle of probable (Code 935) origin of an approximate value of $15,000. It is hereby certified that (a) special circumstances exist in this case which justify the waiver of

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the requirement for procurement of U.S.-manufactured motor vehicle under Section 636(i); and (b) that exclusion of procurement of the required vehicle from Free World countries other than the Cooperating Country and countries included in AID Geographic Code 941 would seriously impede the attainment of U.S. foreign policy objectives and the objectives of the foreign assistance program.

Assistant Administrator
Africa Bureau

1/3/84
Date

Drafted:GC/AFR, DRobertson:dph:12/16/83

Doc. 551J

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AGENCY FOR INTERNATIONAL DEVELOPMENT

# PROJECT DATA SHEET

1. TRANSACTION CODE: A (A = Add, C = Change, D = Delete)

Amendment Number

DOCUMENT CODE: 3

COUNTRY/ENTITY: Djibouti

2. PROJECT NUMBER: 603-0015

4. BUREAU/OFFICE: Africa 06

3. PROJECT TITLE (maximum 40 characters): Fisheries Development Phase II

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 09 DD 30 YY 88

7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4)

A. Initial FY 84 B. Quarter C. Final FY 87

8. COSTS ($000 OR EQUIVALENT $1 = )

| A. FUNDING SOURCE | FIRST FY 84 B. FX | C. L/C | D. Total | LIFE OF PROJECT E. FX | F. L/C | G. Total |
|---|---|---|---|---|---|---|
| AID Appropriated Total | 308 | 84 | 582 | 2652 | 346 | 2998 |
| (Grant) | ( 308 ) | ( 84 ) | ( 582 ) | ( 2652 ) | ( 346 ) | ( 2998 ) |
| (Loan) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Other U.S. 1. | | | | | | |
| Other U.S. 2. | | | | | | |
| Host Country | | 175 | 175 | | 1400 | 1400 |
| Other Donor(s) | 188 | 40 | 228 | 1565 | 260 | 1825 |
| TOTALS | 586 | 299 | 885 | 4217 | 2006 | 6223 |

9. SCHEDULE OF AID FUNDING ($000)

| A. APPROPRIATION | B. PRIMARY PURPOSE CODE | C. PRIMARY TECH. CODE 1. Grant | 2. Loan | D. OBLIGATIONS TO DATE 1. Grant | 2. Loan | E. AMOUNT APPROVED THIS ACTION 1. Grant | 2. Loan | F. LIFE OF PROJECT 1. Grant | 2. Loan |
|---|---|---|---|---|---|---|---|---|---|
| (1) ESF | 323 | 314 | | | | 2998 | | 2998 | |
| (2) | | | | | | | | | |
| (3) | | | | | | | | | |
| (4) | | | | | | | | | |
| TOTALS | | | | | | | | | |

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each): 320 077

11. SECONDARY PURPOSE CODE

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

| A. Code | BU | RGEN | COOP | NUTR. | TECH | TNG | |
|---|---|---|---|---|---|---|---|
| B. Amount | | | | | | | |

13. PROJECT PURPOSE (maximum 480 characters)

1. Increase fishermen incomes and employment opportunities in fisheries.
2. Increase Cooperative's (ACPM) ability to serve members and clientelle.
3. Improve marketing so that all potential customers are reached.
4. Improve the GROD's ability to support the entire fisheries industry.

14. SCHEDULED EVALUATIONS

Interim MM 09 YY 85 MM YY Final MM 07 YY 86

15. SOURCE/ORIGIN OF GOODS AND SERVICES: ☐ 000 ☐ 941 ☐ Local ☒ Other (Specify) 935

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a ____ page PP Amendment.)

17. APPROVED BY

Signature

Title: AID REPRESENTATIVE DJIBOUTI

Date Signed: MM 10 DD 24 YY 83

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM DD YY

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## ACRONYMS

| | |
|---|---|
| ACPM - | Association Cooperative de Pecheurs Maritime or Cooperative Association of Marine Fishermen. |
| B/C - | Benefit to cost ratio |
| CDSS - | Country Development Strategy Statement |
| CRS - | Catholic Relief Services |
| DF - | Djiboutian Francs, DF 175 equal to U.S. $1.00 |
| FAC - | Fonds d'Assistance et Cooperation, French Aid Organization |
| FAO - | Food and Agriculture Organization United Nations |
| FIFO - | First goods received are first sold, first in-first out |
| GDP - | Gross Domestic Product |
| GROD - | Government of the Republic of Djibouti |
| IFAD - | International Fund for Agriculture Development, United Nations |
| IHAP - | International Human Resources Development Project |
| IRR - | Internal rate of return |
| Kg - | Kilogram, 1,000 kilograms equal 1 ton |
| OPG - | Overseas Program Grant |
| RDA - | Resource Development Associates |
| REDSO/ESA | Regional Economic Development Services Offices for East and Southern Africa |
| SEP - | Service de Elevage et Peche or Livestock and Fisheries Department, Ministry of Agriculture |

# DJIBOUTI FISHERIES DEVELOPMENT PHASE II
## PROJECT PAPER
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Design Team for Project Paper

Timm A. Harris, Team Leader (Project Development Officer, REDSO/ESA)
Judy Bryson, Economist and Sociologist (Consultant)
Warren Rathjen, Fisheries Researcher (National Marine Fisheries Service)
Lloyd Regier, Food Technologist (National Marine Fisheries Service)
Donald Sweat, Marine Extension Agent (University of Florida)
Philip Youngberg, Special Products Marketing (National Marine Fisheries Service)

Socio-Economic Study Team

Inger Bjorklund, Sociologist (Consultant, FAO)
Georg Walter, Sociologist (Consultant, FAO)

## I. SUMMARY

### A. BACKGROUND

The Republic of Djibouti attained independence from France in 1977, but is still greatly influenced by French administrators and the military. Djibouti is a democracy with an elected President and legislative assembly. Representation is fairly divided between the two major tribal groups, the Afars and Issas. There has been some opposition to the present government, but the situation appears quite stable and peaceful at this time.

Djibouti is a non-aligned nation with good relations in the third world, with western powers and with communist countries. Its importance to these spheres lies in its strategic location as a ship refueling/refitting point and trading center for the Red Sea, Indian Ocean and Persian Gulf regions. It serves as a buffer and stabilizing influence in the region, as well as a point of contact for a variety of diverse political philosophies. The continued independence and viability of Djibouti is probably essential to prevent escalation of warfare in the Horn of Africa. The country's record on human rights can be characterized by the maintenance of open borders and the provision of refugee for peoples from Ethiopia and Somalia.

Djibouti has been traditionally split by the ethnic rivalries between the Issas (of Somali origin) and the Afars (of Ethiopian origin). This separation is still apparent, the south being dominated by Issas and the north by Afars, and great care has been taken to ensure the representation of both groups within the executive and legislative branches of the government and in the civil service. Both ethnic groups are predominantly Moslem.

Djibouti has an extremely limited resource base. The land is marked by mountains and several plains, composed mainly of basaltic rock and sand. An estimated 1% of the land area may have potential for agricultural development. There are only about 250 hectares under cultivation in the entire country. The country has no major concentration of minerals. Water resources are confined to underground acquifers, there being no permanent surface flow. The extent of water resources is not fully known.

Djibouti has a population of about 260,000 with some two-thirds living in Djibouti city. This includes a large expatriate community estimated at 20,000 or 7% of the total population. Refugees are estimated at an equal level (roughly 20,000 people) and are mainly from Ethiopia's Ogaden. An estimated 45% of the potential labor force is unemployed. One out of every three salaried employees works in the public sector. The foreign population, half French and half Arab/others, are the prime contributors to the productive sector. The French labor force consists of 4,500 military and 1,000 in the private and public sectors. Other foreigners are most prominent in general commercial activities and total roughly 3,500 of the labor force.

The major economic activities of the country center around the port of Djibouti, the railway to Ethiopia and the trade, communication and service activities supporting the expatriate community. The service sector accounts for approximately 80% of the GDP, commerce being the prime contributor. Agriculture accounts for only 6% of the GDP and is limited to production to saline resistant melons, tomatoes and peppers, the slaughter and sale of largely imported cattle, and the sale of fish. In recent year construction has increased considerably in response to renewed confidence

following the tense earlier independence period. The bulk of construction has been for housing.

Commercial activity, which prior to the Ogaden conflict was divided between transit trade to Ethiopia and to the indigenous French military and expatriates, is now largely confined to the latter and accounts for roughly one quarter of Djibouti's GDP. Exports of goods and services when re-exports are excluded, however, account for less than 3% of GDP. Hence, in summation, the economy is unusually skewed and remains very heavily dependent upon its expatriate consumers. Taxes on expatriate salaries provide another important source of income for Djibouti. Added to this rather artificial milieu is the high luxury consumption rates, triggering a spiraling inflation and cost of living. Consumer prices are higher than found in other countries in the region, largely due to European consumption patterns, but also because most staple food supplies are obtained from Europe and Kenya. Wages in Djibouti are very high compared to other countries within the region. The minimum wage is equivalent to $900 per year (three and four times that of Somalia and Ethiopia respectively). Nevertheless when one factors in the magnitude of the extended family which may live off the income of the prime wage earner, per capita income diminishes considerably. Given the above, it could be argued that Djibouti should be ranked among the lower income countries, especially when one considers that one-third of the population (primarily nomads) living in rural areas have virtually no income. Based on admittedly scant statistical information, the World Bank has arrived at an estimate of per capita income of $400 (see the Social Soundness Analysis, Annex F). Note per capita income is $260 with price corrections for expatriates.

Industry is limited principally to soda and water bottling. There are plans to develop a milk reconstitution factory and a cement plant in the future. The sole indigenous industry to date is mineral water production.

For such a small country, Djibouti has a rather extensive physical infrastructure, a result of a past French colonial presence: the port could service up to a million tons in shipping annually but is functioning at less than half that rate; the well equipped airport that could service almost double its present traffic; the railway from Djibouti to Addis Ababa has deteriorated due to the lower traffic and consequential difficulty in justifying proper maintenance and rehabilitation of the system; and a paved and unpaved road network of 273/km and 2,500/km respectively.

Djibouti's financial status is fairly balanced. Government expenditures over the past several years have run close to 25% of GDP. Most public capital expenditures are directly or indirectly financed through external assistance. Increasing fiscal resource needs have been satisfied by raising tax rates, levies on all imports, on professional and corporate earnings, as well as on expatriate salaries. The key factor which continues to buttress the economy is unusually high donor assistance levels. From independence to the present a total of over $300 million has been provided or pledged. When one factors in past French military subventions of close to $20 million per year, Djibouti becomes one of the highest per capita aid recipients in the world.

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However, development prospects are very limited as the modern economy is heavily dependent on an expatriate presence to fuel consumption and commerce, as well as to run much of the public sector administration. A telling example of the lack of capability of Djibouti to administer its own development is shown in the number of recent high school graduates, totalling 35 for the nation in 1981 and 43 in 1982.

B. PROJECT HISTORY

The USAID Fisheries Development Project (603-0003) has been providing assistance to the fisheries industry of Djibouti since early 1980. Technical assistance, training and certain commodities are being utilized to improve production, processing and marketing of marine products. Efforts are concentrated on the Cooperative Association of Marine Fishermen (ACPM). The Project has the overall purposes of improving fishing methods and equipment, expanding the fisheries industry nationwide and helping to improve self-sustaining public and private institutional capabilities. The Project's major tasks are to:

1. develop base-line fisheries data.
2. assess fishing methods and introduce new gear and fishing techniques.
3. upgrade handling/storing of fish and explore alternative processing methods.
4. help strengthen the ACPM as a viable, independent and responsive enterprise.
5. improve the marketing of marine products through education, promotion and expanded retail outlets.
6. establish a revolving credit fund to help supply fishermen's materials requirements.
7. assess training needs within the fisheries industry and help establish programs designed to meet those needs.
8. provide direction in the development of new programs, i.e. boat repair and building, exploratory fishing and oyster culturing.

Significant progress has been made in the areas of institutional development, operations and marketing. Most commodities required through the project in Phase I have been procured. The Project can be divided into four major categories and the status of each will be briefly reviewed. These categories have been divided as follows: production, infrastructure, management and finance.

Production: Production has increased dramatically since 1979, growing nearly two-fold in the last three years. This increase is due to improved marketing practices, additional fishing boats and the high and prompt prices paid to fishermen for their entire catch.

Limitations can be attributed to certain production weaknesses, such as the improper use and type of certain fishing equipment, lack of access to some fishing grounds and portable storage units, and lack of market retail outlets.

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Significant improvements in storage, control of theft and greater care of fishermen have all helped to keep losses to reasonable levels since June 1982. These advances, coupled with good business practices and equipment can be directly linked with the USAID Fisheries Development Project. For further details on Project status see the USAID Evaluation (December 1981), Project Paper Amendment (July 1982) and the contractor RDA Report (August 1982).

Some base-line data has been collected, mainly on ACPM purchases and sales, but stock figures give little indication of sustainable yields nor do they provide much background for looking at fishermen's socio-economic status. Spoilage/wastage has been minimized. It is not known how much fish spoils before it is brought to the ACPM.

The major weakness in the area of production for the Project has been the lack of training for fishermen and the lack of testing of fishing techniques and equipment. This has been caused by a shortage of personnel and expertise from the contractor and by shortages of funds.

Infrastructure: Facility improvements to be funded through the Project have been carried out adequately. The ACPM Revolving Credit Fund (purchase and sale of fishing equipment to fishermen on credit) has operated quite well to date and continues to provide valuable assistance to the fishermen. Boats, nets, engine and other equipment have been sold, helping to upgrade the artisanal fleet. The Project has, in part, depended on the assistance of other donors to help provide facilities seen as essential for the development of the fisheries sector. The retail outlets, storage areas and repair shop were seen as necessary facilities. These have been provided, although there have been long delays in initiation of operations.

The Phase I Amendment provides for an exploratory fishing vessel and equipment. Procurement should take place during 1983 and its use will facilitate the expansion of knowledge and ability to achieve Project goals. Eight retail outlets have now been built and are operational. The GROD is committed to the construction of facilities at Obock and it is possible that the ice-making and storage plant will be completed in 1984. With these acquisitions, the basic infrastructure required for full operations will be in place.

Management: Through the Project, the ACPM and Department of Fisheries have been provided with management assistance. With the Amendment enactment, additional personnel were funded (Financial Management Advisor, Accounts Clerk, and Deputy Director). The current Management Advisor has had daily duties of wholesale marketing, cash control and reconciliation, personnel management, and overall supervision of operations in the frequent absence of the ACPM Director.

Djiboutian management remains a major problem area. The current Director has not been performing his duties. There is little apparent Djiboutian leadership in the storage area or in boat repairs. Indigenous management capabilities have been totally inadequate in helping to foster this local capacity. Overall poor training and lack of appropriate, trainable personnel have been major weaknesses in the Project.

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Finance: It is unclear as to whether the ACPM is becoming a financially viable institution. The cash position (over D.F. 9 million or $51,500 in liquid assets) is strong and the Cooperative has no debts of any magnitude, yet it remains heavily supported by the GROD. Incomplete records and unperformed analyses cause doubts about many operations. The lack of complete financial statements, no budget and cost structuring are weaknesses which the Project and staff at the ACPM have not yet been able to overcome.

Efforts at rectification are in process. Additional personnel and a draft set of accounts are now available. Further progress should be apparent in the near term. With proper financial data, management will be able to make better decisions, based on demonstrable facts and figures.

Overall, current major weaknesses of the Project can be identified as the lack of a proper financial/control system, inadequate training program for personnel at all levels (production, management, marketing) in both the ACPM and Department of Fisheries, a lack of systems design and implementation in management, processing and administration, and only nominal exploration of fishing areas, methods and equipment. These weaknesses are only partially addressed through the Phase I Amendment. Major strengths have been the provision of commodities for the revolving credit fund, boat repairs and fishing gear, management assistance which has been fundamental to ACPM progress and success to date, improved production, and the increase in fishermen income.

C. PROBLEM IDENTIFICATION

The examination of the problems and needs of the fisheries industry has been categorized by functional area: (1) Production, (2) Processing, (3) Marketing, and (4) Administration. In summary form, the following points have been identified.

1. Production. Demand for seafood products has been steadily increasing in Djibouti. Peak production purchased by the ACPM was over 34 tons of fish in November 1982. This was quickly absorbed and requests for additional product have been constant. Yet fishermen have not increased their output. They (with about 50 boats) have been averaging four landings per month with a yield of 112 kilos per landing. The reasons for this low production have been identified as lack of knowledge on fish habits/locale, logistics difficulties, shortages of fishing units and fishermen, use of less effective and efficient gear and equipment, and perhaps a certain lack of motivation on the part of fishermen.

The lack of knowledge on fish habits and locale is not an indication that the Djiboutian fishermen are not professional. They are experienced artisans who know the seasons and fishing grounds of Djibouti. Yet within specific areas, through a lack of scientific investigation, the best time of day, the depth and the patterns of the fish are not known. The fishermen, with their small craft engines and limited storage capacity, have had significant problems in remaining in productive areas for long periods without returning to home base. Storage, ice, food and weather problems have limited range and capacity.

There are shortages of expert fishermen, as well as the desired number of boats and engines. The more traditional equipment and gear used (hand lines, small gill nets) is not the most cost effective or efficient that the fishermen could be using. A lack of motivation in some fishermen is demonstrated by the small number of landings made.

2. Processing. Processing (or changing the state of the fish in some fashion) is done by fishermen, the ACPM (Association Cooperative de Pecheurs Maritimes or Marine Fishermen's Cooperation Association), and to a limited extent by the neighborhood retail traders. Processing is done for the customer's convenience and to preserve the quality of the product.

Fishermen do not handle the fish properly. It is not bled, gutted and washed at the time of catching. It is not immediately iced and is roughly handled. AT the ACPM the fish is also handled too much, is over-exposed during cutting, cutting is done inefficiently, and fish are not stored in the best manner. The processing system has difficulty absorbing rapid production increases. The retailers do not keep fish consistently clean and chilled. These weaknesses have led to spoilage losses, weight losses and a decline in the quality of the products.

3. Marketing. Demand has been consistently higher than supply of seafood products in Djibouti. The FAO survey showed an urban desire to eat fish in over 90% of the households. Yet fish has not reached many of these potential clients as there has been no good distribution system nor points of sale. Fluctuating supplies, lack of product differentiation and a poor price structure have been weaknesses in the marketing system. The main constraints also include a lack of information about available products, statistical information about clients and potential clients. Demand has been allowed to grow and now product needs to be supplied to the market place.

4. Administration. Administration and management of the fisheries industry should be provided by the SEP (Service de Elevage et Peche-Livestock and Fisheries Department, Ministry of Agriculture) and the ACPM. The SEP has not been able to formulate national policies and a program of development. Development efforts have been made on an ad hoc basis. The ACPM is an integral part of any national program, yet it also has major managerial weaknesses. Control systems on various operations have not yet been established, there is little ability to do analyses and local leadership has been poor.

D. PROJECT COMPONENTS

In order to assist in the fulfillment of some of these requirements and solve some of the problems identified, the Fisheries Development Phase II Project (603-0015) has been designed. The basic goals of the Project remain focused at the utilization of local marine resources in a manner which is conducive to a stable resource base, but have been more precisely defined as: the increase in fishermen incomes, increase in the ACPM ability to process seafood and serve its owners and clients, assistance to marketing efforts which will reach the entire Djiboutian populace, and the improvement of the Government of Djibouti's (GROD) ability to support the fisheries industry as a whole.

The strategy for achievement will include the utilization of extensive technical assistance, provision of certain commodities and major training/demonstration activities. The strategy requires a minimal three year time period and a high level of expatriate expertise. The strategy depends on active support and collaboration from the GNOD, International Fund for Agriculture Development (IFAD), Fonds des Assistance et Cooperation (FAC), Catholic Relief Services, UNICEF and possible others.

The costs of carrying out such a program are summarized as follows:

USAID PHASE II

| CATEGORY | TOTAL |
|---|---|
| Assistance to SEP | $ 802,000 |
| Assistance to ACPM | 1,266,000 |
| Support and Training | 318,000 |
| Commodities | 160,000 |
| Others | 92,000 |
| Contingency | 132,000 |
| Inflation | 228,000 |
| Life of Project Costs | $2,998,000 |

SEP PARTICIPATION

| | |
|---|---|
| Production | $ 550,000 |
| Processing | 425,000 |
| Boat Construction and Equipment | 95,000 |
| Administration | 36,000 |
| Research | 226,000 |
| Contingency | 68,000 |
| Total Inputs | $1,400,000 |

IFAD PARTICIPATION

| | |
|---|---|
| Production | $ 553,000 |
| Processing | 50,000 |
| Boat Construction and Equipment | 830,000 |
| Marketing | 102,000 |
| Contingency | 75,000 |
| Total Inputs | $1,600,000 |

CRS - UNICEF

| | |
|---|---|
| Food and Nutrition Project Total | $ 225,000 |

FAC PARTICIPATION

| | |
|---|---|
| Processing Total | $ 350,000 |

The components of assistance under Phase II have been grouped under the following headings: Production, Processing, Marketing and Administration. Subheadings under each component are: Tasks and Requirements, Technical Assistance, Training, Other Support and Results. These same headings will be used for the main text.

1. Production.

a. Tasks and Requirements - A program is required which trains and educates fishermen, expands local knowledge of resources, which provides and uses the most suitable year and equipment, which helps with some logistic problems, which improves motivation and expands the artisanal fleet. Such a program will be formulated and carried out, both through Phase II and other assistance.

b. Technical Assistance - Two full-time experts, for a total of five years, two months, and short-term consultants in specialized areas will be required for program formulation and implementation. The full-time experts will be specialized in fisheries biology and in small craft fishing. The fisheries biologist will be responsible for the research/exploratory fishing effort. The master fisherman/extension trainer will be responsible for testing gear and equipment and overall fishermen training.

The research activities will be designed to provide estimates of stocks of sea animals for those species which now form the basis of the bluk of production, their seasonality, locale and habits. Basic design and implementation will be carried out throughout the Life of the Project.

c. Training - The master fisherman/extension trainer will be responsible for increasing experienced fishermen's knowledge of the fish, the tools most appropriate to use for their capture, and the methods which are most effective. This education process, extended over the full Life of the Project, will be done through demonstrations at sea and perhaps some demonstrations on shore. Some 40 experienced fishermen are expected to participate.

Training of crew members and new participants will also take place. More formal education structures will be used, covering such topics as boat handling, navigation, safety, boat/engine repair and maintenance, basic fish biology, weather and currents, fishing methods and gear, handling of fish and conservation. Some 60 individuals are expected to participate in the training programs.

d. Other Support - A limited amount of funding under Phase II is included to purchase fishing equipment and gear for testing, as well as laboratory equipment.

Purchase of new gear and equipment for resale to fishermen should be done by the ACPM (through the revolving fund), but also IFAD will probably donate fifteen boats and diesel engines to the revolving fund.

Repairs and maintenance of boats and engines will be supervised by IFAD at the ACPM. The expansion of ice-making, storage and fueling facilities, in the construction of a plant at Obock, is essential to alleviate logistics problems, to improve profitability and to help motivate fishermen. The construction is now proceeding, sponsored by SEP and assisted by USAID and IFAD. Additional construction of port/docking facilities in Djibouti may be required and sponsorship will be needed to fund such work.

e. Results - The results of the activities under Phase II and with support from other donors include a better understanding of fish/marine resources, a transfer of technology, an improved production and improved profitability for an expanded number of fishermen.

The fishing fleet should increase by 45 members, their catch per labor unit increase by 58% and their income increase by over 150% for boat captains/owners and over 80% for crewmen. Overall production brought to the ACPM should double by the end of Phase II.

2. Processing

a. Tasks and Requirements - A preliminary survey showed that existing and planned plant expansion will meet new processing requirements, if used properly and if some alterations are made. The processing system must be modified to adjust to changing needs and to lessen losses due to drops in quality, weights, and to pilferage and spoilage.

Certain handling, storage, processing procedures (changing the form of the product in some way), and freezing of fish have to be altered.

b. Technical Assistance - The redesign of the processing workflow and modification plans of facilities will be done by a short-term consultant. The FAC technical assistance person, along with the Management Advisor (listed under TA for Administration), will have to carry out the implementation.

c. Training - Training will be of an on-the-job nature. Monitoring of practices must be done constantly and difficulties rectified promptly.

d. Other Support - Plant improvements are budgeted as part of Phase II support to the ACPM. These include the furbishment of a retail outlet, alterations to the wholesale processing area and some improvements in office areas.

Support may also come from IFAD with funding. FAC will continue to supply technical assistance from one full-time person.

e. Results - The expected results are that losses due to weight, pilferage and spoilage should decline from 7% (initial) to roughly 2% by the end of year three. This calculation is based on losses beyond "normal" limits. The savings to the ACPM will reach over $90,000 in additional product sold per annum.

3. Marketing

a. Tasks and Requirements - The formulation and implementation of a coordinated marketing plan is required. The plan will contain these components: supply needs, demand analyses, product analyses, pricing policies, physical distribution and product promotion. The plan/program must be flexible, i.e. to expand when required, to market double current production, to differentiate products and prices, to expand wholesale clientele, and to help maintain fish quality.

b. Technical Assistance - Phase II assistance includes a marketing manager. This expert will initially work in a staff position at the ACPM and will have the responsibility of designing and implementing the marketing program, as well as training local counterparts. The assignment will be for two years, full-time, with two one-month short-term assignments in the last year.

c. Training - Training consists of on-the-job education for counterparts and some form of training for retail fish sellers.

d. Other Support - One vehicle and office facilities will be provided for this effort under Phase II funding. IFAD will fund the construction of seven additional urban retail outlets, as well as replacement trucks for the distribution of product.

USAID will fund some promotional activities, but the bulk of promotional efforts will be made by CRS-UNICEF through the Food and Nutrition Program. The CRS program is expected to continue throughout the Phase II period.

e. Results - The results will include additional employment and income, expansion of the availability of seafood to Djiboutians, support to the national economy (lessen import requirements), and help in improvement of local nutrition.

4. Administration

a. Tasks and Requirements - An overall national program for the stable development of the fisheries industry is needed. The program must serve the needs of the fishermen, fish processors, vendors and ultimately the consumer.

Also the ACPM, in order to support the national program, must be a strong, viable organization that provides the GROD with needed information for national policy formulation.,

b. Technical Assistance - Phase II will provide a marine economist/management expert to work with the SEP in the design and performance of a national fisheries program. The person will work full-time for the Project period and will be assisted by short-term consultants if required. The person will serve as Phase II Project Team Leader, and will be responsible for overseeing liaison with others donors and all Phase II training activities.

At the ACPM, Phase II assistance includes the provision of a management/finance advisor to serve as counterpart to the ACPM manager. The person will be responsible for design and carrying out of various control systems (inventory, accounts, revolving fund), as well as provide training in management and analysis. This person will serve full-time for the Life of the Project.

c. Training - Training will be in-house, both on-the-job and more formal in nature and will be given by the two technical assistance persons to management counterparts and appropriate subordinates.

d. Other Support - Phase II funding will provide office furniture and equipment, as well as office construction if required.

Support and participation in the design and implementation of the national fisheries program will be provided by the ACPM, by FAC Staff, by IFAD staff and by people working in the fisheries industry.

e. Results - The GROD will have a set of national objectives for the improvement and stability of the fisheries industry, a program for working towards those objectives, and a staff capable of performing the required tasks.

The ACPM will have a set of control systems which will enable management to make appropriate decisions, improve efficiency and increase profitability.

Overall statistical results of the Phase II Project activities include the following:

-Overall benefit/cost ration of 1.11 at a 10% discount rate.
-An internal rate of return, overall, of 21%.
-Capitain/boat owners income increasing 178% to $4,640 per annum, a B/C ratio increasing from 1.25 to 1.55.
-ACPM net profit increasing from $124,600 to $358,000, a B/C ratio increasing from 1.09 to 1.44.
Retail outlet operators, from nil income in the base year (no fish sales) to an income of $15,900 per annum and a B/C ratio of 1.30.

## II. PHASE II RATIONALE AND DESCRIPTION

### A. PROBLEM IDENTIFICATION AND NEEDS ASSESSMENT

Many different approaches can be used to provide an overview of the fisheries industry in Djibouti. For the purposes of this project proposal, the industry will be viewed from the perspective of those people actively involved as workers within fisheries. The categories used to clarify various work functions are: (1) Production, (2) Processing, (3) Marketing and (4) Administration. This section will examine the problems and needs of the entire industry and can serve as a guide for areas where efforts should be made for improvement - by the worker participants, the GROD and by the donor community.

#### 1. Production

The catching of seafood products in Djibouti, as shown by the statistics compiled at the ACPM, fluctuated widely but maintained an average in excess of twenty tons per month (see Production Statistics, Annex H). This was achieved by the fishermen using an average of 50 boats, each making four landings per month with 100 kilos per landing. The exact figures are 112 kilos per landing, 4.09 landings, 24.9 tons (average in 1982) and 54 boats.

Neither this production level nor the product mix has been sufficient to meet growing demands for seafood products in Djibouti. The reasons for the low production have been identified as lack of knowledge on fish habits/locale, logistic problems, shortage of fishing units and fishermen, use of less efficient and effective equipment and gear, and, perhaps, a lack of motivation on the part of fishermen.

The lack of knowledge on fish habits and locale is not an indication of a weakness in the local experience fishermen. There is considerable local knowledge on the best fishing areas and seasons for that fishing. Yet within a specific area, the timing, the depth, and the exact season are often matters of considerable conjecture on the part of fishermen. The gear required and information needed to answer these important questions are not presently available.

Logistic problems are severe for fishermen who use fishing grounds far removed from Djibouti City (Djibouti hereafter). Petrol costs, means of preserving fish, transport time, fishermen's food and drink and social pressures all can be constraints upon the fishing effort. These problems, to some degree, will always be major when the fishing fleet is artisanal and small-scale. The cost to run small engines per catch unit is enormous. The need to carry ice and lack of refrigeration equipment limits range and the length of time fishermen can stay out.

The shortage of fishing units and numbers of fishermen is a constraint on production as well. Given current technology as a static element, increase in units and personnel are perhaps the most obvious means of expanding production. Limitations are both financial and in finding qualified personnel to operate additional craft. Investigations have shown that the number of boats that could serve as productive units is higher than thought previously. This is also true of the number of fishermen. Although the number of "expert" fishermen is finite, there are larger numbers of fishermen who have served and are serving as crew members, but for various reasons do

not have their own boats. Some of these people, with a small amount of training, could qualify as expert fishermen and help expand the current fleet, providing they have the proper equipment. The number of fishing craft has been the subject of numerous estimates. Physical counts show useable craft to be roughly one hundred, although a portion of that number (perhaps one-half) are very small and/or in a poor condition.

Fishermen currently use houris and fiberglass dories, with small two-stroke outboard engines as their major equipment. They use single hook, hand-held lines and small gillnets as their principal gear. Squid fishermen use bait and gafs only and lobster fishermen use facemasks and their hands as their sole aids. This equipment and gear is not the most cost effective or efficient that the Djiboutian fishermen could be using. The yields of less than 120 kgs. per landing could easily be exceeded with the proper use of simple mechanical gear and improved equipment.

The few number of landings made by some fishermen and their underutilization of equipment has led observers to view these fishermen as lacking in motivation. It is a fact that the fishermen who exceed the average landing catch and who earn higher incomes are those who fish more frequently. This group of more active fishermen, consisting of about fifteen production units (captain and crew with houri), who fish some ten times per month, is juxtaposed with a group of roughly fifty other units who may fish as infrequently as once per week. The latter groups seem to operate on a margin of profit which is very near the bare subsistence level. Yet they may also sell large portions of their catch outside the ACPM, thus lowering their apparent number of landings. Also the same equipment may be used by different fishermen, lowering total yield per crew.

These constitute the major reasons for low productivity by Djiboutian fishermen. Lack of skill is not a reason, but equipment, gear, distance and basic information have contributed to a low performance and an inability at present to meet market demands for seafood products.

2. Processing

Processing in Djibouti of seafood products is done by the fishermen, by the Marine Fishermen's Cooperative Association (ACPM) and, to a lesser extent, by neighborhood retailers. There are many weaknesses in the current system, most of which are involved in the management of fish handling, rather than with the facilities available.

Fish is at its highest quality when first brought from the water. Such treatment involves cleaning the fish and lowering its temperature. Fish should be bled, gutted and washed immediately by the fishermen. This is not done and it may be hours before it takes place.

Fish should be handled and moved as little as possible. Movement warms, bruises, and can contaminate fish. Fish are handled many times before they are stored. Once fish is stored, it should be preserved in an efficient manner. There are weaknesses in the manner in which this is done.

When fish is to be processed, that is changed from its state in some fashion, the method used should be the cleanest, fastest and most cost effective possible. There are weaknesses in the manner that is done, which lead to spoilage, meat loss and lost sales. Fish are often exposed (without

refrigeration) for long periods at the ACPM. When they are either cut in chunks, trimmed or filleted, they are not properly washed, covered or quickly cooled. Time is lost because inappropriate tools are used for cutting and the processing areas are not designed for maximum efficiency. Fresh fish meat can also be lost because of poor workmanship and use of inappropriate tools.

After the fish is cut, it should be efficiently stored to allow for quality perservation, easy access and enhanced sales. The system does not utilize available space well, also freezer burn and weight loss occur. These problems can be avoided, with a better use of current facilities, staff training, and some plant alterations.

Because of the lack of preparation beforehand, and also in part because of customer preference, fish are processed for customers at the time of retail purchase. Noise, uncleanliness and confusion mark the handling of fish for the retail customers (and to a certain extent the wholesale clients as well).

Currently the cutting of fish is done in one area (two counters) for both wholesale and retain operations. At peak loads there are not enough people nor enough space to cut fish quickly and properly. No fish is packaged and there is little separation between clients and staff.

The staff do not have adequate facilities for washing, showering or relieving themselves. There is not facility at all for customers. To date there are only three faucets (water outlets) available for use and drainage is very poor at the ACPM.

At the retail outlets, processing consists of cutting whole fish into chunks and perhaps filleting. Before and after, quality preservation is not well maintained. Chilling is sometimes not maintained and the fish is often uncovered. Cleanliness is not prevalent, as meat is exposed to dust, insects, and excessive handling.

The ACPM has not been able to cope with rapid production increases. With the end of the kham-sim period (unfavorable fishing conditions) in August 1983, sudden increases to historical average levels (one ton per day) overburdened the processing system (as well as the marketing system) and created a chaotic situation where fish were not fully processed, where fishermen were discouraged temporarily from supplying more fish, and where numerous processing bottlenecks appeared.

The lack of ability to adjust to changes in production levels is a clear indication of the immaturity of the ACPM processing system. Storage was being done improperly, insufficent amounts of ice were being provided, fish were not being processed in a timely fashion (cleaned, filleted, cut, frozen, etc). A proper work flow based on a set of alterred priorities (quality preservation of all fish arriving) was not present and adaptability to the changed circumstances was very slow by all staff.

Fluctuations in supply are endemic to any fish processing facility. Improperly used facilities, disorganization and wasted effort have all been exhibited at the ACPM and have provided clear indication of the need for improvement.

3. Marketing

Fish and other seafood products are sold wholesale only by the ACPM. Retail sales direct to customers are sold at three supermarkets for expatriate clients; the Central Market, eight new small neighborhood outlets, and at the ACPM itself. The eight new shops (all opened in July-September 1983) are scattered in various sections of Djibouti and fish for resale at these outlets is bought from the ACPM. Current market volumes nationwide are estimated at roughly 600 metric tons for the next year. Of this amount, the ACPM will market 400 tons (67%). Two hundred tons are consumed by fishermen, lost in spoilage or are sold through channels other than the ACPM.

Of the products sold by the ACPM, about 70% are sold wholesale and 30% retail. Local demand has consistently exceeded supply. The industry has been hampered by a lack of points of sale for customers, by lack of sufficient supplies, by certain fluctuations in supplies, by a lack of information about available products, and an inefficient distribution system. Additional weaknesses in the marketing system have been the lack of statistical information (about clients and potential clients), detailed information about the various products, and no determination on the pricing policy to be used.

Even with the poorly organized marketing system at the ACPM and the Central Market, the ACPM has been required to sell all its products without being able to create a reasonable stock or inventory. Inventories are generally less than five tons, of both frozen and fresh fish. A desirable level is equal to two days turnover of fresh fish and fifteen days turnover of frozen fish minimum. Sales levels historically have been over twenty-four tons per month. An appropriate stock level, just to maintain that sales level, should be about sixteen tons. Historical stock averages have been less than eight tons of fish. This indicates a high demand and a weakened ability of the ACPM to make long-range commitments of any sort.

The production by fishermen must follow demand. The ACPM and GROD have not encouraged demand to rise as high as possible, since supply has been lagging. Demand has been steadily increasing however, as shown by early successes at the new retail outlets and the ease by which the ACPM has been able to increase its wholesale customer portfolio when fish has been available. Continually, potential institutional clients have been told that the ACPM cannot supply them with fish on a regular basis. ACPM has had growing pains and a balance must be maintained between demand and supply. Demand should not be encouraged or expanded when there are inadequate supplies available. Demand has now been allowed to grow and a marketing system must be established which will meet the needs of the expanding clientale.

4. Administration

The GROD, through the SEP, is attempting to support and guide the fisheries industry in Djibouti. To do this, the SEP has provided funding and personnel to the ACPM. The SEP, through donor assistance, has provided the ACPM with facilities and administrative support, as well as the construction of various new retail outlets. Support has been given directly to the fishermen (also through the ACPM) with certain gear and commodities and with a commitment to provide ice, storage, dockage and repair facilities at

Obock. All this has been done in the relatively short period since independence in 1977.

Yet the SEP has not been able to formulate national policies for the future of the industry. The formulation of development programs have been done on an ad hoc basis by various donors and planning has been highly haphazard. The SEP has consistently demonstrated a willingness to develop the fisheries industries, but has not had sufficient staff or skills to do so.

On the basis of policies (which have yet to be established), the SEP must derive a program which works towards an industry that can meet national needs, that maintains its resources in a stable productive mode and that utilizes the resources for the benefit of its citizens. Such a program has not yet been planned.

The elements of such a program should include a clear determination of what national needs are (demand requirements), how these needs can be met in the manner most effective for Djibouti, a monitoring of the resources available for exploitation, an exploration of all income generating possibilities (new products, packaging, exports, substitutes, etc...), and an examination of what inputs are required to carry out such an effort (staff, training, funding). Currently the SEP and GROD are not capable of designing, planning or carrying out such a program.

As the ACPM will be an integral part of any such program or system, the operation of the Cooperative is also vital to the design and implementation of a national plan. Yet the ACPM also has major managerial weaknesses at present. Control systems are not yet established: in accounts, processing, storage, marketing, and the revolving fund. Staff have not been provided with the skills required to manage all operations properly. The ability to analyze has not been systematized (in such areas as cost analyses, pricing formulation, data analysis, marketing). Until the ACPM management has sufficient staff, training and implementation of such systems, the Cooperative and SEP will not be able to fully support the fisheries industry.

B. PROJECT RATIONALE - GOAL, PURPOSE, STRATEGY

The basic goals of Phase II of the Fisheries Development Project remain focused on the utilization of local marine resources to the extent which is conducive to a stable resource base. Through the introduction of further data and knowledge, immediate goals have been further defined and delineated. They are: to increase fishermen income, to increase the ACPM ability to process seafood products and to serve its owners and clients, to assist marketing efforts which reach the entire Djiboutian populace and to improve the Government of the Republic of Djibouti's ability to support the fisheries industry as a whole.

The purposes of Phase II are directed at the Fisheries Department, the ACPM and the industry as a whole. They are seen as:

1. Fishermen's income increases will attract additional participants, lessen labor unit per catch, and improve the quality of fishing families' lives.

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2. The purpose of improving the ACPM is to expand the utilization of limited resources, to increase benefits provided to members, and to better serve the public (buying seafood products) through nutritional improvement at a cheaper price.

3. The purpose of assisting marketing efforts is to increase the consumption and number of people reached by the industry, as well as to promote local private retail trade.

4. The purpose of Fisheries Department improvement is to strengthen the fisheries industry as a whole, creating a program which promotes growth and individual initiative.

One major purpose previously delineated was the creation of an independent, financially sound cooperative institution. This is still a long-range goal, but it will not be fully achieved during the project period. The ACPM will necessarily be dependent on GROD subventions and staffing assistance for some time, although the ultimate objective will be an institution which owns all its own facilities and is capable of financing all its own operations without assistance from the Government or dependency on donors.

The strategy for achieving the Project's purposes will include the utilization of extensive technical assistance, provision of certain commodities, and major training and demonstration components. The strategy will be extended over a three year period and the level of expatriate expertise will be of a much higher caliber than that provided during Phase I. Practical experience during Phase I, the performance of a major socio-economic survey by FAO for USAID, and the wealth of resources used in the preparation of this document have all assisted in enhancing knowledge of the requirements for success in Phase II.

Efforts in Phase I were directed towards the ACPM almost exclusively, with little prior knowledge of the fisheries industry. Significant changes have occurred since the initiation of assistance from AID and the new requirements will be incorporated into Phase II.

Perhaps it would be useful to restate that the Phase II Project is being funded through Economic Support Funds (ESF) and follows the CDSS update strategy to promote the private sector, to influence policy as appropriate, and to address management constraints in areas vital to the country's development.

Project strategy acknowledges that Phase II assistance cannot meet all the needs of the fisheries industry in Djibouti and full development of the sector also depends on support from the GROD and donors such as IFAD, FAC and possibly others. Also it is realized that full development cannot be achieved in this decade or until Djibouti reaches full national maturity and reduced dependance on external technical assistance and management. This is not likely to occur in the near term and the situation must be recognized to maintain a realistic outlook. However, it is anticipated that as further experience is gained during the course of project implementation a number of significant elements to increase project efficacity and to strengthen the artisinal fishing industry will be identified. This conceivably would lead to project modifications and/or ancillary activities.

For example, the French have already begun to look into the feasibility and benefits to be derived from the construction of a fisheries wharf and have indicated a possible interest in participating in the construction of same. This would offer additional opportunity for USAID to engage in multi-donor collaboration in the fisheries sector.

C. PROJECT DESCRIPTION

Project components of Phase II are identified and grouped under the headings of Production, Processing, Marketing and Administration. Under each of these components are the elements of (a) Tasks and Requirements, (b) Technical Assistance, (c) Training, (d) Other Support, and (e) Results. The problems and needs in each of the components have been discussed previously and will be outlined in the context of how they will be addressed.

1. Production

Production has been, and under present conditions would continue to be, insufficient to meet growing demand for seafood products in Djibouti. The level of production per unit of effort has not been great enough to provide a reasonable financial return to the fishermen. Lack of knowledge on fish habits/locale, logistic problems, shortage of equipment, gear and fishermen, use of less efficient gear and equipment, and a lack of motivation have all contributed to low levels of production.

There are numerous alternatives available for increasing production, but much fewer effective approaches can be used when the purpose is to increase the well-being of fishermen (artisanal) and to attract additional participants to fishing. This requires that the approach incorporate current skill levels, current and similar equipment and gear, as well as remain labor intensive. Present fishing methods and equipment/gear (equipment consists of the vessel and motor used, whereas gear includes all instruments used in catching fish) preclude major increases in production without simply adding additional fishing units or increasing the number of times they are used. In the past, through the ACPM and donors' assistance, additional units have been added to the artisanal fleet and production increases have been noted. Recent boat and motor acquisitions have been used for replacement of old equipment and have also expanded slightly the fleet size. Yet until additional "expert" fishermen are available to operate this equipment, greatly increased production cannot be achieved by adding equipment alone.

A. Tasks and Requirements - In order to increase fishing production in Djibouti, given the finite number of boats and experienced fishermen, it will be necessary to institute a program which helps further educate fishermen, which expands the fund of knowledge on local resources, which provides and uses the most effective equipment and gear, which helps alleviate some logistic problems and which improves the motivation of fishermen.

Phase II assistance will formulate such a program, and implementation will be carried out by AID-funded assistance, the ACPM, GROD, other donor organizations, and the fishermen themselves. Phase II production assistance will have two major foci: basic resource exploration and fishermen training/demonstrations. Other donor participation will focus on equipment procurement, repairs and maintenance, assistance with logistic problems, and additional research activities.

The formulation of a detailed program cannot be undertaken until full-time personnel are in place and actively involved in the production expansion effort. Yet the basic conceptual approaches are understood and will be explained.

B. Technical Assistance - To formulate a production program incorporating training, research activities and gear/equipment testing, the Project will require the participation of two full-time experts and assistance from short-term consultants in specialized areas. Full-time participation will be required from a master fisherman/extension trainer and from a fisheries biologist research. Short-term consultancies will be required in assistance with specialized production investigations. Further details can be found in Annex D, Technical Assistance Scopes of Work.

A major assistance effort will be made to explore and examine the local marine resources. The following sections outline the type of program that will have to be carried out by the fisheries biologist and SEP.

Research and Exploration. Although many estimates of the available marine resources have been made, these lack precision. Most of the studies suggest a resource base of 3000-5000 tons of traditional species and an equivalent amount of species not now regularly exploited, such as small "pelagics" (sardines, scad) and large "pelagics" (billfish, tuna and sharks).

There is concern that uncontrolled exploitation of these resources could lead to partial decimation of certain stocks, with harmful potential effects on Djibouti's ability to maintain harvest levels on a renewable basis.

The primary purpose of the resource research portion of the Project will be to strengthen the existing estimates of standing stocks for those species which now form the basis of the fishery. Using sound survey techniques, the research effort will develop a projection for allowable yields to the fishery. As it may be appropriate, a start should be made on estimating the abundance of stocks now peripheral to the existing fisheries in addition to the species now exploited. Along with the pelagics mentioned, these include spiny lobster, crab, squid (and cuttlefish), Holothurians (sea cucumber), shrimp and other species with local or possible export importance.

There is much literature on the hydrography (physical conditions) of the Gulf of Aden area and of the adjacent Indian Ocean. The thermocline depths, salinities and monsoon systems probably dictate the cyclic availability of marine life to Djibouti fishermen. These factors must be programmed into resource analysis and, to the extent that it is practical, other factors relating to variations in these physical systems must be identified and incorporated in the analysis.

Finally, but perhaps most importantly, Djibouti does not enjoy the luxury of a pool of trained scientists and technicians. All possible efforts will be made to involve counterparts staff in the collection and summarization of data.

Assuming that the two AID-sponsored vessels (Yamaha boat and "Forty-Footer") are in place and operative at the start up of Phase II, a program addressing systematic resource evaluation and demonstration fishing will be instituted. The operations of the vessel will address two specific objectives: resource definition and training, and fishing gear demonstration and training.

A major objective of the Phase II Project will be to summarize and supplement the data base relative to traditional landings at Djibouti. There are some historical data to draw from. These must be evaluated in the context of ultimately developing standing stock information, as well as anticipated yields from the fishery. It would be most appropriate to limit the data studies to upgrading and refinement of the existing data base on traditionally landed species with a secondary objective of extending the coverage to other species of potential development interest as suitable observations become available.

Program planning should incorporate the interrelationship and coordination of the IFAD-SEP VESSEL which is expected to concentrate activities to seining and light attr action studies, as well as some trawling and gillnetting. It is of utmost importance that there be an open and continuing exchange between the AID-sponsored activities with those supported through IFAD contributions. A possible consideration for interrelated observations could, for example, include summarization fo acoustic data gathered by the IFAD vessel and the AID vessel. Similarly basic hydrographic data can be collected by both vessels, shared and exchanged.

The "GRID" analysis system for fish stocks developed by RDA (contractors during Phase I) is adaptable to long-term evaluation of fisheries resources in the area. The contractor must design a sampling system which reduces or eliminates bias. It is suggested here that AID activities relate to expansion and greater use of traditional fish i.e. Dorade, Kingfish, Snappers, small Tunas and Carangids. Some effort should also be programmed towards utilization of Shark and possible increase in fishing for Mullet (Mugil). Exploratory fishing efforts with more efficient gear should be designed to place primary emphasis beyond existing known grounds particularly in deeper water during the October - April period when hand lines become less effective (due to lowering of the thermocline). Exploratory fishing can be interrupted at regular intervals for "demonstration" efforts which will assist in movtivating fishermen to expand their productive capability. It is hoped that the sampling methodology used in Phase II will represent a refinement of the experience through Phase I.

During the May - October period some production fishing with reels can be coordinated with regular commercial effort. This may also be an appropriate time to become involved in improved capture techniques for pelagics through the use of multiple line trolling systems, fish attracting devices and longlines.

Due to the limited time and equipment available, resource evaluation surveys must be carefully planned and a comparatively rigorous schedule maintained. A division of responsibility must be established and coordinated between the AID project and other donor efforts (i.e. IFAD, FAO). The priority and sequence of the vessel use in pursuing these objectives will be the responsibility of the "SEP advisor" or program manager with the support, advice and concurrence of the SEP and related to parallel activities of other donors i.e. IFAD/FAO and others.

Due to the broad multi-disciplinary orientation of the program there are limits to the detail and thoroughness which the resource evaluation work can accomplish. The program will emphasize gaining information which extends knowledge of the distribution of marine resources available. It will not be practical to perform detailed analyses of all biological materials relevant to age and growth studies. Similarly detailed studies on hydrography (physical conditions of the environment) may not be practical. As it can be accommodated, some baseline hydrographic observations should be made. As a minimum, temperature of the water column, thermocline depth and salinity should be recorded on a regular basis. Several standard hydrographic transects should be programmed along with the fishery survey activities.

Integrated into research efforts will be a component stressing training for counterpart personnel, who will be provided by the Djiboutian Government. Throughout the research effort a ration of vessel time should be assigned to "demonstration" or production fishing. The fish production from these demonstration events can be coordinated into marketing extension activities.

The resources of fish and other marine animals in the waters adjacent to Djibouti vary in distribution and abundance throughout the year in response to prevailing wind conditions. The year can be divided into the following periods:

| | |
|---|---|
| a. November - February | Northeast wind |
| b. May - September | Southwest wind |
| c. July - August | Khamsin (Northerly) wind |
| d. March, April + October | Transition (Variable) |

Following an evaluation of RDA experience and projections, as well as other related information, including discussions with fishermen, and ministry officials, and a careful review of landings data, a plan will be outlined. The following criteria will be applied.

Sampling methods will be limited to operations which have the potential to be adapted to existing craft. With only minor modification, these techniques will consist of troll fishing, trap fishing, longline fishing and hand-operated reel for active fishing.

Troll Fishing - Given the season (a, b, c, d above), a sampling orientation will be assigned a priority. For example, May - June represents a productive period for Kingfish (Scomberomorus commersoni). A possible strategy would be to use multiple troll lines (6 - 8) using a "standard" variety of lures and/or bait. Trolling would be conducted over regular transects possibly in conjunction with a "FAD" (anchored fish attractant device). Sampling data would include:

1. length/weight/species.
2. biological factories/maturity food, etc.
3. age and growth samples, if appropriate.
4. physical observations, time, place, temp, etc.
5. lunar period.
6. etc. (as appropriate).

Troll fishing operations do not have to be limited seasonally but may be carried on throughout the year in conjuction with other sampling techniques, particularly when running to and from fishing areas. On occasion, production or demonstration troll fishing will be conducted to maximize the motivation of local fishermen in their consideration of this technique, and to evaluate economic returns.

Trap Fishing - An appropriate method for resource evaluation and gear experimentation is demersal trap fishing. As some concern has been expressed regarding the desirability of this technique, very careful monitoring and evaluation should be incorporated into these activities in order to insure that overexploitation is prevented.

The following criteria should be incorporated into the planning:

1. Set traps in appropriate areas (hard bottom).
2. Attempt to design traps with small fish escape vents.
3. Standardize bait, i.e. fish frames.
4. Control soak time, i.e. 48 hours.
5. Attempt to categorize bottom by standard classification methods.
6. Record bottom temperature.
7. Varying depth situations.
8. Others as appropriate.

Biological data to be recorded will include: species composition, weight, length, sex, maturation, age + growth, etc.

Longlines - Longline fishing offers an opportunity for increasing production of species not now regularly harvested by traditional methods. Three sub-categories may be discussed: (1) pelagic (floating longlines) tunas + billfish; (2) demersal (bottom) snapper-type fish; and (3) variable depth longlines for shark.

1. Floating longlines, used seasonally during periods when large pelagics move cloer to the coast (hot season), may provide a means to capture large fast swimming pelagic species. Species which may be caught include yellowfin, big-eye, and other tuna species, various billfish including marlins and swordfish and some shark species.

Depending on the levels of expertise available in the project staff, it may be desirable to bring in a suitable expert to supervise the start-up of this activity. Regional experience and broad scope studies such as the UNDP/FAO Red Sea Project will be helpful in planning details and scheduling this activity.

2. Anchored, bottom lines can be introduced to produce bottom dwelling species particularly during the period of the year (November - March) when the thermocline levels are depressed and the snappers and dorades disperse into deeper waters.

The use of bottom gear during this period may afford the participating fishermen an alternative fishing method which will provide satisfactory return for vessel effort.

3. Shark in Djibouti waters are a problem to the existing fishery in the form of shark damage to handline fishing and they may represent an under-used resource. Specialized longline gear fished at varying depths

should be to assess this resource. Success in fishing for shark can be enhanced by using filleting wastes taken from the Cooperative.

Data to be derived from experimental longline fishing should include but not be limited to:

1. Description of gear, length, hours fished, etc.
2. How gear set i.e. float, bottom, etc.
3. Time of day - location - hydro data.
4. Length of soak.
5. Species take/hook number.
6. Biological and other characteristics, i.e. length, weight, sex, maturity, feed, etc.
7. Total weight/hook.
8. Other pertinent observations.

Hand Reel Fishing - Hand reel fishing offers the potential for increasing the production of individual fishermen by mechanically assisting the dropping and retrieval of the fishing gear. A greater number of hooks can be employed and deeper water can be fished without a great increase in physical energy expended. This system in various forms has been adapted in many comparable situations with substantial increases in the catch. Used in conjunction with acoustic depth sounders, new fishing areas can be located and test-fished. It is expected that some progress in introducing this technique will be made during the remainder of the Phase I Project. The experience developed during these experiments will have much to do with the ultimate design and employment of this technique. Data which will be necessary to evaluate this technique include:

1. Description of line, length, type, sinker, weight.
2. Number and size of hooks.
3. Type of bait used.
4. Bottom characteristics.
5. Catch by volume, species and time of day.
6. Number reels, no. of fishermen.
7. Time expended.
8. Surface conditions (wind, time of day, etc.).
9. Bottom temperature.
10. Other as appropriate.

Surface gillnets - Gillnets are a simple and often highly productive fishing method. Gillnets fished on the surface (often at night) are sometimes productive in capturing mackerels, tunas, shark, oceanic squids, and other species. Due to the unpredictability and great variation in potential catches, it is suggested that this technique be given lesser priority in the resource evaluation program. It will probably be best to wait until year II of the project before developing plans, as preliminary discussions with IFAD staff (September 1983) indicated their interest in gillnet fishing.

In lagoons such as the one observed near Godoria (above Ras Bin near Obock), there may be concentration of harvestable mullet. A mullet fishing expert fisherman could be brought into the project on a short-term assignment to evaluate probably potential. Possible techniques may include

stop seines, beach seines or gillnets. As these studies are conducted, particular attention should be given to population (standing stock) estimates and potential resource yields. It is imperative that some control be built into exploitation plans since the available environment and resource extent are poorly understood at this time.

Special Projects - There are a number of minor potential resources which may be given consideration for specialized and limited resource surveys. Due to limitations on staff and vessel availability, this work should only be accomplished on an ad hoc basis. Local entrepreneurs should be advised of significant and useful source information on certain varieties.

There is a limited, but profitable, export fishery for sea cucumbers in nearby Yemen. This product is prepared for export to fareast markets where it is known as "trepang". For comparatively little expenditure, a consultant could be acquired to evaluate this potential. Other species such as various squid(s), cuttlefish, octopus, shrimps, crabs, lobster, clams or other gastropod molluscs could offer limited opportunity for local or export use. It is not recommended here that formal surveys be conducted for these species. Consideration for short-term evaluation through consultancies may be possible if experience and opportunity justify such an effort. All of the foregoing survey scenarios should include participation by Djiboutian trainee counterpart personnel.

With the limitations of staff and possibly through contract(s), length, frequency, sex compositions, reproductive data and catch per effort by species should be incorporated into a format which will allow its ready attraction for future management studies. Due to a limited scope, it is not anticipated that the project will result in definitive and hard resource estimates, but will provide trend indicators. All possible consideration should be given to maximizing the data accumulated into a format usable for future management considerations and for utilization by fishermen.

C. Training - Training activities for experienced fishermen should be provided separately from the training given to less expert or new fishing participants. Training initially should involve experienced fishermen in demonstration and group activity efforts only. Efforts should consist of using tested equipment and gear in a jointly performed activity. Professional fishermen with many years experience in Djibouti are not receptive to classroom or experimental approaches to education. To convince these fishermen to alter current practices, it must be graphically shown that a given different means of doing some activity with different tools is more efficient, as well as effective. Under Phase I, failure to follow the demonstration method with pre-tested equipment and gear led (on many occasions) to negative attitudes towards change by fishermen when equipment and gear proved ineffective or inefficient. Also these fishermen have a warranted pride in their ability to fish in difficult circumstances. The education process must acknowledge that pride and fit those difficult circumstances in a group effort. The probable kinds of equipment to be tested and demonstrated include deep hull open boats with diesel engines of different configurations. The gear to be tested and demonstrated will probably consist

of reels, longlines, various traps, types of nets, portable echo sounders, mechanical winches, type of lines and hooks and, perhaps, more specialized gear (squid jigs, lures, lights, etc.).

Training for less experienced fishermen (crew members) and new participants in fishing should include both formal in-class instruction, as well as on-board demonstrations, in the following:

1. Boat handling - The actual "how to" of controlling a boat - steering, turning, docking, going into a sea, etc., could be subject topics.

2. Basic navigation - Since there are no electronic navigational aids available for use in Djibouti, and no existing fishing vessels with even a magnetic compass aboard, all navigation is currently carried out as dead reckoning, i.e. steering a "known" course for a known time. In the case of experienced Djiboutian fishermen, this "known" course is determined by visual sightings. All fishing is done inshore, always within sight of either mountains, islands, points of land, a lighthouse, etc. The navigational training should emphasize the use of these land marks and explaining how position can be determined by comparing relative angles (triangulation).

3. Safety at sea - Simple but basic first aid training should describe what to do for bleeding (from knife cut, fish attack), hook in hand, stings and bites from venomous marine animals, etc., as well as basic safety rules, right of way.

4. Basic engine repair + maintenance - A program should show fishermen how to remove and replace the boat engine cover, how to clean and dry and/or replace a spark plug, how to clean and adjust the carburator, how to replace zinc electrolytic trim tabs, how to mix gasoline/oil, how and where to lubricate, etc.

5. Basic fishery biology for common species - This section of curriculum should provide the student fishermen with helpful information without bogging him down with unnecessary marine biology. It should address simple elements such as when and where the species are characteristically found, what does the species normally feed upon, at what time of the year is the species' spawning season, and seasonal effects on product quality.

6. Weather and currents - Both can be discussed with relation to (a) boating safety and efficiency in transit to and from the fishing grounds and, (b) in relation to their effect on fishery production. Monsoons and their effects on thermocline variations should be specifically addressed for Djiboutian waters.

7. Fishing methods - Djiboutian fishing methods are very traditional and the effectiveness is limited. There is much available in the way of gear and gear technology that can be introduced to them. Introduction should be done through demonstration and actual utilization. All gear must be tested before demonstrated.

a. Hooking - Presently only a simple type of hook is being used for rather a diverse fishery. Other hook sizes and shapes should be presented with accompanying explanations as to how and why they work. Fishing with a reel rather than a handline enables a fisherman to handle larger fish from deeper water with greater ease (due to the mechanical efficiency).

b. Longline - A simple longline (perhaps 500-1000 feet for Djiboutian fishing vessels) with many short leaders with hooks attached is placed on the bottom and allowed to set for one or two hours. It can usually out-produce a singlehook handline fished for a comparable time period. Additionally, the soaking period is passive, giving the fishermen this time to perform other tasks (i.e. fish with additional equipment).

c. Netting - Some gillnets are being used at present, but additional nets and net methods such as beach seining and stop netting should be included in a training program.

d. Trapping - There is no trap fishery in Djiboutian waters. There are crabs, lobster and some fish species which are "trappable". Trap design and use should be covered. Traps are another example of a passive fishing method which gives time to the fishermen for performing other tasks.

8. Fishing gear - Usage of new fishing gear or equipment must be thoroughly understood by both experienced and in-experienced fishermen before they can be expected to use it effectively. Minor repairs, such as parts replacement, must be taught so that equipment will be maintained and used. This section should deal primarily with reels and their operations but should also include basic knot tying for attaching hooks and swivels to lines and for joining line to line, etc.

9. Care and handling of produce - Students will be shown examples to good and bad quality marine products, and will have explained to them the approved methods of handling them. Gutting, washing and proper icing will be demonstrated and "hands-on" participation should be required. As throughout this classroom curriculum, teaching should be restricted to a practical orientation - in this example the goal is to teach how to keep product in good condition - not necessarily to teach why it is in good condition.

10. Conservation - Without overburdening the student with long dialogues concerning conservation and preservation, it would probably be sufficient to simplify the one practical concept, i.e. if all egg-bearing females are harvested there will be no young animals and if small or young animals are harvested, there will be no adult animals. (At the present time, both undersized + gravid spiny lobsters are being taken.)

Variations on the above curriculum may be offered for the more experienced fishermen, depending upon his level of individual competence and interest. It must be kept in mind that the level of literacy amongst the Djiboutians is quite low, so much training should probably be done through demonstrations rather than formal training. All training efforts, and in particular the more formalized in-class instructions, must be structured to reflect the level of education. "Show-tell", visuals and lectures which emphasize one-on-one dialogue should make up the core material for this training section.

Training activities will also be carried out for SEP staff and ACPM staff. It is expected that some ACPM staff will participate in gear/equipment testing and demonstration efforts. The SEP boat captain and

crew will require training before they are able to actively participate in the research program. The SEP will provide staff to assist and ultimately run the marine resource exploration activities. Boat crew, boat operating captain, and the fisheries biologist counterpart will all receive training. It is probable that the fisheries biologist counterpart will require some study abroad and that the boat captain will also receive some short-term training outside Djibouti. See Annex I for the suggested training plan.

D. Other Support - Under Phase II assistance, production efforts will include a limited amount of funding to purchase equipment and gear for testing. Also funds will be provided to enhance research efforts through the purchase of laboratory equipment.

Yet for production efforts to reach and exceed projected levels, inputs are required from other sources as well. These needs that have been identified (and stated), but not met directly by Phase II. Phase II support will meet the needs of expanded knowledge on fish habits/locale, use of gear and equipment which is more efficient and effective than that now used, create a group of improved and expanded fishermen and help improve motivation by making fishing a more attractive profession. Needs will still be felt in the areas of equipment shortage and certain logistic problems.

Equipment and gear shortages for new items should not occur if the ACPM revolving fund continues to supply fishermen with the inputs they need on a timely and cost effective basis. Yet the ACPM may experience financial difficulties in finding large amounts of capital for equipment purchases (new boat hulls and diesel inboards could cost as much as $10,000 each). If the ACPM does encounter funding difficulties, then assistance from SEP, IFAD or another donor will be required to purchase equipment and gear for the ACPM.

Repairs and maintenance of boats and motors have been carried out by the ACPM, with assistance from IFAD and AID. This help has been important for the fishermen, who rely on the ACPM to repair their outboard motors and crafts. They have paid for this assistance and will continue to do so. Yet ACPM staff alone have not been able to perform all needed repairs. Without continued donor technical assistance and supplies, the fishermen will suffer. Currently (September 1983) there is no motor mechanic at the ACPM and there are over 20 outboards now needing repairs or maintenance. Continued outside assistance sponsored by IFAD or another donor will be required to repair and maintain the artisanal fleet.

The SEP has budgeted $600,000 for the construction of storage, ice-making, and repair facilities at Obock. For the fishermen near Obock (at certain times of the year the whole fleet) these facilities are essential for increasing production, lowering transport costs and for solving numerous logistic problems (carrying ice, transporting fish in small boats, and repairs on equipment). IFAD and AID are assisting with the SEP effort (IFAD will supply machinery for the fish chilling room and AID has supplied the ice machine), yet progress has been slow. Completion of the construction and opening of operations is crucial to the success of an expanded fish production and the SEP/GROD will be required to complete construction by the initiation of Phase II.

The UNDP/FAO Red Sea Fisheries Project bases in Cairo and Aden is comprised of seven participating territories including Egypt, Sudan, Jordan, Saudi Arabia, North Yemen and Djibouti. The UNDP project staff includes several biologists, an economist, a gear specialist, a processing technologist and a statistician. Quarterly sampling of fish caught is being conducted in Djibouti at the Cooperative. Ten species are the target of these studies. It was estimated by the FAO biologist in charge that these species comprise 40%-50% of the total annual landings at the Cooperative. Information which is gathered on each species includes: length, frequency, maturation by sex, weight and scales and otolights (as appropriate). These data have been taken quarterly since the summer of 1982. At this time, the project is expected to terminate in late 1983. However, it may be extended. Coordination with this project is imperative if it continues in some form. The work should be continued, even if not under FAO sponsorship.

E. Results - It is expected that expeditious completion of the resource evaluation and exploratory fishing , the training and the support efforts listed above, will lead to the following specific benefits:

1. Fishery expansion, better understanding of the scope, distribution and possible yields of traditional fishery resources particularly the snappers (lutjanidae), the dorade (lethrinidae), jacks (carangidae). A better understanding of availability and characteristics of some of the tuna and mackerel-like fish will also result.

2. Technology transfer - a planned and systematic expansion of landings and accelerated technology adaptation can be programmed by SEP. In the short-term the availability of the information gathered could greatly assist efforts to increase production.

Significant new technology and resource development opportunities can be derived as peripheral results. Clear possibilities include fisheries for sharks and sea cucumbers, as well as expanded landings of traditional species.

3. Resource and management techniques - a lasting benefit to Djibouti should be a checklist of resource maintenance events, such as size of fish and catch per effort. With continuing levels of monitoring by Djibouti staff, basic resource management for important species can be implanted and resource harvest levels maximized.

4. New techniques - a better understanding of the application of new fishing methods and other techniques such as echo sounding and temperature location of fish concentrations will have large benefits.

5. An important and significant output of Phase II will be the continuation and improvement in the level of understanding practice of the research elements demonstrated - by Djibouti trainee counterparts.

The results of improved production will be an enhanced income level of fishermen, projected to increase 178% to $4,640 for an owner/captain and 86% to $1,657 for a boat crewman. The impact on marketing and consumption will be discussed later. Production or catch per labor unit will increase 58% over the three year period and total yield will expand 100%. The labor force should expand by 45 fisherman, including 15 new boat captains/owners. These increases in production, profit and the labor force are considered conservative estimates on gains. Refer to Section II.F.2.

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2. Processing

Difficulties in the processing of seafood products lead to unnecessary losses and spoilage, as well as decreases in quality. Fish is processed, prior to sale to customers, by ACPM. Therefore efforts at improvements are concentrated on that institution. Marketing efforts will also attempt to enhance the quality of processing at the retail outlet level. Some of the weaknesses in the current system include excessive handling, poor storage, improper cutting, disorganized work flow and poor utilization of facilities.

The requirements for facilities - storage, ice-making, work areas - should be addressed prior to Phase II. The establishment of the facility at Obock, the expansion of chilled room space and cold room capacity at Djibouti, and increased ice manufacture should meet most projected needs. The following section assesses these facilities on that basis.

To assess the ability of the facilities available to cope with a production level double the base year volume (increasing from roughly 33 tons a month to 66 tons average monthly by year three of Phase II), measurements of work areas, storage rooms and ice-making capacity are required. It is assumed that by the beginning of Phase II (summer of 1984) the storage room and ice machine will be functional at Obock, the new storage unit (freezer) and ice machine will be in place at the ACPM in Djibouti, and that eight retail outlets in Djibouti will be fully functional.

Storage Capacity. Some calculations are necessary before a full assessment can be made. Preliminary figures show that chilled fish boxes hold 35kgs of fish and are considered 75 litres in capacity. The loading density is thus 35kgs/751 = 35kg/075m$^3$ = 467kgs/m$^3$.

The chilled fish storage room is roughly 50 cubic meters, with a 3m ceiling. Because of stacking problems, only 1.5 meters can be used. This reduces the capacity by 50%. The need for access and aisles will probably decrease the remaining space by another 25%. This reduces the usable volumes of the chill room to 18.75m$^3$. The fish storage capacity is for nine tons (9,000 kilos). Requirements in storage are about five days production (ice/chilled fish should not be stored longer than that - thereafter it should be frozen). At a production of 2.2 tons per day and a contingency of 25% for large production runs, the requirement is for 14 tons space (14,000 kilos).

There are plans to convert the adjoining freezing room to a chill room. This conversion would be quite simple and would consist of removing one refrigeration unit and changing thermostat settings to 1$^{o}$C. The room is 35m$^3$. Using 1/2 height and 3/4 floor space, the usable area is reduced to roughly 13m$^3$. At 467kgs per cubic meter, storage capacity is available for 6 tons of chilled fish. This increases the chill room area to 15 tons total, a level more than adequate to store five days production.

Frozen storage will consist of two rooms, the current 90m$^3$ and the ordered 50m$^3$ unit (due for arrival and installation in 1983). The density for frozen fish is less than chilled fish (it is lighter, different containers are used) and a conservative 400kg/m$^3$ is used. The storage space is greater per cubic meter, however, as containers (fiber-board) can be stacked higher. Approximately 2/3 or 67% of the areas can be used. For

$140m^3$ this represents 94 cubic meters. At $400kgs/m^3$, the frozen product capacity is for storing 37.6 tons. It is estimated that three-fourths of the frozen fish will be stored in fillets or chunks. This reduces the whole weight volume considerably. If all fish were stored in the form of fillets, the whole weight requirement would be reduced by one-half. A more conservative one-quarter reduction will be used. Therefore one-half of the storage capacity is used for fillets and one-half for whole fish. The storage capacity represents 18.8 tons whole fish and 18.8 tons of fillets (or 37.6 tons of product). The storage area will be adequate for 56.4 tons of whole weight fish.

Adding the chilled fish storage capacity, total storage is for 71.4 tons of fish. This is roughly 8% higher than monthly production figures (66 tons) and is considered adequate at this level of production. Frozen fish should also not be stored for longer than two months and a one-month turnover is considered reasonable.

Ice-making capacity. The current ice machine is to be supplemented (during 1983) by an additional unit at the ACPM and one at Obock. Nameplate capacity on all these units is for 5.5 tons per day production capacity in Djibouti and 2.5 tons per day in Obock. Because of equipment breakdowns, losses of power, high water and ambient temperatures, the current machine has operated at roughly 40% of capacity, producing in a 2.5 ton unit only 1 ton per day. Assuming the same poor efficiency by the other units, only 2.75 tons per day will be produced in Djibouti and 1 ton in Obock.

Requirements for ice production have been roughly calculated at two tons ice per ton of whole fish. Of this two tons, one ton is used for fishermen production, one-half ton is used for chilled storage and one-half ton is used for retailer usage. On this basis alone, it is clear that the ice-making production will not meet full production requirements. At a full production of 2.2 tons of fish per day, 4.4 tons of ice will be required. As only some 3.75 tons will be produced, either an additional unit will need to be added to the new three ton production unit soon to be installed, or the efficiency of the equipment will have to be improved.

Work space. At the ACPM, tests have shown that a filleter can produce 40kgs of fillets per hour. In a seven-hour work day, 200kgs of fillet could be produced regularly without difficulty. Wholesale sales of fillets is projected at one-half of all sales, which (by the end of Phase II) should total an annual 800 tons or roughly 2.2 tons per day. If one-half of this volume is filleted then some 550kgs of fillets will be produced. Given seasonal fluctuation and peak loads, it is assumed that wholesale processing capacity should be for 800kgs of fillets (processing 1.6 tons of whole fish). This will require the services of four filleters in wholesale. At present there are an average of two filleters working in wholesale (and two in retail customer sales).

Work space will be required for two additional wholesale filleters, or the retail filleters will have to be provided new work stationers. Wholesale operations should be separated from the ACPM retail operation, in terms of management and processing. It is suggested that a

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portion of the gear storage area be utilized for retail sales and the current sales area be used for wholesale processing only. This would require construction of counters, filleting areas, ice boxes, cashier areas, and customer standing areas.

Staff. At present the ACPM has 25 employees, one-half funded by the GROD. At present four of those employees are considered redundant (1 "refrigeration" staff, 1 mechanic, 1 carpenter, and 1 guard). Assuming a staff of 21 employees at the time of Phase II initiation, the GROD through SEP will require a counterpart for the marketing manager and for the master fisherman, as well as two crewmen.

During the Phase II period, probably two new employees will be required in fish processing. Therefore, the staff, given improved productive capacity and management systems, will only increase by two over present levels. The ACPM will absorb the payment of their costs and it is assumed that the ACPM will also pay emoluments for an additional six employees now paid for by the GROD (see ACPM Projected Budget).

A. Tasks and Requirements - The need to improve the processing of fish will become greater as the volume increases. The processing system must be able to adjust to new requirements with less losses in quality, weight, pilferage and from spoilage. At the present time, statistics show that over 7% of fish purchases do not reach the customer. This represents a large loss that can be controlled through improved practices and utilization of facilities.

Many of the tasks could be accomplished now (discussions have been held with ACPM management on this subject) and will be listed here.

1. All fish should be received by the ACPM, bled, gutted, washed and packed in ice, even those caught on the day of receipt.
2. All fish should be packed in storage boxes for chilling by size and type immediately after weigh-in at reception.
3. FIFO should be used for all fish, both chilled and frozen.
4. Frozen fish should be glazed and stored in suitable shipping containers.

The value, saleability and profitability of the product and the ultimate success of the ACPM project will depend on the consumer acceptance of the products, among many other factors, which are being addressed in this proposal. In the following discussion, factors affecting yields, as well as quality and sanitation are brought forward in the progression of the fish from the water to the consumer.

a. On-vessel factors. The quality of fish is at its best when it comes out of the water and it is most essential that quality preservation become a part of the fishermen's view of the fish. The need for immediate gutting and bleeding for top quality fish should be stressed. Since the guts contain digestive enzymes and material that is readily metabolized by spoilage bacteria on fish, a good sea water wash before storage is of significant value. A clean fish does not spoil as rapidly as an unwashed fish.

The lowering and control of the fish temperature, especially by judicious use of ice, is the most essential point of fish quality preservation

on the vessel. To be effective, the ice must have intimate contact with the fish surfaces to cause heat transfer and the melt water should also be allowed to provide a continued washing of the fish surfaces. The melt water should therefore be allowed to drain. Shaved or flake ice which is available from the ACPM presents the best form for rapid chilling. In this regard, since the fish is thickest and cooks the slowest near the gut cavity, the addition of ice to the gut cavity has a very significant effect on the chilling rate. Ice not in contact with fish is of minimal value. Considering the high ambient temperature, the adequacy of the insulation and protection from the hot air and sun are factors for evaluation in the design and construction of boxes for holding the fish and ice on board. A sun shade above an insulated box can be of value.

One further point of quality can be made at this point. Any bruising of fish on the vessel before the fish has been well bled will be much more apparent (as a flesh blemish) than will later abuse. This is not to say that later abuse is not significant, but it should be brought to the attention of the fishermen that they need to take care of unbled fish.

b. Handling and unloading. Every bit of exposure to elevated temperatures contributes to the loss of fish quality. The time and temperatures of exposure of the fish from the cooler box or chest on the vessel until the fish is again in ice in the chill room should be minimized. A fish receiving system should be instituted so that the fish is not exposed unnecessarily. The present receiving and weigh-in area of the building will be inadequate if any significant increase in volume of landing occurs. The extension of the back of the building on to the beach should be a priority consideration. This will also help to relieve a little of the crowding and confusion in the processing area.

The use of the standard plastic boxes for unloading the vessels should also be evaluated so that the additional dumping of fish on the floor from bags or wheel barrows is avoided. From both quality and sanitation standpoints this would be a help. From the standpoint of product flow, individual fish will not need to be handled as often and will move more expeditiously.

c. Chilled storage. After the fish has been sorted and weighed, it should be re-iced before being placed in the storage room. The fish should be packed in boxes and not laid on the floor. The re-icing should be done when the fish are being sorted by size and species and then put into boxes. The ice and fish should be interlayered with a little extra ice on top. The fill of the boxes should be such that the fish are not crushed when the boxes are stacked. With a system such as this, not a lot of ice is necessary in each box, but the fish are all in contact with ice. This allows the melt water to drain, also providing a continuing washing and chilling of the fish. Further, boxed fish in the chill room can be labeled with species, size, weight and date information. For inventory control, this will allow easy access to species of choices but more importantly, it will allow the application of the principle of first in/first out for inventory and can reduce spoilage losses to a minimum.

This fish handling system may require more boxes and careful design of the chill room operation procedure, but it will assure much more effective use of the cubic volume of the chill room. The functional capacity of the chill room will depend to a great extent on the mix of species in storage at any time and the necessity for aisles to move product in and out. The ultimate capacity can be calculated from the floor space, box size and capacity and the practicable height for stacking.

d. Processing. The processing area at ACPM currently is chaotic and will be inadequate if a significant increase in production is realized.

Assuming a basic product mix similar to that currently being provided, there will be a need for two more fish cutting stations. Also, the product flow is so tightly folded back upon itself that the workers are falling over each other and the product. The rear of the building must be extended to provide a more adequate receiving area, but this will not solve the problems of the processing area. Consideration must be given to moving the retail sales area into part of the area currently used for dry storage in the front of the building. This would allow the retail operation to function separately with better inventory control, while the processing and wholesale operation will have additional needed space and better production flow.

As part of any building modifications, a washroom must be provided for the employees which includes a shower, as well as a toilet and hand washing facilities.

Screens must be provided on windows and screen doors with hardware cloth backing provided at all doors. This is necessary for insect control. It is realized that screens are not used in the local culture, but they should be introduced to help decrease the unsanitary conditions created by the insects and animals (cats) in the processing area. Culturally it may not be possible to introduce screens in the retail area but this should also be considered.

In cutting operations for fillets and the wholesale trade, the use of sharp knives could well increase both yield and rate, as well as product appearance. The work table heights and arrangements should be evaluated. A number of studies have been carried out in the filleting operations in several countries, resulting in new designs for filleting tables which increase yield, as well as rate. When the sales area is moved, a first step in modifying the process area should be to procure and install two or more modern filleting tables and train employees in the use of sharp knives and modern filleting techniques. The employees will find that less effort is required with better height work surfaces designed for their jobs. At the same time, sanitation measures such as washing cutting tables, knives and hands on a regular basis can also be instituted.

Before the installation of a new system is made, a short period of record-keeping on yields and rates should now be kept. Then a comparison can be made with the new system. If the records can be obtained without the employees realizing their outputs are being checked, the attention increase production factor can be avoided.

Within the process area, there needs to be a clear separation of offal (waste) from the fillets and the uncut fish. The question of disposal will be considered under a later section.

The flow of fillets should not allow long delays to occur between the time they are cut and they are shipped, returned to chilled storage, or put into the blast freezer. While it is not really desirable to return fillets to the chilled room with uncut fish, this is more desirable than leaving them for an extended period in the warm cutting room. When returned to the chiller, the fillets should be covered with some ice and the boxes should be stacked separately from uncut fish - and fillet boxes bottoms should not have been in contact with the floor.

A small portable high pressure spray washer should be obtained for use in the processing area. A number of manufacturers supply these electrically powered units, which have small tanks and can use a chlorinated standard detergent. The unit can be used to clean vertical and horizontal fixed surfaces, as well as equipment. Also, it should be used to clean and sanitize the cutting boards, fish boxes and the freezing trays. Prior to acquisition of a mechanical washer, the use of brushes and a chlorinated detergent for cleaning boxes and cutting surfaces and tools should be instituted. Current cleaning practices are fair, as evidenced by the lack of any strong odors and no buildup of waste except in the cracks of the battered cutting boards.

e. Freezing. In the blast freezing operation, it should be recognized that at least 2% weight loss will occur due to surface dehydration. There is no way to avoid this without prepackaging in impervious material. This is of no real consequence because a system of glazing the frozen product prior to storage will be instituted. Glazing is accomplished by a short spraying or dipping of the product in ice cold water. The product coming out of the blast freezer is at a low enough temperature to have enough heat capacity to freeze a surface film of water. If another layer of glaze is desired, it may be necessary to return the product to the freezer for a short time to lower the surface temperature. This will be determined by trial.

While it is required that all frozen product be glazed, fatty fish should definitely be considered for at least a second glazing to provide a better barrier against oxygen (which will cause spoilage in long storage).

For freezing, plastic sheets or trays (food contact grade) should be used as the supporting surface for the fillets. These impervious materials can and should be washed and drained between uses. Since these materials are flexible, the frozen fillets can be readily removed simply by flexing the sheets or trays with little or no loss of product and minimal effort. They also provide a surface which is sanitizeable.

For storage in the freezer, fiberboard containers should be used for the fillets. Many manufacturers can supply these boxes that will provide some barrier to water vapor in the freezer, are stackable, and can be used for product shipment. The individual product pieces need not be handled again after glazing.

Product should not be placed in the frozen storage until it is fully frozen and its center is significantly below freezing. The preferable temperature for the product at the time of removal from the blast freezer is just below that of the storage facility. It should be adequate to simply measure the temperature in the thickest piece of fish in a load on a trial basis for several batches until a relationship between load (kg), thickness (cm), and time is established.

Even though freezing greatly decreases the rate of deterioriation, it must always be recognized that product changes are occurring. It has been shown that there are great differences in the rate of deterioration of frozen fish. This is related to species. The development of rancidity in fatty species is usually the first problem after surface dehydration (freezer burn). This leads to the recommendation that an inventory system, which includes dating of product as it goes into storage, be developed. The first in/first out principle can be used (where first foods received and stored are also the first sold).

b. Technical Assistance - There will be a need for technical assistance in the development of plans for changes in the plant layout and equipment installation at the ACPM. Such assistance will be provided through a short-term consultancy.

The actual implementation and staff training will be carried out by the FAC processing person working at the ACPM, with the assistance of the Phase II ACPM Management Advisor.

c. Training - Other than possible training of the FAC "cooperant" now working in processing in an overseas setting, all training of local staff will be on-the-job during the life of the project. Constant monitoring of practices is required, as the maintenance of good processing practices requires vigilance. Problems can occur rapidly and be quite costly.

d. Other Support - Support from FAC, which is now providing a person working in fish processing, will probably continue for some time.

The current program of plant improvement is being carried out by the ACPM with support from AID (flake ice machine), IFAD (cold room, petrol station), and the GROD (land, building). Future requirements are to be funded through AID Phase II activities, such as establishment of a new local retail facility at the ACPM, reestablishment of dry storage facilities and some improvements in office areas.

Phase II will provide funding for the establishment of an appropriate workflow layout for the wholesale processing area and improvements in the reception area (for fish delivered by the fishermen). Funding is also available to replace essential storage equipment if required.

e. Results - The expected results are an improvement of the quality of products from the ACPM and a decrease in losses because of spoilage, weight or pilferage.

Reduction in losses at the ACPM is projected at 2% in year one, 2% more in year two and 1% additional in year three and losses continuing at a level of 2% on total purchases thereafter. These calculations are based on conservative estimates of uncontrollable weight loss through dehydration and conservative yields of fillets from whole fish. Savings on projected

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reductions total DF 4,280,000 or $24,500 in year one; DF 10,720,000 or $61,300 in year two; and DF 16,000,000 or $91,400 each year thereafter. For further details see the ACPM Projected Income and Expenditure notes in Annex E.

3. Marketing

Marketing efforts in Djibouti have been hampered by the lack of a coherent work plan. Problems and needs reflect shortages of supplies, shortages of points of sale for customers, certain fluctuations in consistency and quantity of supplies, a lack of information about available products, little differentiation between products, inefficient distribution, lack of statistical information and no determination of an appropriate pricing policy.

A. Tasks and Requirements - The formulation and implementation of a coordinated marketing plan is required. Such a plan must include the following components: (1) Supply, (2) Demand, (3) Product Analysis, (4) Pricing Policy, (5) Physical Distribution, and (6) Production Promotion. The requirements for the ACPM in each of these areas will be discussed briefly.

1. Supply factors - As covered under production, annual catches increasing from 400 tons to 800 tons in annual production sold at the ACPM are expected over the life of the project. Monthly average production will increase to 67 tons, with a load during certain months of almost double that level, and other times as little as 50% of the average. Different seasonal patterns, including those of the monsoon periods, will affect the supply of fish. The marketing system must factor in these fluctuations and emphasize sales at certain times, as well as emphasize frozen fish sales (and build an anticipatory stock) when fresh fish are in short supply.

2. Demand Analysis - A profile is needed of the current and projected market for seafood in Djibouti. A market study should be performed, determining seafood to be sold, the seasonality of sales, and profiles of ultimate consumers. Separation must be made between institutional customers, specialized sales areas, retail outlet customers (proprieters and their clientele) and ACPM retail clients.

The key factors in marketing the increases in production will be the increase of sales to institutional customers and the development of new consumers. The firm establishment of neighborhood retail shops will be a critical factor in developing the seafood market in Djibouti. Projections have been done on the probably scenario and make-up of the customer portfolio. These are summarized as follows:

| | Tons of product sold and percentage | | | |
|---|---|---|---|---|
| Client | Base yr | Year 1 | Year 2 | Year 3 |
| Major institutions | 180t-45% | 166t-30% | 222t-35% | 328t-40% |
| Restaurant, hotels, supermarkets | 20t- 5% | 27t- 5% | 34t- 5% | 40t- 5% |
| Retail outlets | 80t-20% | 208t-40% | 280t-40% | 312t-40% |
| ACPM Retail clients | 120t-30% | 134t-25% | 134t-20% | 120t-15% |
| TOTAL | 400t | 535t | 670t | 800t |

Major efforts will be required in expanding wholesale trade to large institutions and in stabilizing sales to operators of the neighborhood retail outlets. The network of retail outlets is scheduled to expand to all neighborhoods in the city and total fifteen by the second year of Phase II.

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Outlets are also to be constructed in the towns Dikhil, Ali Sabieh, Tadjoura and Obock, but the impact on sales from these outlets is expected to be negligible in the near term.

3. Product Analysis - Fish at the ACPM are currently sold in three forms - whole/dressed, steaks (chunks), or fillets. Very little product differentiation is used. Currently a very small portion of the products is pre-cut (processed) prior to sale to retail customers. Less than one-half of the seafood received is presently frozen, due to high turnover and customer preference.

Analysis is required by species to determine the saleability of different products. In many species, a grading system could differentiate various sizes to reach different customers. For example, the poorer areas appear to be good markets for small fish. Religious and cultural practices could affect the sales of products and these factors should be examined. Target species should be identified and target markets developed for each specie.

Fresh and frozen. Most of the product sold through ACPM is sold fresh. Drastic improvements are needed in the handling of both fresh and frozen fish. Poor handling reduces the shelf life, and therefore increases the losses which can be directly quantified in terms of money.

Fillets should be frozen, glazed, then put in a standard wax cardboard container (i.e. 10kg box). The boxes would prevent freezer burn, they would avoid double handling of the fillets, and would be easier to store and maintain inventory control. A standard "fish box" could also be used to freeze whole or gutted fish. The cost of such a box would be met through better inventory control (and therefore a lower spoilage loss), and the reduction in product weight loss due to freezer burn. The use of standard boxes would make servicing wholesale accounts easier by requiring a minimum order. Boxes with frozen whole fish could be shipped to outer areas and would not require refrigerating for several hours.

Processing. Yield studies should be conducted to determine the quantities of various species from the gutted form paid the fishermen, to the final form i.e. fillet, chunks, etc. The economies of studying the actual cost of fish sold might reveal some areas of needed pricing improvements which could improve overall profitability. Also required are yield comparisons using good fillet knives vs. the knives currently used and using different filleting methods. These yield studies could be accomplished easily by filleting 100 lbs. of each species at different seasons, using a random sample of sizes, and then weighing the finished product. This would tell the true yield and cost of the fish and allow more accurate prices to be charged. Filleting yields can range from 40% to nearly 60% of whole fish weight.

Other products to consider. Several other products could represent additional revenue for the ACPM. Fishheads and racks (backbones) have potential marketability as bait or meal.

Markets may also exist for dried fish. Fish offal could be used for animal feed. Fish can be an excellent feed for cattle and poultry. Using fish offal as fertilizer has helped improve efficiency in areas of the Djibouti agricultural economy and at some point might be sold. Other special

products should be examined to see if they might represent a potential area of revenue. No direct export marketing is expected during Phase II, but some localized cottage industries could be encouraged to sell unusual products within the region.

The question of the development of foreign markets may need to be considered in the not too distant future. Export, taking advantage of uncommitted returning air cargo space, is technologically feasible. The freeze - thaw shipment and delivery system could be used. An insulated carton or container, with no added chilling system, could be packed with frozen fish. Delivery in a neighboring country (Ethiopia) as a thawing or thawed product is possible. Fisheries products are being moved by air in other parts of the world and it seems reasonable to investigate the potentials of this approach, especially within Ethiopia.

Several indications of a shark resource (or nuisance) have been given. From a quality standpoint sharks present special problems due to the natural high level of urea in their blood stream. Without special care in terms of bleeding, washing and chilling, ammonia can be rapidly produced, spoiling the flesh. Good washing and soaking of flesh chunks in water or very dilute acid produced products which are quite edible. The subject of shark utilization from the Red Sea was the subject of a study in Egypt reported at the FAO consultation in Casablanca, June 7-11, 1982. The results reported could possibly be applied in Djibouti with the potential for the development of salted and dried products for export.

4. Pricing policies - Examining the pricing policies of the ACPM is necessary to determine if sufficient revenue is being generated. Analyzing the basis for the prices paid to fishermen, and analysis of the yields and wholesale/retail price structure could uncover some areas of high costs or low profitability.

As the market is developed, new pricing structures should be examined. The demand curves for the target markets should be examined. For example, the restaurant/hotel market may have a inelastic demand for quality products, meaning that a price increase will have little or no corresponding change in volume. Therefore, a premium price could be charged the restaurant/hotel customer. Some product differentiation such as portion control, fillets, delivery etc., would require higher costs and allow higher prices to be charged.

All costs should be examined, especially in the area of fish yields. Better inventory control and better handling practices should reduce losses, and therefore reduce overall operating costs. Once these costs are determined, it should be easier to develop a price structure based on the variable costs of each items. Examining the cost at various levels of output will project a rough supply curve. Examining the price sensitivity of the defined markets will provide a rough demand curve. These models, when used in conjunction, will be useful tools in testing various pricing policies and will help the marketing advisor and management reach a more rational decision on the pricing structure ACPM.

5. Distribution - The physical distribution of product to the various markets is another potential bottleneck. Since ACPM has only 2 trucks, the amount of product delivered is limited by the capability of the trucks.

Since the products sold have a limited shelf life, it is important that the delivery network quickly move the product through the marketing system to deliver the product in good condition to the consumer. The loss from spoilage (whether absorbed by the ACPM or the retailer) increases overall product cost and reduces revenue. The entire efficiency of the system suffers.

Retail outlets - The retail outlets visited appear well located, and the products well iced and in good condition.

The market managers need help and training in ordering and inventory management. There was no accurate weighing of product sold and no accounting system was being used. Training in basic bookkeeping is needed. As the retail segment grows, better accounting and distribution practices will be necessary to handle increased volumes.

It is also recommended that the retail shop at the ACPM be relocated to the front of the building away from the wholesale processing area. The current retail area could be used for wholesale only. A rearranging of the layout at the ACPM should be investigated.

6. Promotion - The most effective promotional tool is delivering a quality product on a dependable basis. Some quantity and distribution problems and potential solutions were discussed earlier. Many consumers are not familiar with certain fish because it has not been available to them. This market has the greatest opportunity for expansion.

The current CRS-UNICEF campaign promoting fish as a nutritious, cheap, viable protein substitute, and as a local industry, is an excellent promotional effort. This campaign should be continued and supported.

Radio/TV and newspaper campaigns could be developed to get a short and simple message to the consumer that fish is good for them and good for Djibouti.

Points of sale materials (recipes, posters, education materials) should be delivered to the consumer. The materials currently used by CRS are excellent and this aspect of the program mightbe expanded. Consumer feeding and demonstration offer another avenue to educate the consumer. Consumer education should be a continuous and ongoing process.

The marketing system cannot be established overnight. Each element must be developed in conjunction with the other functions. Market outlets must be expanded and personnel trained in promotion and accounting. The consumer must be continuously told of the value of fishery products. If these systems grow together, a balanced system of production, processing, marketing and consumption will develop.

B. Technical Assistance - Technical assistance will be required for the design and implementation of the marketing plan. The development of strategy, operating procedures and physical performance cannot be done by current personnel. Presently the ACPM has no staff working in marketing, other than the Management Advisor. In Phase II, a marketing manager is included as part of the assistance team. The services of such a person are expected to be required full-time for two years, working at the ACPM and part-time thereafter, making two visits of one month each in the third year.

Annex D details both the qualifications and scope of work for a person filling the marketing manager position. Assuming that a highly qualified individual is located and recruited, no additional technical

assistance will be necessary. In addition to the design and implementation of the marketing system, the marketing manager will be expected to train local counterparts. Formal training should not be necessary, as the requirements of the Djiboutians should be the implementation and continuation of the marketing system, rather than design activities. Training by the marketing manager will also be required for the operators of the retail outlets. This training would consist of simple accounting, product presentation, new product introduction and local promotional activities.

C. Training - The training requirements have been mentioned above and consist of on-the-job training for counterparts and some form of training for retail outlet operators (as well as ACPM retail sales staff). Formal training is seen as requiring one day per week for two months to two groups of five retail outlet operators, repeated three times to encompass all operators. During appropriate sessions, ACPM retail sales staff should be included. The topics to be covered should be determined in detail by the marketing manager after study of operations and requirements.

D. Other Support - Phase II funding includes vehicle replacement. One vehicle will be required by the marketing manager for continual monitoring, follow-up visits to clients and promotional activities.

For the expanded marketing effort to be successful, it is necessary that the number of retail outlets be expanded to fifteen. Each will provide an outlet for serving roughly 10,000 residents. The cost of construction for seven additional outlets is not provided by AID, but will probably be funded by IFAO in 1984. Also, there will be a need for new trucks during the Phase II period. It is projected that one five ton and two one and one-half ton trucks will be adequate for daily distribution requirements.

Funding under Phase II is available for the construction of a marketing office at the ACPM and for promotional activities. Current promotional activities by CRS-UNICEF are budgeted for continuation through 1985 and it is probable that the Food and Nutrition Education Program will be extended beyond that time.

It should be re-emphasized that the marketing effort will require inputs from the SEP, ACPM and various donors. All inputs are essential to a successful program and cooperation between supporting organizations is essential.

E. Results - In Annex E/Project Analyses, the financial and economic results can be found. The previous section, Production, provided the gross results of the Phase II effort for the fishermen, ACPM and the retailers.

The results of implementation, using a well designed marketing plan, will be the creation of a system suitable for efficient movement of increased production from the fishermen to the consumer. It will contribute to additional employment, increased income to people working in the fisheries industry and expand availability of seafood products to the populace of Djibouti. This, in turn, will help the nutritional status of Djibouti and support the national economy.

4. Administration

The SEP, because of shortages of personnel and certain skills, has not been able to form national fisheries industry strategies and policies, has not been able to independently formulate development programs, or formulate an overall plan for the strengthening and stabilization of the fisheries industry. The ACPM management still has many needs as well. Control systems have not yet been fully established. The ability to analyze data (or collect it) has not been systematized. There are not enough trained staff to carry out these functions.

Some of these weaknesses may be addressed before Phase II initiation, but there will be a continuing need for improvement of administration and management of both the SEP and the ACPM.

A. Tasks and Requirements - The formulation by the SEP of national objectives and the overall program needed to work towards these objectives is the fundamental role of that organization. A program which works towards a stable development program to serve the fishermen, fish processors, fish salesmen and ultimately the consumer is essential for Djibouti's national development.

Strengthening the capabilities of the industry participants in this program is also essential. As the main organization representing the producers and supplying retailers and consumers, the ACPM is an integral part, vital to the design and implementation of a national program. Thus, the requirement is to assist the SEP with program formulation and implementation, to provide the ACPM with appropriate management systems and the capability to operate with Djiboutian resources only. To accomplish these tasks, a combination of technical assistance and training will be required.

B. Technical Assistance - To accomplish the major work of a national fisheries program, Phase II will provide a marine economist/management expert to work with Djiboutian counterparts on this essential task. The person will have to help design and implement a program, using inputs supplied by the exploration/research activities, by the ACPM and by all the participants in the industry. The person will have to supervise and coordinate training programs, other donor assistance and serve as Team Leader for all Phase II activities.

Further assistance in this effort will be provided by an estimated three person months of short-term expert consultancies, working on program design and development of the training program for Djiboutians.

Phase II assistance also includes provision of a management/finance advisor to serve as counterpart to the ACPM manager. This person will help formulate control systems, implement these systems and help establish analytical capabilities within the ACPM. Both this individual and the "policy" advisor will work in full-time positions for the life of the project. Both must be highly qualified individuals, with considerable overseas experience and french-speaking ability. Further details can be found in Annex D.

C. Training - Training of counterparts and senior staff at the SEP and the ACPM, totaling four people, will have to be largely on-the-job in nature, although in-house formal teaching is recommended. The demands of

these two organizations for management are such that long-term overseas training of staff is not currently practical. Neither of these organizations has the required calibre of counterpart staff. New personnel will have to be found who are dedicated and can be trained to carry out the essential management tasks required.

The training exercises will be carried out by the technical assistance personnel. Every effort must be made to create an internal capability to manage and administer these organizations and the training will be continuous throughout Phase II.

D. Other Support - Phase II funding will be available for office equipment and furniture, as well as construction of offices if required.

The tasks will require data input, support and participiption from the SEP, the ACPM and the donor community as well. The work cannot take place in isolation, and therefore active participation from the FAC cooperants (including the advisor to the Livestock Division), the IFAD staff (coordinator and master fisherman) and other organizations assisting in the development of the fisheries industry, is expected and required.

E. Results - Upon completion of Phase II, the SEP and GROD will have a set of national objectives for the improvement and stability of the fisheries industry, a program for working towards those objectives and a coterie of staff capable of performing the required tasks.

The ACPM will have a set of control systems which will enable management to make appropriate decisions and well understand the status of the organization. Benefits will be felt in terms of both efficiency and financial improvement.

D. RELATIONSHIP TO CDSS AND OTHER DONOR ACTIVITIES

USAID/Djibouti has, over the last six years, been developing an assistance strategy to the nation which supports the few areas where local production capacity has been identified. The use of economic support funds (ESF) for development activities (when possible) enhances the political and economic impact of U.S. assistance. Efforts to increase Djibouti's own resource base tie in with the Djiboutian national goals of identifying and expanding productive enterprises whenever feasible. In the case of USAID, with limited funding, the foci have been on the development of marine resources, training of the potential labor force, and the saving of scarce foreign exchange. The projects which have grown out of this strategy include the Fisheries Development Project (603-0003), the International Human Resources Development Project (603-0006) and the Renewable Energy Project (603-0013). The Human Resources Development Project provides education in improved literacy, secretarial skills, and bookkeeping. The Renewable Energy Project will develop alternative energy sources to save foreign exchange and lessen fuel oil based dependence for energy. Some proposed activities may have an impact on the fisheries industry and on Phase II of the USAID Fisheries Development Project. The OPG-supported activities of the Catholic Relief Services also tie in with USAID's efforts as explained in the CDSS updates.

The FY 1984 CDSS update shows a greater concentration on assistance for efforts promoting the private sector. This ties in closely with Phase II ultimate goals of ACPM economic independence, of increasing the number of private fishermen, of expanding retail trade, and of improving the profitability in the fisheries industry as a whole. It is an important part of the U.S. assistance effort and serves as a highly visible program supporting the development of local production efforts.

The assistance efforts of many other donors are closely linked with the Phase II Project. Linkages are apparent with UNICEF-CRS nutritional projects, with the International Food and Agricultural Development Fisheries Project, with the Fonds d'Assistance et Cooperation from France, WFP activities and with the FAO Red Sea Project. The UNICEF-CRS Nutritional Project promotes fish consumption by providing fish preparation instruction and nutritional education on the nutritional value of fish at maternal-infact centers and at home economic schools. Meals including fish are prepared at health centers in Djibouti City by cooks and demonstrators for consumption by children and their mothers. Approximately 1,000 mothers attend these clinics each month. Their participation in the cooking and talks given concurrently have greatly increased the exposure of the urban poor to fish. This exposure has increased demand and helped to improve the nutritional status of many Djiboutians who previously did not eat fish. GROD-sponsored local retail outlets are located close to maternal-infant centers. Sales in poorer urban neighborhoods will increase as a direct result of UNICEF-CRS efforts. This program also includes promotional activities in the form of booklets, posters, buttons and radio messages. All these activities will serve to assist with increases in demand, improvement of nutrition and attractiveness of the fisheries industry as a business activity.

The International Fund for Agriculture Development (IFAD) Fisheries Project. is planned for completion in September 1984. This project has funded a fishing vessel (soon to undergo trials), provisions of medium-sized vessels and motors, some technical assistance, and the construction of several Djibouti City retail outlets. Project continuation is planned, which will provide further fishing equipment (boats and motors), operations of the fishing vessel, assistance with motor maintenance and repair, and further construction of retail outlets in various Djibouti City neighborhoods. The IFAD project activities must be closely coordinated with Phase II, as IFAD will finance many components essential for further development of the fisheries industry and necessary for the growth projected during the Phase II period.

The Fonds d'Assistance et de Cooperation (FAC) has and will continue to provide one technical assistance person who is assisting with the ACPM processing and storage. This person's work can be complemented by the Phase II improvement of work flow (to be done by consultants and the ACPM Management Advisor).

Of course, the work of the SEP, as mentioned in Section II/C/4, is essential to progress in the fisheries industry. All work must be done in collaboration with the Djiboutian Government, with their approval and participation.

The following chart illustrates the estimated level of participation by the SEP, the ACPM and various donors. SEP and ACPM figures, as well as the loan portion of IFAD assistance, do not reflect any revenues that might be received for these activities. These figures should not be considered definitive, but do show the gross magnitude of inputs that are required to continue the development of the fisheries industry.

## LOP MAJOR INPUTS BY SOURCE ($,000's)

| MAJOR INPUT | SOURCE: AID | SEP | ACPM | IFAD | FAC | OTHER | REMARKS |
|---|---|---|---|---|---|---|---|
| I. PRODUCTION | | | | | | | |
| A. OBOCK PORT INPROVEMENTS | (50) | 550 | | | | | AID provided flake ice machine in 1981; port expansion delayed as SEP seeking support in funds to complete. |
| B. ARTISANAL FISHING VESSELS (45 UNITS) | | | 90 | 45 | | | IFAD provide 15 new boats to revolving fund and ACPM, through repayments, finance replacements of 30 boats. |
| C. FISH GEAR; MOTORS, SUPPLIES, ETC. | 60 | | 135 | 90 | | | IFAD provide 15 diesel inboards, ACPM finance 30 additional plus gear for new fishermen. AID test gear. |
| D. TRAINING 1. MATERIALS & EQUIPMENT | 81 | | | | | | AID equipment and materials for fishermen demonstrations and education exercises. |
| 2. MASTER FISHERMAN/TRAINER | 450 | | | | | | AID supplying master fisherman for LOP. Funding includes all support. |
| 3. YAMAHA VESSEL | | | 60 | | | | ACPM: Salaries for captain/crew (2) expenses self financed. |
| 4. IFAD VESSEL | | | 60 | 418 | | | IFAD: Master fisherman and operating expenses - also doing research ACPM: Captain/crew (2) |
| E. SPECIALIZED CONSULTANCIES (2 p.m.) AND COURSES | 127 | | | | | | Specialized studies and training will be funded by AID. |

## LOP MAJOR INPUTS BY SOURCE ($,000's)

| MAJOR INPUT | SOURCE | | | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | AID | SEP | ACPM | IFAD | FAC | OTHER | |
| II. FISH HANDLING/PROCESSING<br>A. FACILITIES | 60 | 25 | | 50 | | | AID provides offices and processing area renovation, IFAD funds retail outlet construction, SEP puts in washroom and bathroom. |
| B. STUDY OPERATIONS | 34 | | | | | | AID funds consultancies to improve work flow, establish storage, train staff and differentiate products. |
| C. STAFF | | 90 | 120 | | | | SEP and ACPM fund staffing requirements. |
| D. COOPERATIVE MANAGER | | | | | 300 | | FAC provides processing advisor, supervisor. |
| E. OPERATING EXPENSES | | 310 | 345 | | | | Electricity, water, refrigeration, repairs and facilities provided by SEP, operating expenses (no purchases) for ACPM. |
| III. BOAT CONSTRUCTION/EQUIP. REPAIRS<br>A. FACILITIES & EQUIPMENT | | | | 120 | | | Expansion of facilities to allow for diesel repair and maintenance required, as well as appropriate tools, by IFAD. |
| B. STAFF | | | | 650 | | | IFAD to provide workshop managers in mechanics and boat construction/repair. |
| C. OPERATING EXPENSES | | 45 | 120 | | | | SEP provides staff, as does ACPM and boat and motor spares and repairs. |
| D. OBACK PLANT | | 50 | | 60 | | | Construction of small repairshop by SEP workshop and equipment for it by IFAD. |

LOP MAJOR INPUTS BY SOURCE ($,000's)

| MAJOR INPUT | SOURCE | | | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | AID | SEP | ACPM | IFAD | FAC | OTHER | |
| IV. COOPERATIVE ADMINISTRATION<br>A. STAFF | | 36 | 36 | | | | ACPM provides manager, SEP provides director |
| B. COOPERATIVE MANAGER | 450 | | | | | | AID provides financial/general management advisor and support. |
| C. OFFICE SUPPLIES, EQUIPMENT | 25 | | 18 | | | | ACPM provides supplies, some replacements funded by AID. |
| D. VEHICLE REPLACEMENT | 15 | | | | | | One vehicle replaced by AID in Phase II. |
| E. STUDIES - CONSULTANCIES (2 p.m.) | 15 | | | | | | AID funding special consultancies into control systems, MGMT assistance. |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

## LOP MAJOR INPUTS BY SOURCE ($,000's)

| MAJOR INPUT | SOURCE: AID | SEP | ACPM | IFAD | FAC | OTHER | REMARKS |
|---|---|---|---|---|---|---|---|
| V. MARKETING | | | | | | | |
| A. STAFF | | | 54 | | | | ACPM provides marketing manager counterpart, and clerk for effort. |
| B. MARKETING MANAGER | 380 | | | | | | AID provides marketing manager for two years plus short-term assignments. |
| C. RETAIL OUTLETS (7) | | | | 42 | | | Seven additional retail outlets are constructed in Djibouti through IFAD funding. |
| D. VEHICLES (3 REPLACEMENT) | | | | 60 | | | Lorries for transport of fresh and frozen fish are replaced - one five ton and two 1.5 ton lorries - funded by IFAD. |
| E. PROMOTION | 36 | | C | | | 225 | AID provides some funding to assist wholesale marketing effort CRS-UNICEF continues campaign with consumers in poorer urban areas. |
| F. CONSULTANCIES (3 p.m.) | 22 | | | | | | Consultancies in packaging, specialized markets and export potential funded by AID. |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

## LOP MAJOR INPUTS BY SOURCE ($,000's)

| MAJOR INPUT | AID | SEP | ACPN | IFAD | FAC | OTHER | REMARKS |
|---|---|---|---|---|---|---|---|
| V. RESEARCH PLANNING<br>A. FISHERIES ECONOMIST & BIOLOGIST | 802 | | | | | | 5 person - years (plus short term 2 months) provided by AID and support for personnel. |
| B. STAFF | | 72 | | | | | SEP provides counterparts for fisheries biologist and for fisheries management/economist. |
| C. UNDP RED SEA PROJECT | | | | | | | UNDP Red Sea research effort continues in conjunction with AID/IFAD efforts. |
| D. RESEARCH VESSEL & LAB | (150)<br>15 | 154 | | | | | SEP operating expenses and staff for vessels, lab activity supported by AID. (150) ship provided by AID under Phase I. |
| E. FISHERIES STRATEGY STUDY | 22 | | | | | | Consultancies and special projects. |
| F. PROJECT EVALUATION/ASSESSMENT (2p.m.) | 32 | | | | | | A review is done after year 1 and an evaluation is done near the time of Phase II completion. |
| GROSS INPUTS | 2622 | 1332 | 1038 | 1485 | 300 | 225 | A 5% contingency is put on sub-total of all items. |
| CONTINGENCY 5% | 136 | 68 | 52 | 75 | 15 | 11 | |
| INFLATION | 240 | - | - | - | - | - | Total inputs for fisheries industry by institutions is estimated at $7,599,000 for the Phase II period. |
| GRAND TOTAL ESTIMATES | 2998 | 1400 | 1090 | 1560 | 315 | 236 | |

## E. PROJECT COST ESTIMATES

USAID FISHERIES PHASE II BUDGET

(shown in $,000's, initiation in mid 1984)

| SEP ASSISTANCE | YEAR 1 | YEAR 2 | YEAR 3 | TOTAL |
|---|---|---|---|---|
| 1. SEP Marine Econ./MGMT Expert | 40,000 | 40,000 | 40,000 | 120,000 |
| 2. Fisheries Biologist (2.py+2pm) | 40,000 | 40,000 | 22,000 | 102,000 |
| 3. Transport Effects + Storage for 2 families | 30,000 | 8,000 | 8,000 | 46,000 |
| 4. Allowances (Spouse + Children) | 108,000 | 116,000 | 54,000 | 278,000 |
| a. overseas school x 2 | (16,000) | (16,000) | (18,000) | (40,000) |
| b. R & R x 2 families | - 0 - | (8,000) | - 0 - | (8,000) |
| c. COLA (CLASS 35) x 2 | (12,000) | (12,000) | (6,000) | (30,000) |
| d. Differential (25%) x 2 | (20,000) | (20,000) | (10,000) | (50,000) |
| e. Housing Utilities x 2 | (60,000) | (60,000) | (30,000) | (150,000) |
| 5. Post Assignment x 2 | 8,000 | 4,000 | 4,000 | 16,000 |
| 6. Furniture/Appliances x 2 | 30,000 | - 0 - | - 0 - | 30,000 |
| 7. Overhead Contract (100% Salaries) | 80,000 | 80,000 | 50,000 | 210,000 |
| Sub-Total | 336,000 | 288,000 | 178,000 | 802,000 |
| **ACPM ASSISTANCE** | | | | |
| 8. MGMT/Finance Advisor | 40,000 | 40,000 | 40,000 | 120,000 |
| 9. Master Fisherman/Trainer | 40,000 | 40,000 | 40,000 | 120,000 |
| 10. Marketing Manager | 40,000 | 40,000 | 22,000 | 102,000 |
| 11. Transport Effects - as above for 3 | 45,000 | 8,000 | 16,000 | 64,000 |
| 12. Allowances - as above for 3 | 162,000 | 174,000 | 108,000 | 444,000 |
| 13. Post Assignment - as above for 3 | 12,000 | 4,000 | 8,000 | 24,000 |
| 14. Furniture/Appliances - as above f.3 | 45,000 | - 0 - | - 0 - | 45,000 |
| 15. Overhead Contract (100% Salaries) | 120,000 | 120,000 | 102,000 | 342,000 |
| Sub-Total | 504,000 | 426,000 | 336,000 | 1,266,000 |
| **SUPPORT/TRAINING** | | | | |
| 16. Specialized Courses/Studies | 35 | 35 | 35 | 105 |
| 17. Project Promotion Activities | 12 | 12 | 12 | 36 |
| 18. Consultancies (with 100% O.H.) | 73 | 41 | 29 | 123 |
| a. Fish Processing (1 p.m.) | (16) | - 0 - | - 0 - | (16) |
| b. Home office visits (2pw. per yr.) | (9) | (9) | (9) | (27) |
| c. Fisheries Progr. Develop. (2p.m.) | (16) | (16) | - 0 - | (32) |
| d. Training Plan Develop. (1p.m.) | (16) | - 0 - | - 0 - | (16) |
| e. Fish Research Program (1p.m.) | - 0 - | (16) | - 0 - | (16) |
| f. Specialized Production (1p.m.) | (16) | - 0 - | - 0 - | (16) |
| 19. Local Admin. Support | 18 | 18 | 18 | 54 |
| Sub-Total | 138 | 106 | 74 | 318 |

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Fisheries Phase II Budget (cont.)

| | YEAR 1 | YEAR 2 | YEAR 3 | TOTAL |
|---|---|---|---|---|
| **COMMODITIES** | | | | |
| 20. Plant Improvements (Off.,Processing) | 35 | 25 | - 0 - | 60 |
| 21. Experimental Gear/Equip., teaching materials | 15 | 15 | 15 | 45 |
| 22. Vehicle Replacement (1) | 15 | - 0 - | - 0 - | 15 |
| 23. Office Furniture/Equipment | 20 | 5 | - 0 - | 25 |
| 24. Laboratory Equipment | 10 | 5 | - 0 - | 15 |
| Sub-Total | 95 | 50 | 15 | 160 |
| **OTHERS** | | | | |
| 25. Review + Evaluation (1p.m.+O.H.) | 16 | - 0 - | 16 | 32 |
| 26. Home Office Support (3p.m.+O.H.) | 20 | 20 | 20 | 60 |
| 27. Contingency (5% for retail) outlets, boats, gear, etc..) | 55 | 45 | 32 | 132 |
| 28. Inflation (10% in year 1,20% in yr.2) | - 0 - | 94 | 134 | 228 |
| Sub-Total | 91 | 159 | 186 | 452 |
| Life of Project Total Costs | $1,164 | $1,029 | $805 | $2,998 |

F. SUMMARY OF ECONOMIC, FINANCIAL AND SOCIAL ANALYSES

1. Economic Analysis

The economic analysis of the project involved identifying costs and benefits of an integrated production, processing and marketing project, many components of which are partially underway in Phase I of the Project. Accordingly, in the situation which excludes Phase II inputs, certain fixed costs would still be incurred, e.g. operation of the existing plant at ACPM. The "with" Phase II input situation involves the more efficient usage of the existing plant, as well as additional expenses, e.g. extra ice-making capacity to handle larger volumes of fish.

The overall Phase II benefit/cost ratio, at a 10% discount rate, is 1.11. The overall internal rate of return (IRR) is 21.25%. These findings are reasonable and are quite conservative. The production levels (and revenue levels) are kept static after year three. However, the production is likely to continue increasing at least at the rate of population growth, so the benefit projections may understate the economic returns from the various activities shown.

As it is an integrated activity, the Phase II project involves not only an increase in the volume of the fish produced, but also a process which increases the value of the fish (i.e. quality improvements, changes in form, and changes in the location and time of sale). These later benefits must be valued as well as the value of increased fish production.

The method used was to estimate the incremental costs and revenues of the fishermen and the ACPM involved in producing, handling and marketing fish production above a base of 400t. (ACPM handled 298 tons in 1982 and it was assumed 400 tons would be handled in the 12 months prior to project start up). As the retail outlet operations are essentially new elements in the project, the total costs and revenues of the outlets are included. GROD and USAID contributions to the project, as well as expenditures by other donors directly related to project activities, were included in the cost assessment.

Analysis of the resulting cash flow indicates the project has a reasonable return, especially in light of the heavy costs of research, institution building, and training included in the project. The project is judged to be sound from an economic point of view. Further details of the basis for estimating the cost and benefits of the project and the results of the sensitivity analysis are described below.

A. Costs.

1. GROD - The contributions of the GROD are taken from the assessment of their budget set forth in Section I.C. The costs include development of the facilities at Obock, contributions to the ACPM, as well as GROD personnel and other costs involved in the research activity. As the ACPM reimburses the Service des Elevages et Peche (SEP) for certain expenses, and the retail outlets will be paying rent to SEP, those amounts were subtracted from the government contribution and the net figure was used for the cost analysis.

2. USAID - USAID costs are those included in the project budget net of inflation costs and were applied in the year of expenditure (rather than the year of obligation).

3. Other Donors - Other donor costs are speculative as they will depend on decisions to be made by several organizations at different points in time. Accordingly, they could not be estimated with precision, and the figures given are order of magnitude rather than actuals.

It was assumed that FAC would provide one person a year to assist in ACPM management/fish handling operations at a cost of $100,000 per year. IFAD has indicated it will continue to support fisheries in Djibouti and it was estimated they would provide two persons per year for the three years of the project at a cost of $100,000 each. One person would be involved in project operations and the other in the boat and engine repair yard. In addition, IFAD would provide $40,000 per year for boats and equipment and $24,000 in year one and $18,000 in year 2 for construction of the retail outlets. The personnel and running expenses of the IFAD vessel were not included in the costs. Although the vessel will make some inputs to project activities, particularly to the research effort, its principal focus on activities such as experimentation with purse seining for sardines. The results of these experiments will be applied in a different type of production effort from that supported by the Phase II project.

UNICEF has currently agreed to support the CRS fish promotion/demonstration program through 1985. It has been assumed that their support will continue throughout the life of the project at the same level (that is $75,000 in year one, and $70,000 in each of years two and three).

4. Fishermen - The fishermen's "without" Phase II project costs were based on the Fishermen's Expenditure Estimates (see Annex E). Those estimates assume average catch per landing will have increased to 120 kilos by the date the project commences. A "without" project cost of producing 400 tons was constructed (Annex E), which included both the captain's and crew's share as labor expenses. This figure of approximately $75 per landing was used as the opportunity cost for labor in the "with" Phase II project assistance situation. The captain's and crew's incomes will be increasing but those are properly considered to be benefits rather than costs. Incremental cost increases resulted from increased numbers of boats, increases in landings, changes in motors, increased bait and ice usage, etc.

5. ACPM Costs - ACPM's projected Incremental Income and Expenditure is set forth in Annex E No fixed costs are included in the "with" project situation as those would be incurred "without" project also. The more productive use of facilities is properly a project benefit.

6. Retail Outlets - The Retail Outlet Expenditure Estimates are in Annex E Both variable and fixed costs were included in the cost estimates as some of the outlets will be starting up in the year before project inception and others during the project. In addition, a labor opportunity cost of 300,000 FD per year for the owner was applied (this is the estimated return of a petty trader), when the shop is handling 10 tons per year, and an additional employee costing 210,000 FD (the minimum wage) when the shop is handling 20 tons of fish per year was also applied.

B. Benefits

1. Fishermen's Incomes - The fishermen's increased revenues are from sales of 135 MT of fish in year one, 270 MT of fish in year two, and 400

MT of fish in year three. The price of fish used is an average price paid to fishermen of FD 250 per kilo (currently at about DF 230 per kilo, but variable).

2. ACPM - ACPM's incremental income will arise from several sources. The prices used for estimating revenues were a sales price of DF 400 for wholesale fish sales and DF 500 for retail sales. This is the expected level of ACPM adjustment in sales prices to occur later this year.

Prices at the ACPM are controlled by the GROD and are substantially lower than those prevailing in the open market (750-1000 FD per kilo). However, Djibouti's prices are distorted by the heavy dependence on imports, and it was not known how prices will be affected by increased production. Until more facts are known, it was judged more prudent to utilize the lower controlled retail price (which also gives a truer picture of the state of ACPM finances).

3. Retail Outlets - Retail outlets incomes have been estimated for the selling of fish at an average price of 600 FD per kilo. They are expected to market 200 tons in year 1 of the project; 270 tons in year 2 and 300 tons in year three. Again, the price of 600 FD may be changed and may increase further towards the current market price.

C. Sensitivity Analysis

1. Sensitivity analysis has been run to determine the effects of a cost overrun of 10%, a benefit shortfall of 10%, and a combination of the two. In the first case, project IRR was reduced to 14%, in the second to 13%, and in the combined case, to 6%.

2. Financial Analysis

Financial analysis of Phase II maintains many components found in the economic analysis, but reflects market prices (of goods and labor) and does not include the costs of the GROD for support of the fisheries industry nor the cost of assistance directly provided by donors. Benefits and costs to fishermen, ACPM and retailers are analyzed. Details can be found in Annex E/2.

Fishermen's net incomes (boat owner/captains) increases from a base of DF 292,400 or $1670 per annum to DF 811,800 or $4,640 by year three of the project. Average crew income increases from DF 155,600 or $889 per member in the base year to DF 290,000 or $1,657 in year three. The benefit cost ratio for the owner/captain increases from a B/C ratio of 1.25 in the base year to a B/C ratio of 1.55 in year three of the project.

The net income of the ACPM increases from a historical base of DF 21,814,000 (annualized from the period 1/1/83-30/6/83) or $124,654 per annum to DF 62,792,000 or $358,811 by year three of the project. The benefit/cost ratio for the ACPM increases from a B/C ratio of 1.09 in the base year to a B/C ratio of 1.44 in year three of the project.

Retail outlet owner/operators have no income derived from the neighborhood fish stores in the base year, as they are not yet all operational (stores are being opened between June and September 1983). Additional units will be opening during the Phase II period and all should be fully operational by year three. By year three the net income per store (there should be 15 stores open in Djibouti), is projected at DF 2,792,000 or $15,954 per annum. On costs of DF 9,208,000 per store, the benefit/cost ratio is projected at 1.30 in year three. However, better GROD controls and surcharges on sales to retail outlets are expected to reduce net incomes to levels earned by other such businesses, e.g., $5-10,000 per annum.

The improvements for the individual fisherman, the ACPM, and the retail outlet operators are major and dramatic. The economic return to the society from the project is much less so, as all funding and costs are shown. If the individuals affected were required to bear total funding requirements, the returns would be marginal. Yet for these individuals, and thus, a large proportion of the people involved in the fisheries industry, the returns from increased activities are significant and very rapidly achieved.

3. Social Analysis

The Phase II project can achieve its desired goals of increasing fish production and consumption only with the active participation of Djiboutian fishermen and consumers. The social analysis considered the cultural and socio-economic factors affecting the two groups and attempted to identify the project elements and approach which would be most effective. The results of the analysis are incorporated in the project design.

This section of the paper summarizes the information collected and the results of the analysis. A more detailed presentation of the material is contained in Annex F.

a. Socio-Cultural Background

The fishery in Djibouti is not typical of fisheries found in most parts of the world. During the 19th Century, a small number of formerly nomadic Afars began fishing with Arabs (mainly Yemenis) who arrived on the Djibouti coast. Production of fish was for their own consumption or for export. Afars and Issas in the hinterland continued to practice a nomadic life based on sheep and goats. Their diet was principally milk, with some sorghum and occasionally meat. Fish was not consumed by them.

As a result, the normal complex relationships between fishermen and fish merchants did not develop to any extent. A few individuals began to market fish in the years after World War II when Djibouti City grew rapidly. Their activities were not embedded in the social structure surrounding fishing and fishermen's families were not involved to any extent in fish marketing. As a result, it was comparatively easy for the fishermen's cooperative (the ACPM re-established in 1980) to assume a major role in purchasing fish from fishermen and marketing fish to both wholesale and retail customers.

The fishermen responsed to the availability of new equipment provided through the ACPM's revolving credit fund and the availability of a guaranteed market for fish with rapidly increased production. To date, demand has stayed ahead of supply. However, for reasons set out in the problem identification section of the paper, it is desirable to rapidly expand both production and consumption of fish. Over the three years of the Phase II project, annual Djiboutian production is to increase from approximately 600 tons per annum to 1200 tons and the amount handled by the ACPM is to double from 400 to 800 tons.

The questions considered in the social analysis were whether these production aims could be achieved by the artisanal fishing fleet in Djibouti, and if achieved, whether the expanded production would be purchased by Djiboutians. A description of the high rate of urbanization in Djibouti is given, as this will have an impact on the answer to these questions. Socio-economic data on the city dwellers is also provided as a background to the separate discussions of the fishermen and fish consumers which concludes the background section.

Although social characteristics derived from the nomadic/pastoral way of life are still highly important to Djibouti (e.g. preferences for meat, acceptance of social obligations for inter-aid within tribal groups), they are heavily affected by the high rate of urbanization. Some 65% of the population lives in Djibouti City itself and most of these residents have been living in the city for more than a decade. Another 10% or so live a settle existence in the countryside, and only 20-25% of the population continues to be nomadic. Most of the fishermen and most of the fish consumers live in Djibouti City.

The cost of living in Djibouti City is extremely high by Third World standards. A recent study carried out in the feasibility stage of a proposed World Bank urban development project found that an income of $457 per annum was necessary to maintain an individual at the absolute poverty line. As a result, the average Djiboutian household of six individuals requires an annual income of approximately $2750 just to maintain itself at the absolute poverty line. Most of this income is required for expenditures on food, as Djiboutian city dwellers do not have the means to produce any portion of their food nor can relatives in the hinterland assist them.

Data on the distribution of incomes in Djibouti City (see Table 1, Annex F) indicates that 30% of the inhabitants are living below the absolute poverty line and many others are close to that level. In addition, information on expenditure patterns indicates that, as purchases of other consumption items take a significant portion of total expenditures, income considerably above the absolute poverty line is required to assure an adequate diet for the family (see Table II, Annex F). There are also significant differences in the income levels of the various neighborhoods in Djibouti City and in general the levels of income fall the further one moves from the center of the city.

There are an estimated 260 fishermen in Djibouti, coming from approximately 210 households (two or more members of the same household, e.g. father and adolescent son are fishing together in some cases). A few important fishing families have grandfathers, their sons and grandsons involved in fishing; the balance of fishermen come largely from unrelated households. Approximately 20 households of fishermen live in Obock, two to three households live in Tadjoura and the balance are based in Djibouti City.

Analysis of access to fishing resources, boats, engines, etc., indicates that ownership is not concentrated in the hands of a few individuals. Instead most owners have only one boat, and are themselves involved in fishing. Fishing techniques are very simple, consisting of the use of hand lines and the limited use of nets. These methods result in low productivity per fishing trip and an average landing of between 100-120 kilos of fish.

Data on size of deliveries, number of deliveries made per month, cost of fishing, etc. were collected during the project design, as well as information on the usual method of dividing the catch. The latter was reported to be the "Arabic" formula, i.e. the running costs are deducted from the value of the catch and the remainder is divided in three parts: one for the boat to cover fixed costs, one for the owner and one for the crew. The division is made in terms of money and not by physically dividing the catch.

Analysis of the data indicated that the crew share per annum was on the order of FD 300,000 ($1,714) which is not sufficient to maintain two households at the poverty line. The owner receives the shares for himself and the boat and will not have sufficient income to meet his household needs unless he spends the portion which should be reserved to cover maintenance and the fixed costs of the boat. These facts help to explain the reported increase in boat owners fishing alone when they have no household members to fish with them.

Fishermen have shown themselves to be willing to accept and pay for new equipment; an example is the rapid acceptance of outboard motors which were introduced in the 1950's and have almost completely replaced the use of sails. Fishermen have demonstrated a strong production response to the Phase I project and are keenly interested in improving their incomes. Further production increases will require more fishing trips per month and/or more productivity per trip. Although both will be required, the latter is preferable given the cost of fuel for the outboard engines. The project implementation team will have to identify and demonstrate new, more productive techniques to the fishermen, and fishermen will have to accept and employ these techniques if the project targets and rate of return are to be fully achieved.

Information on the sales points and price of fish were collected during project design, and complemented by a household survey in areas around five of the new retail outlets (these latter were not open at the time of the survey). Interviews were also carried out in the central market, with retail customers at the ACPM, and with wholesale customers. These interviews indicated that a high percentage of households (75%) were already consuming fish, and that taste rather than price was the motive for eating fish. The high percentage reporting fish consumption is surprising given that there were only five sales outlets for fish, all located in the center of the city. The lack of price motivation is understandable, as the central market and the supermarkets all charge prices for fish which are comparable to meat prices; only the ACPM prices are significantly lower than the price of meat.

There are indications in the household survey that increased income may favor increased fish consumption. It appears that the sample was somewhat biased to middle class consumers (given the large numbers who owned such items as TV sets, and a higher than average level of education) and it is possible this was a factor in the high percentage reporting fish consumption. However, other considerations also favor fish consumption, i.e. all interviewees in one poorer area (which was primarily Afar) reported eating fish though amounts purchased per meal were lower.

It is clear from the information that significant numbers of households already consume fish despite difficulty of access. These facts provide evidence that the Djiboutian population has been affected by the urban life style and the consumption habits of Europeans and Arabs living in the city. Fish is definitely not excluded from the menu.

Eight retail outlets are now open and seven more will open during the Phase II project. Continuous efforts on the part of the marketing advisor and his colleagues will be required to ensure these outlets operate effectively and charge reasonable prices. Success in this area should ensure rapid growth in consumer purchases of fish given the progress which has been made already.

b. Beneficiaries

The direct beneficiaries of the project are the 260 fishermen, the individuals who have on-shore jobs related to fish handling and supplying the fish industry (an additional 250-200 people) and the families of these two groups. As the average number of persons per household in Djibouti is six, the direct beneficiaries of the project include approximately 3060 people. The individuals involved in on-shore fishery jobs are discussed in Annex F.

The indirect beneficiaries of the project are the consumers who will have access to a lower cost, locally produced protein food. By the end of the project, it is estimated that these indirect beneficiaries will include approximately 120,000 individuals living in 20,000 households who will be eating (on average) two meals with fish per month. A second catagory of consumers are the organizations/businesses who purchase fish wholesale from the ACPM. Certain of these use fish in feeding programs for needy persons (WFP and CRS), the balance benefit from a source of fresh fish to include in the meals they provide to employees, hospital patients, customers, etc.

c. Socio-Cultural Feasibility

Analysis of the socio-cultural feasibility of the project identified three areas for particular attention. These are:

1. The adoption by fishermen of new production techniques will be required to achieve the project targets. A related area is the training for employees handling fish in the ACPM (use of better techniques, e.g. for filleting fish) is also required to increase yields and employee productivity.

2. The impact of introducing new technology to the fishing community.

3. The requirement to make fish available to poor consumers at lower prices and at points closer to their homes.

The analysis concluded that Item 2 was not an issue as the type of technology to be transferred is unlikely to have negative social impact given the characteristics of the Djiboutian fishery. Items 1 and 3 can be effectively managed by the ACPM and the project team. Annex F provides a full discussion of these matters and also covers the questions of participation, project impact and issues.

## III. PROJECT ADMINISTRATION

### A. ADMINISTRATION AND COORDINATION

Due to the small size of AID/Djibouti and demands of this project activities, heavy reliance on the contractor by the Mission will be necessary. Past experience has shown that considerable administrative time and facilities were required from AID. To avoid unnecessary burdens, the contractor has been authorized to procure all commodities required under the Project agreement. Also provision is made for the contractor to hire locally project support assistant and a secretary/typist for the life of the project. These staff will handle administrative matters and communications for the contractors' team of personnel.

The team leader for the technical assistance group, to be the marine economist/management expert working with the SEP Director, will be the liaison person between the contractor and the AID mission. This person is required to submit quarterly reports on work performed and the work to be done in the following period. It is expected that less formal contacts will be made with some frequency.

Contracting will be performed by the Regional Contract Officer, based with the Regional Economic Development Support Office (REDSO/ESA) in Nairobi, Kenya. Financial payments and fiscal matters will be handled by the Regional Financial Management Center (RFMC), also based in Nairobi, Kenya. Any legal matters will be handled by the Regional Legal Affairs Office, REDSO/ESA. All communications on these matters will be channeled through AID/Djibouti.

### B. MONITORING AND EVALUATION

Critical monitoring activities on the part of AID/Djibouti must include reviews that appropriate progress is being made by the technical assistance personnel in fulfilling the tasks laid out in the Project Agreement. The critical tasks include:

1. Formulation and performance of gear and method testing by the masterfisherman.
2. Formulation and implementation of the fisherman training program.
3. Adoption and implementation of research and exploratory fishing activities.
4. Installation of accounting systems and generation of financial statements, with appropriate analyses.
5. Formulation and initiation of a processing work flow system.
6. Design and implementation of a marketing system/program.
7. Formulation of data, information requirements required to design national fisheries industry program.
8. Design and implementation of the national fisheries program.

To monitor progress, the AID mission must visit the Project sites, review quarterly project reports and plans, and discuss the progress with other donors, the contractor and GROD officials.

To also assist in this on-going effort, a review of progress is scheduled upon completion of year 1. This review should be performed with external expert assistance and is funded through the project. The review should look at the critical tasks, evaluate performance, and make extensive

recommendations if required. Such recommendations may include procedures for expansion, curtailment, alteration, or simple continuation of the various elements of the project.

Near the end of year 3 an external evaluation is scheduled. Also funded through the project, this evaluation should review the entire activity, assess progress made, determine which elements were successful (or that failed) and determine why. At that time the evaluation should also help determine whether further assistance should be made to the fisheries industry by USAID and, if so, what form it might take.

C. IMPLEMENTATION PLAN

The progress and improvements projected in Phase II are predicated on timely assistance by USAID, on continued support from IFAD, and on continual participation by the GROD. USAID assistance under Phase II is required to overlap with the technical assistance people who are now playing active managerial roles and it is expected that (temporarily) the Phase II personnel at the ACPM replace technical assistance personnel provided presently. Additionally, the wealth of experience of current technical assistance personnel should be shared and would contribute greatly to progress in Phase II. Without an overlap, it is unlikely that appropriate communications will take place between contract personnel.

Therefore, the following implementation plan incorporates activities of other donors, the Djiboutian Government, USAID and the contractor. Dates during the first year shown are considered crucial, whereas thereafter they are not so critical.

| ACTIVITY | ACTORS | DATES |
|---|---|---|
| Project Paper Review/Approval | AID/W | 11/83 |
| PIO/T Drafted and Project Agreement signed | Contractor, REDSO, AID/D GROD | 12/83 |
| RFTP Issued | AID/W | 01/84 |
| IFAD Contract Renewed | IFAD, GROD | 2/84 |
| Contractor Bids received, evaluated | REDSO, AID/D, GROD | 3/84 |
| Contractor Selected | REDSO, AID/D, GROD | 3/84 |
| Project Agreement signed | Contractor, REDSO, AID/D GROD | 4/84 |
| TA staff arrive Djibouti | Contractor | 6/84 |
| Required Gear, Equip. ordered | Contractor | 7/84 |
| Phase I Project completed | RDA, AID/D, GRO | 8/84 |
| Gear, Equip. received | Contractor | 8/84 |
| Research, Testing initiated | GROD, Contractor | 8/84 |
| Marketing System Designed | GROD, Contractor, ACPM | 8/84 |
| Formulation of Requirements for national fisheries program | GROD, Contractor | 8/84 |
| Formulation of plan for improved work flow, office construction | GROD, Contractor, ACPM | 9/84 |
| 1st quarterly report submitted | Contractor, AID/D | 9/84 |
| Initiation of Fishermen staff training | Contractor, ACPM | 1st qtr.85 |

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| | | |
|---|---|---|
| Research program in full operation | Contractor, GROD | " " " |
| Marketing System initiated | Contractor, GRO, ACPM | " " " |
| Systems installation at ACPM | Contractor, ACPM | " " " |
| Initiation of work flow changes at ACPM | Contractor, ACPM | " " " |
| Third quarterly report submitted | Contractor, ACPM | " " " |
| IFAD Construction of outlets started | IFAD, GROD | 2nd qtr.85 |
| Cbock Plant fully operational | GROD, IFAD, AID/D,ACPM | " " " |
| 4th quarterly report submitted | Contractor, AID/D | " " " |
| Formulation of National Policy initiated | Contractor, GROD | " " " |
| Progress Review on Phase II | Consultants, AID/D REDSO | 3rd qtr.85 |
| Production at ACPM averages over 44 tons per month | Fishermen, ACPM, Contractor | " " " |
| CRS - UNICEF Food Project renewed | CRS, UNICEF, GROD | " " " |
| IFAD funded retail outlets complete | IFAD, GROD, ACPM | 4th qtr. 85 |
| National Fisheries Policy, Program drafted | Contractor, GROD | " " " |
| Full operation of marketing, processing, management systems | Contractor, ACPM, GROD | " " " |
| 7th quarterly report submitted | Contractor, AID/D | 1st qtr. 86 |
| Full-time marketing, research tech--nical assistance personnel depart | Contractor | 3rd qtr. 86 |
| 9th quarterly report submitted | Contractor, AID/D | " " " |
| Production of ACPM averages over 55 tons per month | Contractor, ACPM, GROD | " " " |
| Evaluation of Phase II performed | Consultant,REDSO,AID/D | 1st qtr. 87 |
| Training Programs are finalized | Fishermen, Contractor ACPM | " " " |
| All operations handled over to counterparts | Contractor, ACPM, GROD | " " " |
| Production of ACPM averages over 66 tons per month | Contractor, ACPM, GROD | 2nd qtr.87 |
| Phase II Project period is completed, contract personnel depart | Contractor | " " " |

D. CONDITIONS/COVENANTS/NEGOTIATING STATUS

There will be no special conditions precedent required under the project.

Covenant - During the period of Phase II, the GROD agrees to provide the following:

a. The GROD will provide the personnel required to operate the research vessel and, if required, funding to cover all operating expenses of the research/exploratory program.

b. The GROD agrees that the primary purpose of the AID research vessel is to provide data and information required to determine proper fishing practices in Djiboutian waters and the primary task of the "Yamaha" vessel and

master fisherman is to both demonstrate fishing gear and methods to fishermen and to be used for training of fishing crew and new participants.

c. The GROD will assure provision of qualified counterpart personnel for the positions of master fisherman, marketing manager (ACRM) and fisheries biologist by the arrival of the technical assistance personnel.

d. The GROD agrees that the facilities used by and privileges provided to, the ACRM, will remain in force.

e. The GROD will allow prices charged by the ACRM to reflect actual costs and allow a reasonable profit for the ACRM and its members.

f. The GROD will provide office space and support for the marine economist/management expert and fisheries/biologist.

g. The GROD will ensure adequate management and pricing controls are in place so no more than a fair profit will be earned by operators of GROD-furnished retail sales outlets.

E. WAIVERS

The commodities to be purchased by the contractor include both construction and adaption of facilities at the ACRM and certain materials needed to carry out the tasks included in Phase II. The commodities to be purchased will include, but not be limited to, the following:

1. Offices - Offices for the marketing manager and staff and for the fisheries biologist and staff.

2. Processing - Alterations of the wholesale processing areas and the construction of a retail sales outlet for the ACRM.

3. Fishermen Training - Hooks, lines, nets, traps, reels, winches, engine, and other equipment and gear as required for testing of the same and training of experienced and new participants in fishing.

4. Staff Training - Materials, including consumables, audio visual aids, supplies mini-computer and peripherals as required for training in management systems.

5. Laboratory Equipment - Such paraphenalia as required by the fisheries biologist and staff to carry out research and exploratory activities.

6. Vehicle - Replacement for one vehicle currently being used by Phase I technical assistance personnel.

7. Office Furniture and Equipment - Such furniture and office equipment deemed necessary to equip technical assistance offices.

Requested is a waiver to CODE 935 sources for the above materials listed in items 3-7 all to be contracted for and purchased by the contractor, waiver requests are included as Annex J.

Waivers are not required for construction of facilities (items 1 and 2) or for some shelf items shown.

F. CONTRACTING CONSIDERATIONS

The tasks and requirements of Phase II demand very specific skills, both from an organization and from technical assistance personnel. The variety of personnel required for successful performance will make it apparent that any contractor will need to initiate an expansion of staff to secure all skills. A private firm and/or consortium may be best equipped to meet these diverse requirements, especially in terms of the development of the ACRM as an independent organization and the expansion of privately operated retail sales outlets.

These skills include research, management, marketing, fisheries extension, and policy planning. Although all these skills are involved with the fisheries industries, it is deemed inappropriate that invitations for bids

be limited to small businesses or to universities only. Therefore it is deemed appropriate for bidding to be completely open to all applicants.

It may be appropriate that the contractor sub-contract certain tasks, such as the research component to a governmental body or that fisherman demonstrations and training activities for crew and new participants be sub-contracted to a state fisheries extension service. This consideration and the required administrative support may necessitate the use of a larger, multifaceted private organization.

G. Environmental Considerations

The research/exploratory fishing program should be reviewed by the Regional Environmental Officer (at REDSO/ESA) before it is initiated. As earlier discussed in the I.E.E., the ideas and suggestions for research and control were put forward in the original Environmental Assessment for Phase I. The program therefore is part of a continuation process of assessment of the catch, e.g. potential yields, seasonality, locale, etc. all of which bear on the proper, ecologically sound management of the fisheries resource base of Djibouti.

The I.E.E. performed for Phase I (603-0003) has been considered adequate to continue the work in Phase II. Approval of the Phase II PII constituted approval of the waiver for performance of a new I.E.E.

# IV ANNEXES

A. GOVERNMENT OF DJIBOUTI LETTER OF REQUEST FOR ASSISTANCE

B. PID APPROVAL MESSAGE

C. LOGICAL FRAMEWORK MATRIX

D. TECHNICAL ASSISTANCE SCOPES OF WORK

E. ECONOMIC AND FINANCIAL ANALYSES

F. SOCIAL SOUNDNESS ANALYSIS

G. ACPM HISTORICAL INCOME AND EXPENDITURE STATEMENTS

H. ACPM PRODUCTION STATISTICS

I. TRAINING MATRIX

J. WAIVERS

K. STATUTORY CHECKLIST

INCOMING TELEGRAM — AMEMBASSY NAIROBI — USAID FILE CODE

UNCLASSIFIED

ACTION REDSO

INFO

DIR

D/DIR

REDSO

RHUDO

RIG/A

RIG/II

PROG

REMC

AGR

IMP

PRJ

EXO

ISO

PER

RF

CHRON

CSP

ENG

PCN

ECON

CPU

TOTAL 11

DATE REC'D 5-27

DATE DUE 6-6

ACTION TAKEN

INITIALS

DATE

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OO RUEHNR
DE RUEHEC #7965 1470127
ZNR UUUUU ZZH
O R 2722212Z MAY 83
FM SECSTATE WASHDC
TO RUQMDJ/AMEMBASSY DJIBOUTI IMMEDIATE 9510
RUEHNR/AMEMBASSY NAIROBI 3935
INFO RUEHRO/AMEMBASSY ROME 6966
BT
UNCLAS STATE 147965

ANNEX B

LOC: DIST
27 MAY 83
CN: 17225
CHRG: AID
DIST: AID

AIDAC, NAIROBI FOR REDSO/ESA

E.O. 12356: N/A
TAGS:
SUBJECT: DJIBOUTI FISHERIES DEVELOPMENT II PID 683-0215
AND PP DEVELOPMENT

REF: A. DJIBOUTI 1232 B. STATE 113833 (NOTAL)
C. DJIBOUTI 1076 D. DJIBOUTI 1076
E. NAIROBI 13542(NOTAL) F. NAIROBI 13588
G. STATE 88168 H. DJIBOUTI 1129

1. AFTER CAREFUL REVIEW OF REFS C; AND(E) IN RESPONSE TO REF B,, THE AFRICA BUREAU APPROVES THE PID ON CONDITION THAT THE PP BE SUBMITTED TO AID/W FOR REVIEW AND APPROVAL. THIS DECISION REACHED AS A RESULT OF CONCLUDING THAT BASIC AID/W CONCERNS ON THE PID HAVE BEEN ADDRESSED BY REFS C AND (E)AND AID/W REVIEW OF REFTELS AS FOLLOWS:

A. THE CONCERN THAT THE CONCEPTUAL FRAMEWORK OF THE PROJECT SHOULD IDENTIFY AND PRIORITIZE CONSTRAINTS TO INCREASING THE EXPLOITATION OF MISSING RESOURCES AND RELATING PROJECT INPUTS/OUTPUTS TO ADDRESSING THESE CONSTRAINTS HAS BEEN ANSWERED BY REF C; PARA 2.

B. THE CONCERN THAT THE COST PER BENEFICIARY IS HIGH CAN BE ADDRESSED BY MORE ACCURATELY ASSESSING THE NUMBER OF PROJECT BENEFICIARIES, PER REFTEL C PARA AND REFTEL E, PARA 4.

C. THE CONCERNS REGARDING SECTORAL ABSORPTIVE CAPACITY AND ASSISTANCE TARGETING CAN BE DEALT WITH IN THE PROPOSED FAO SECTORAL PLAN PER REF D; AND IN THE UPCOMING AES/CDSS.

D. WITH THE FAO SOCIO-ECONOMIC STUDY CURRENTLY BEING COMPLETED AND THE PROPOSED FAO SECTOR PLAN PER REF D,, THERE SHOULD BE SUFFICIENT INFORMATION AVAILABLE TO TECHNICALLY ADDRESS ECONOMIC, SOCIAL, AND TECHNICAL CONCERNS IN THE PP.

E. SUBJECT PROJECT COMMITTEE REQUESTS THAT AAO AMUNDSON PLAN TO COMMER WITH COMMITTEE MEMBERS M. PIASE

RECEIVED 27 MAY 1983 OFFICE OF

Best Available Document

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S AND T/AGRI,, A. REED AIR/PD/RAP;, AND R. HOLMES AND M. MOVINS AIR/IP/ARD DURING JUNE AID/W TDY FOR ABS REVIEW TO ADD SUMMARY STATEMENT ON ABOVE TO PROJECT FILES.

2. PER REF D, AND PROPOSED USE OF FAO PERSONNEL FOR PP DESIGN, AID/W APPROVES OF OPPORTUNITY TO DEVELOP SECTOR PLAN FOR FISHERIES RESOURCES IN DJIBOUTI AND RECOMMENDS THAT FAO PROCEED WITH DEVELOPMENT OF SECTOR PLAN. THIS WILL BE PARTICULARLY USEFUL FOR DESIGN OF PP. HOWEVER, AID/W ALSO RECOMMENDS THAT PP BE DEVELOPED ALONG LINES OF DRAFT PIO/T SUBMITTED TO N. PEASE, S AND T/AGRI, CALLING FOR USE OF NOAA/NMFS PERSONNEL IN SEPTEMBER. NMFS PERSONNEL CITED IN REF G WERE HIGHLY RECOMMENDED ON THE BASIS OF THEIR SUPERIOR TECHNICAL CAPABILITIES IN THE FISHERIES SECTOR, EXTENSIVE AFRICAN AND OTHER LDC EXPERIENCE, AND THEIR ABILITY TO PRODUCE REQUIRED INPUTS FOR PP. THIS SCHEDULING WOULD ALLOW DEVELOPMENT OF THE SECTOR PLAN/STRATEGY AND REVIEW OF SAME BEFORE DESIGN OF THE PP RATHER THAN TRYING TO DO BOTH CONCURRENTLY.

A. IF FAO EFFORT TO DEVELOP SECTOR PLAN CAN BE CARRIED OUT PER REF D; AND PP TO BE DONE BY HARRIS AND NOAA/NMFS TEAM, SUGGEST OVERLAP BETWEEN 2 TEAMS BE ARRANGED IN ORDER TO FACILITATE REVIEW OF STRATEGY BEFORE PP DESIGN. REF A, INDICATES THAT AAO AGREES TO ENGAGE DEVELOPMENT ECONOMIST/SOCIOLOGIST BRYSON QUOTE AS WELL END QUOTE. AID/W ASSUMES FROM REFS, A,,(F) E; THAT AAO MEANS BRYSON AS WELL AS ECONOMIST WALTER AND ANTHROPOLOGIST BJORKLAND. IF THIS IS THE CASE, SUGGEST WALTER AND BJORKLAND REMAIN SCHEDULED TO WORK WITH FAO SECTOR STRATEGY TEAM AND BRYSON BE AVAILABLE TO WORK ON PP WITH HARRIS AND NMFS TEAM. THIS PP DESIGN SCHEDULE FOLLOWING SECTOR STRATEGY DEVELOPMENT, RATHER THAN BEING CONCURRENT WITH IT, WILL ALSO REQUIRE HARRIS CHANGING THE TIME OF HIS AVAILABILITY AS PDO.

B. NORM PEASE OF S AND T/AGRI DOES NOT SEE NECESSITY FOR HIS INVOLVEMENT IN PP DESIGN WITH NMFS TEAM, UNLESS AAO SEES SPECIFIC NEED.

C. WHILE REF D; MENTIONED LACK OF FRENCH CAPABILITY OF NMFS TEAM, IT ALSO MENTIONED AVAILABILITY OF TRANSLATION SERVICES WHICH PRESUMABLY COULD BE AVAILABLE FOR NMFS PERSONNEL, IF REQUIRED.

3. REQUEST AAO AND REDSO CONCURRENCE WITH ABOVE APPROACH TO SECTOR PLAN DEVELOPMENT AND PP DESIGN. IN ACCORDANCE WITH THIS, AAO REQUESTED TO FINALIZE PIO/T FOR NOAA/NMFS PASA FOR DESIGN EFFORT AND PROVIDE FISCAL DATA. DAM

EP
47985

NNNN

AID 1330-24 (10-79)
SUPPLEMENT 1

# LOGICAL FRAMEWORK

(INSTRUCTION: THIS IS AN OPTIONAL FORM WHICH CAN BE USED AS AN AID TO ORGANIZING DATA FOR THE PAR REPORT. IT NEED NOT BE RETAINED OR SUBMITTED.)

Total U.S. Funding $2,999,000
Date Prepared: October, 1983

Project Title & Number: Djibouti Fisheries Development Phase II (603-0015)

PAGE 1

| NARRATIVE SUMMARY | OBJECTIVELY VERIFIABLE INDICATORS | MEANS OF VERIFICATION | IMPORTANT ASSUMPTIONS |
|---|---|---|---|
| Program or Sector Goal: The broader objective to which this project contributes: | Measures of Goal Achievement: | | Assumptions for achieving goal targets: |
| Full utilization of local marine resources conducive to a stable resource base by: 1. increasing fishermen's income, 2. increase ACPM profitability and ability to serve members and clients, 3. improve marketing of seafood products to reach all potential customers, and 4. improve the SEP so that the institution can better support the fisheries industry as a whole. | An increase of marine product sales to a level of 800 tons processed and sold by the ACPM, with 300 tons of the total sold by the ACPM to retail outlet operators. | -ACPM financial and production records<br>-National fish production and consumption statistics | -Consumers will be responsive to promotion campaigns and will have access to marine products.<br>-Fish production levels are sustainable with improved artisanal equipment and gear.<br>-GROD maintains strong support of artisanal fishing and local consumption. |

ANNEX C

LOGICAL FRAMEWORK

Project Title & Number: Djibouti Fisheries Development II (603-0015)

Total U.S. Funding: $2,998,000
Date Prepared: Oct., 1981



| NARRATIVE SUMMARY | OBJECTIVELY VERIFIABLE INDICATORS | MEANS OF VERIFICATION | IMPORTANT ASSUMPTIONS |
|---|---|---|---|
| Project Purpose: | Conditions that will indicate purpose has been achieved: End of project status. | | Assumptions for achieving purpose: |
| 1. Additional fishermen will join fishing fleet, labor requirement per catch will decline, and fishermen's lives will improve.<br>2. Use of fishing resources will expand and benefits to ACPM members and clients will increase.<br>3. Local seafood consumption will increase, number of people served will grow, and private enterprise will be promoted.<br>4. Capability in the SEP to support the fisheries industry will be strengthened.<br>5. Project will work towards a more independent, self-sufficient ACPM. | 1. Fleet will consist of about 85 boats, supporting 300 fishermen, with an average landing of 190 kilos per boat.<br>2. Total annualized production will be about 800 tons sold through the ACPM.<br>3. Local retail outlets will total 15 and will market about 300 tons per year to local customers.<br>4. The SEP will design and implement a program which appropriately serves the whole fisheries industry.<br>5. The ACPM will assume more responsibility for staff salaries, equipment replacement, and reduces dependence on SEP and donors. | - Project evaluations, ACPM expanded membership roles, and the FAO fleet survey.<br>- ACPM financial statements and production statistics.<br>- Project reports by the Contractor. | -Phase II proceeds on schedule.<br>-Djiboutians are identified and trained in proper roles and counterpart positions.<br>-Other donor support is available as projected (CRS, IFAD).<br>-GROD continues active support of industry with continued approach. |

Project Title & Number: Djibouti Fisheries Development II (603-0015)

Date Prepared: October, 1983

PAGE 3

| NARRATIVE SUMMARY | OBJECTIVELY VERIFIABLE INDICATORS | MEANS OF VERIFICATION | IMPORTANT ASSUMPTIONS |
|---|---|---|---|
| Outputs | Magnitude of Outputs | | Assumptions for achieving outputs |
| 1. Fishermen production increased average of 60% per landing for a total of 800 tons sold annually to ACPH.<br>2. ACPH annual processing increases to 800 tons, with reduced losses and increased profits.<br>3. Retail outlet sales reach an annual 300 tons sold to Djiboutians.<br>4. The SEP has a working support program which protects and promotes local fisheries. | 1. Catch per unit effort (landing) increases to an average of 190 kilos. Each vessel(crew) averages four landings per month.<br>2. The ACPH markets 800 tons of fish (whole weight) per annum by EOP with loss of less than 2% above normal dehydration of fish.<br>3. Roughly 35% of ACPH marketing done with retail outlet operators.<br>4. Research efforts enhance knowledge of fishing areas and production, as well as help protect resources.<br>SEP programs meet Djiboutian fisheries industry needs. | -Project reports and evaluations<br>-ACPH production statistics and financial statements<br>-Site visits by Program Officer<br>-SEP statistical reports and publications | -Fishermen adopt new practices and utilize new equipment<br>-New participants are attracted to the fisheries industry<br>-Market demand continues to exceed supply capacity<br>-Sound business practices prevail at the ACPH and at the retail outlets<br>-Fisheries industry development remains a high priority of the Government of Djibouti |

LOGICAL FRAMEWORK

Project Title & Number: Djibouti Fisheries Development Phase II (603-0015)

Total U.S. Funding: $2,008,000

Date Prepared: October, 1983

PAGE 1

| NARRATIVE SUMMARY | OBJECTIVELY VERIFIABLE INDICATORS | MEANS OF VERIFICATION | IMPORTANT ASSUMPTIONS |
|---|---|---|---|
| Inputs:<br><br>1. Technical assistance, long term<br>2. Technical assistance, short term<br>3. Fishermen training<br>4. ACPM staff training<br>5. SEP staff training<br>6. Retail outlets operator training<br>7. Processing system<br>8. Marketing system<br>9. National fisheries program<br>10. Research and exploratory fishing program<br>11. Certain commodities and facilities provided | Implementation Target (Type and Quantity):<br><br>1. a. ACPM Financial Mgr.<br>b. ACPM Master Fisherman<br>c. ACPM Marketing Mgr.<br>d. SEP Fisheries Biologist<br>e. SEP Marine Economist /Management Expert<br>2. Consultancies on fish processing, fisheries program development, training plans, research activities and specialized production.<br>3. About 40 experienced fishermen and some 60 crew/new participants will receive training.<br>4. Boat captain and crew fish handlers and ACPM management will receive training (35 people).<br>5. SEP staff training given to the Director, extension agents, statisticians and counterparts.<br>6. All retail outlet operators receive training<br>7. Less loss and improved quality of ACPM products<br>8. ACPM sales total 800 tons, 85% wholesale and 15% retail<br>9. Program sustains artisanal approach and ACPM<br>10. Research identifies resource location and | -AID disbursement records<br>-GROD budgets and expenditure records<br>-Evaluations and site visits<br>-AID/Djibouti monitoring of progress<br><br>10. Cont. patterns. Also indicates probable yields of various species.<br>11. Necessary expansions to processing areas and offices carried out. Materials required for research, training, testing, and management are procured. | Assumptions for providing inputs:<br><br>-AID and other donors provide assistance on a timely basis<br>-Contractor provides personnel appropriate for carrying out essential tasks<br>-GROD has sufficient resources to provide needed support to fisheries industry<br>-Local Djiboutian staffing needs are met with appropriate personnel. |

ANNEX D

Technical Assistance
Qualifications and Scopes of Work

Marine Economist/Management Expert

This individual will be serving as counterpart to the SEP Director and will be the Team Leader for the Phase II effort on a full-time base for three years.

Qualifications - Long-term experience in development economics and developing fisheries industries overseas, with good (FSI 3) french speaking ability.

Experience must be with management and administration of national fisheries programs, both in design and implementation, in a senior capacity.

Degree requirements should be at the MS level in appropriate topics with at least ten years professional experience.

Scope of Work - The person will have the basic responsibility of formulating a national program acceptable to the SEP and GROD which delineates the tasks and requirements for establishing a viable, strong and developed fisheries industry.

Once such a program has been designed, the marine economist/management expert will assist the SEP staff in its implementation, in the form of management and training.

As Team Leader, the management expert will supervise the technical assistance efforts of the Phase II personnel. The person will oversee and coordinate all training activities, will liaise with other donor organizations, and represent the contractor with USAID.

Fisheries Biologist

This person will head the research/exploratory fishing effort for a period of two years full-time and two visits of one month each in the final year. The fisheries biologist will work as a staff member of the SEP.

Qualifications - The person should have formal training in fisheries biology with over five years experience in assessment-related activities, preferably in tropical

waters. Experience in performance of stock assessments and a good working knowledge of marine classification is necessary along with the ability to administer the operation of the research vessel.

The person should have some background in oceanographic relationships to fisheries studies and ability to take hydrographic observations. A demonstrated ability to summarize data and prepare reports is essential, and relate the material to a national fisheries development program, as well as fishermen's needs.

The person must have a working knowledge of french (FSI 2) and some experience working in developing countries.

Scope of Work - The primary purpose of the researcher's presence will be to initiate a program which will provide estimates of standing stocks for the principal species now sold. The research program run by the marine biologist will develop projections of allowable yields for fishing. The systematic resource evaluation must make use of existing equipment and complement work being done by FAO in the Red Sea Project as well as be coordinated with the work of the AID project master fisherman and IFAD personnel.

The Fisheries Biologist's work program should incorporate the information gathered in the current project, from the ACPM, the contractor and the FAO Red Sea Research activity. The person will also be responsible for on-the-job training of counterpart personnel and statistics clerks.

Management/Finance Advisor

This person will work with the manager of the ACPM as the counterpart. The position will require three years of full-time technical assistance.

Qualifications - The individual should have a strong management background in broad supervisory roles. Although it's not essential, fisheries experience would be valuable. The management/finance advisor should have a demonstrable capability to install various control systems and to perform basic financial analyses.

The person should have an advanced degree in finance and management and considerable experience in a professional capacity. Also required is overseas experience in a developing country and a good speaking ability in french (FSI 3).

Scope of Work - The person will be expected to continue the work initiated by the management advisors in Phase I, yet to expand upon their activities by accomplishing the following tasks.

1. Establish an inventory system which utilizes space efficiently, uses FIFO, and maintains fish quality.

2. Assist with the establishment of an efficient work flow system of purchasing, weighing, stocking, processing, selling, billing and shipment.

3. Supervise the maintenance of book-keeping records which provide a monthly balance sheet, income and expenditure statement, and sources and uses of funds statement. This is in addition to production and processing records.

4. Periodically perform various analyses, such as: a. cost analyses for different products by processing method and species; b. cost analyses for other operations, i.e. boat and engine repair, fuel sales, ice sales, revolving fund operations.

5. Supervise administrative and personnel requirements of the ACPM.

The management/finance advisor will be expected to train the counterpart and subordinate staff in an on-the-job modality and some formal education in a classroom situation. All work must be closely coordinated with the marketing manager, FAC cooperant, IFAD technical assistance people, master fisherman, and other supervisory personnel.

Master Fisherman/Trainer

This individual will be working directly with fishermen and partly with research activities. Service will be required full-time for three years.

Qualifications - The Master Fisherman/Trainer must be familiar with various types of fishing gear in small-scale fishing in tropical waters. Experience in the use of nets, long-lines and small craft is essential. It is required that the person selected has worked in developing countries with local people.

The ideal individual will have worked as a fishing extension agent, providing training to artisanal fishermen in use of efficient and effective equipment and gear. The education

level of the individual is much less important than the work experience and ability to relate to people.

French at a good speaking level (FSI 3) is considered essential. Knowledge of arabic is not required, but would be valuable. A young, highly dynamic individual will be most suitable, as the work will be arduous and, at times, frustrating.

Scope of work - The master fisherman/trainer will be required to learn the Djiboutian fishing grounds well, to understand the local fishermen and their fishing methods and to know how to relate effectively with the people. The primary tasks are to establish demonstration programs for experienced fishermen and training activities for less-experienced or new fishermen.

In order to do these tasks effectively, the master fisherman/trainer must test all gear and equipment to ensure that they are more effective and efficient than the gear and equipment currently being used. To test this gear and equipmentthey must be used in settings identical to those of the experienced Djiboutian fishermen. A broader knowledge of fish habits and locale can aid in the effort to demonstrate the superiority of newer fishing tools and methods.

Once tools and methods are tested, the master fisherman/trainer will be ready to begin demonstration and training activities.

a. Demonstrations - For perhaps one day or night per quarter with small groups of experienced fishermen (say ten groups, of four, roughly five times per year), the master fisherman and his trained crew will accompany or be accompanied to the normal fishing grounds. There the gear and equipment to be introduced will be utilized along with the new methods known to be most effective. The fishermen may use their traditional gear and methods. Assuming that the superiority of the new tools and methods are demonstrated, fishermen will be shown how they can also increase their catch. This will be repeated many times to the fishermen over an extended period of time. With different seasons and different species, alterred gear and methods will be demonstrated. Consequently, it is believed that the experienced fishermen will adopt gear and methods which are demonstrably superior to previous gear and methods. The ACPM will have the gear in stock for credit sale to the fishermen.

b. Training - More formal training will be provided for crew members of current fishing boats and new participants in fishing. In addition to demonstration fishing as discussed above, formal instruction (both on land and at sea) will be given in the following subjects: boat handling, basic navigation, safety at sea, engine repair and maintenance, boat repair and maintenance, basic fish biology, weather and currents, fishing techniques, fish gear types and care, handling of seafood products, and conservation.

Some fifty crew and new participants could be trained during a two and one-half year period (first six months spent in exploration, gear testing and training ACPM crew) by providing three groups of four each with one day per week training for six months per set of groups. If there were no dropouts, this would total 12 individuals by 5 six month sessions or 60 individuals. Upon completion of the course, superior individuals could be provided with credit by the ACPM to purchase gear and equipment. It is expected that some fifteen new boat captains will be created through the program.

Marketing Manager

This individual will work directly with the ACPM management and the counterpart to be selected. Service will be required for two years full-time, with two visits of one month each during the third year of Phase II.

Qualifications - The person must have a demonstrated capacity to organize a simple marketing system, an ability to plan, organize and operate in an effective manner, and experience in sales.

The person should be able to forecast and outline contingency plans if required. Required is some familiarity with seafood marketing. Experience in the development of standard business/sales practices would be valuable.

The person should have a degree in business administration with an emphasis in marketing. It is required that the person speak french well (FSI 3) and have had overseas experience in a developing country.

Scope of Work - The marketing manager will formulate and carry out a detailed marketing plan for the ACPM and industry as a whole. Such a plan, to serve as a guide, is included. The tasks shown make up the scope of work for the marketing manager.

Marketing Plan

A. Define the Market

1. Profile all current customers, wholesale and retail; determine volumes, items, seasonally

2. Set up card file system of all current customers with above information

3. Make a list of customers Not served: Restaurants, Hotels, Hospitals, Schools, Military, Supermarkets
   a. Are they buying fish?
   b. If yes; how much, from whom?
   c. What form; fresh or frozen?
   d. What price are they paying?

4. Develop a list of potential new customers - estimate potential volume
   a. Contact new potential customers
   b. Sell new customers
   c. Determine their needs; service needs

5. Contact current customers, determine their expected volumes, encourage more sales

6. Make a 3 years sales projection
   a. By markets; wholesale/retail
   b. Project seasonal variance
   c. Coordinate projection with production trends

B. Improve Product; Differentiate Product

1. Institute better handling
2. Institute better inventory control
3. Frozen:
   a. Glaze and rerap fillets
   b. Standard cardboard box to pack
   c. Better inventory control

4. Fish:
   a. Better handling; more ice
   b. Better packing; ice poly bags or plastic tubs

5. Profile species/product forms and allocate to markets i.e as whole fish - small - all species
   a. fillets (Dorade etc.) sold to restaurants
   b. whole gutted to retail markets etc.

C. Develop Sales Promotion

1. Assign sales functions to 1 or more persons

2. Establish control with customers and potential customers

3. Develop price list and product list

4. Develop booklets for customers with regular distribution of information i.e. mail weekly price lists etc.

5. Establish personal contact with customers.

6. Establish contact with new potential customers.

7. Incentive Program for market managers.

D. Investigate Pricing Policies and Costs

1. Develop price that maximizes revenue, i.e. fine restaurants will and can pay more than retail markets.

2. Determine cost of each item sold, use yield studies to get more rational costs.

3. Examine spoilage volumes and determine its effect on revenues/profits

4. Investigate charging higher prices for product differentiation
   a. portion control fillets
   b. delivery
   c. better packaging

E. Examine Distribution Capacity

1. What is likely volume to be on high production days, how many consecutive days can this be expected (i.e. 4 ton days)

2. What is storage capacity?

3. What is processing capacity?

4. What is ice capacity?

5. What is delivery capacity?

6. What is sales capacity?

7. Develop alternate markets during high production:
   a. Sales incentives
   b. promotional prices
   c. outline other markets, sales contingencies
   d. match high production months with sales estimates projected by month

F. Examine Supply/Demand

1. What sales volume will each target species do in years 1-3

2. Plot production by month year 1-3

3. Plot sales by month years 1-3

4. Examine peaks; Examine valleys

5. Develop allocation plans for servicing <u>all</u> customers during shortages.

G. Retail Markets

1. Develop plan to open 7 new markets

2. Select sites; acquire funding for stores

3. Develop basic training for retail outlet operators:
   a. Buying, storing, inventory, record keeping, promotion/selling, ordering

4. Develop sales promotional materials

5. Select good managers
   a. Teach to aggressively sell
   b. Require they build volumes to assigned quotas - revise quotas

6. Develop incentive program based on quotas.

H. Develop operating procedures, Contingency Plans

1. Develop contingency plans
   a. Peak production; where to sell
   b. Shortage, how to allocate
   c. What to do in case of emergency, for equipment breakdown, bad weather etc.

2. Develop marketing policy with regard to:

   a. delivery schedule
   b. payment terms (credit?)
   c. minimum, order for discounts
   d. distribution of point of sale materials

I. Develop Goodwill

1. Maintain contract with customers

2. Service accounts properly

3. Handle problems with customers expeditiously

4. Assign responsibility

5. Supply materials/price lists etc.

J. Develop Education/Training Programs

1. Flyers, publicity and education materials to consumers

2. Design national industry promotion and recognition i.e. Djibouti National Seafood Month

3. Train Market Managers

4. Coordinate marketing/education with other functions

5. Develop team approach

# A N N E X  E

## FINANCIAL ANALYSIS

1. A. Fishermen's income and expenditure.
   B. Incremental net profit.

2. A. ACPM Projected income and expenditure.
   B. Incremental net profit.

3. Retail outlet income and expenditure.

## ECONOMIC ANALYSIS

1. Project Economic Costs and Benefits.

2. Production Costs to Fishermen.

## Fisherman Expenditure Estimates

Figures are based on historical averages (1981 - 1982) for the average boat captain/owner. It is assumed that the normal vessel uses three fishermen, makes four landings per month and that crewmen are paid roughly one-third of the catch value (after fuel ice and bait costs are deducted). The catch is assumed to be 120kgs. per landing, value DF 250 per kilo. Estimates are based on use of handlines, gillnets 7m. fiberglass dories, using 15Hp outboards. Use of traditional craft is more costly (repairs and replacement) and use of 8Hp outboards would reduce fuel and oil costs nearly one-third.

| | DF |
|---|---|
| **Income** (576kgs. fish) - Selling at DF 250kg..... | 1,440,000 |
| **Variable Costs** | |
| Fuel and Oil (7,5hrs. operation per landing, 4,5hrs. @ 10 l. p.h. and 3hrs. @ 5 l. p.h.) costing DF 135 p.l. for 2,880 litres ..... | 388,800 |
| Ice (1kg. p.kilo of fish, 120kgs. p.landing) costing DF 10 p.kg. for 5,760kgs..... | 57,600 |
| Bait and Provisions (4kgs. bait p.landing) cost DF 250 p.kg. for 192kgs. For provisions and miscellaneous an additional DF 250 p.landing is included..... | 60,000 |
| Fishering Gear (one gillnet, misc. hooks, lines, weights, knives, mats, baskets, etc.) | 35,000 |
| Engine Maintenance and Service (includes annual overhaul, plugs, points, filter, etc..) ..... | 132,500 |
| Crew Payment (catch totals 5,760kgs. @ DF 250 or DF 1,440,000 less fuel, bait and ice costs and divided by three - one to owner/captain for replacement of gear, one to owner/captain and one to crew (2 members)..... | 311,200 |
| Total Variable Costs.....DF | 985,100 |

2/...

| Fixed Costs | DF |
|---|---|
| Boat Depreciation (500,000 at 10 years, straight line) ..... | 50,000 |
| Engine Depreciation (175,000 at 2 years, straight line) ..... | 87,500 |
| Refurbishing and Ice Box (hull scraping and repainting, replace ice box after 10 years). ..... | 25,000 |
| Total Fixed Costs .....DF | 162,500 |
| Net Profit to owner/captain .....DF | 292,400 |

## FISHERMAN INCREMENTAL INCOME

Fishermen, through the Phase II Project, are expected to increase their catch per landing effort by roughly 15% per year. In the base year, the catch estimate is 120kgs. per landing. In year 1 it increases to 140kgs., in year 2 to 164kgs and in year 3 to 190kgs. All other assumptions, as in the Fisherman Expenditure Estimates, remain the same.

| INCOME | YEAR 1 | YEAR 2 | YEAR 3 |
|---|---|---|---|
| (6720kgs. in yr. 1, 7872kgs. in yr.2, 912kgs. in yr. 3) DF | 1,680,000 | 1,968,000 | 2,280,000 |
| **Variable Costs** | | | |
| Fuel and Oil ..... | 388,800 | 388,800 | 388,800 |
| Ice (1kg. per 1kg. fish) @ DF 10 ..... | 67,200 | 78,700 | 91,200 |
| Bait and Provisions..... | 60,000 | 60,000 | 60,000 |
| Fishing Gear (increasubg 15% p.a. ..... | 40,300 | 46,300 | 53,200 |
| Engine Maintenance and Service | 132,500 | 132,500 | 132,500 |
| Crew Payment (one-third after fuel, ice and bait) | 388,000 | 480,200 | 580,000 |
| Total Variable Costs ....DF | 1,076,800 | 1,186,500 | 1,305,700 |
| GROSS INCOME ..... | 603,200 | 781,500 | 974,300 |
| FIXED COSTS ..... | 162,500 | 162,500 | 162,500 |
| Net Profit ....DF | 440,700 | 619,000 | 811,800 |
| Base Year Net Profit to owner/ captain ..... | 292,400 | 292,400 | 292,400 |
| INCREMENTAL INCOME .....DF | 148,300 | 326,600 | 519,400 |

ACPM PROJECTED INCOME AND EXPENDITURE
(Shown in DF,000's, Equal to $1 for DF 175)

| | YEAR 1 | YEAR 2 | YEAR 3 |
|---|---|---|---|
| **INCOME** | | | |
| 1. RETAIL FISH SALES | 63,500 | 65,000 | 58,750 |
| 2. WHOLESALE FISH SALES | 152,000 | 208,000 | 266,400 |
| 3. WHOLESALE OTHER SEAFOOD SALES | 16,027 | 20,483 | 24,696 |
| 4. EQUIPMENT/GEAR SALES | 18,700 | 18,700 | 18,700 |
| 5. BOAT/ENGINE REAPAIRS | 8,000 | 8,000 | 8,000 |
| 6. SALES OF ICE | 8,025 | 10,050 | 12,000 |
| TOTAL INCOME | 266,252 | 330,238 | 388,546 |
| **VARIABLE COSTS** | | | |
| 7. COST OF FISH SOLD | 133,750 | 167,500 | 200,000 |
| 8. COST OF SEAFOOD PRODUCTS SOLD | 13,390 | 16,780 | 20,000 |
| 9. PACKAGING MATERIALS | 1,247 | 1,543 | 1,810 |
| 10. EQUIPMENT AND GEAR SOLD | 16,269 | 16,269 | 16,269 |
| 11. EQUIPMENT AND PLANT REPAIRS | 1,742 | 2,155 | 2,527 |
| 12. POST AND TELEPHONE | 774 | 958 | 1,123 |
| 13. STAFF INCREASES | 1,440 | 2,160 | 2,880 |
| 14. BOAT YARD MATERIALS | 4,800 | 4,800 | 4,800 |
| TOTAL VARIABLE COSTS | 173,412 | 212,165 | 249,409 |
| GROSS PROFIT (LOSS) | 92,840 | 118,073 | 139,137 |
| **FIXED COSTS** | | | |
| 15. SALARIES AND BENEFITS | 11,440 | 12,880 | 14,320 |
| 16. SOCIAL SECURITY | 1,602 | 1,803 | 2,005 |
| 17. CUSTOMS, TAXES, LEVIES | 63 | 63 | 63 |
| 18. GROD PLANT USAGE | 5,400 | 5,400 | 5,400 |
| 19. PUBLICITY AND ADVERTISING | 57 | 57 | 57 |
| 20. FURNITURE & EQUIPMENT REPLACEM. | 480 | 480 | 480 |
| 21. BANK CHARGES | 10 | 10 | 10 |
| 22. OFFICE SUPPLIES | 175 | 175 | 175 |
| TOTAL FIXED COSTS | 19,227 | 20,868 | 22,510 |
| NET PROFIT (LOSS) DJIBOUTI FRANCS | 73,613 | 97,205 | 116,627 |
| U.S. DOLLARS | 420,650 | 555,457 | 666,440 |

Notes on ACPM Projected Income and Expenditure

1. Retail Fish Sales - Although current retail sales at the ACPM total 30% of total fish sales, this should reduce significantly over the Project period. It is estimated that the percentage of fish sales sold retail will reduce 5% (of total sales) each year. Sales are shown on the basis of whole weights. In year one 535 tons of fish are to be sold by the ACPM with a loss of 5% in year one. Therefore some 127 tons are sold retail at an average price of DF 500 per kilo. Revenues of DF 63,500,000 are realized. In year two, with total sales of 670 tons, some 20% or 134 tons are sold. With a reduced loss of 3%, sales are on 130 tons. Revenues in year two will total DF 65,000,000. In year three, total fish is 800 tons. Retain share is 15% or 120 tons. With a reduced 2% loss, 117.5 tons are sold for DF 58,750,000.

2. Wholesales Fish Sales - Wholesale fish sales totaled 70% of all sales historically. This should increase 5% per year during the project period. The average price at which fish are sold is DF 400 per kilo (whole weight). In year one 75% of fish are sold wholesale with a loss of 5%. This represents 380 tons or revenues of DF 152,000,000. In year two, 80% of 670 tons with a 3% loss equals revenues of DF 208,000,000 (on 520 tons). In year three, 85% of 800 tons with a 2% loss equals revenues of DF 266,400,000 (on 666 tons).

3. Wholesale Other Seafood Sales - It is estimated that lobster sales will increase from a base of 4 tons by one-third of that base annually. Slaes on 5.35 tons (less 5% loss) in year one are followed by sales on 6.7 tons (less 3% loss) in year two and 8.0 tons (less 2% loss) in year three. This equals revenues of DF 14,231,000 in year one, DF 18,197,000 in year two and DF 21,952,000 in year three (at a selling price of DF 2,800 per kilo).

3. cont..

Squid sales are calculated on a base of 1 ton per year, increased to 1.35 tons in year one (with 5% loss), 1.79 tons in year two with 3% loss) and 2.0 tons in year three (with 2% loss). At a selling price of DF 1,400 per kilo, revenues are DF 1,795,500 in year one, DF 2,308,600 in year two and DF 2,744,000 in year three. No other seafood product sales are shown, although the possibilities are that sardinella, fish meal, baits, crabs and other products may be sold.

4. Equipment and Gear Sales - For new gear/equipment and replacements, a mark-up of 15% over COGS is used. Donations are not shown as such. Gear at DF 35,000 per production unit will be sold, for some 95 units annually. The sales will be DF 3,325,000. Outboard motor replacement and requirements for new craft will total roughly 45 units annually at DF 175,000 per motor, sales will total DF 7,875,000. Fifteen new boats will be sold annually, selling for DF 500,000 each (ten replacement, five for expansion of fleet). The total boat sales will be DF 7,500,000. Total annual sales will be DF 18,700,000.

5. Boat and Engine Repairs - These totaled nearly DF 8,000,000 in 1982. This figure will be used for annual revenues during the Project period.

6. Sale of Ice - Total ice production should be double that of fish production. In the first year this is 1,070 tons, in year two 1,340 tons and 1,600 tons in year three. One-fourth is used by the ACPM and the remainder is sold to fishermen and fish sellers. The price is DF 10 per kilo.

7. Cost of Fish Sold - All fish purchased will basically be sold. An average price of DF 250 per kilo is used, on purchases of 535 tons in year one, 670 tons in year two and 800 tons in year three.

8. Cost of Other Seafood Products Sold - Lobster is bought at DF 2,200 per kilo from fishermen. For 5,350 kilos, the cost is DF 11,770,000, on 6,700 kgs it is DF 14,740,000 and on 8,000 kgs in year three it is DF 17,600,000. For squid the cost per kilo is DF 1,200. In year one the total cost is DF 1,620,000, in year two DF 2,040,000 and in year three DF 2,400,000.

9. Packing Materials - On total sales of DF 236m. from March, 1981 until June, 1983, packing materials cost DF 1,369,000. A cost of DF 5,800 per DF 1m. in fish sales is used.

10. Equipment and Gear Sold - Assuming no future large equipment donations, goods will be sold at a mark - up of roughly 15%. Repayments will be made immediately for gear, motors within one year and boats within two years. Sales are shown at the time of invoicing. The COGS will be 87% of sales prices. Gear sales are projected at DF 35,000 each for eight boat replacements. New gear is required annually for some 15 new boats and crews. Fifteen new boats should be sold annually, valued at DF 500,000 sales price each. There will be a requirement to replace 40 motors per annum and add 5 new motors each year. These 15Hp motors are sold for DF 175,000 each. Total sales are projected at DF 18,700,000. COGS is therefore DF 16,269,000.

11. Equipment and Plant Repairs - Based on historical averages, costs are DF 8,100 per DF 1m. in fish sales.

12. Post and Telephone - Based on historical averages, costs are DF 3,600 per DF 1m. fish sales.

13. Staff Increases - For every additional DF 50 m. in sales over DF 120m, one additional staff will be required at DF 60,000 per month, this equals an additional DF 720,000 per year for each new employee.

14. Boat Y Materials - For repair of boats and engines, material costs are shown at 60% of revenues.

FIXED COSTS

15. Salaries and Benefits - Projected at DF 10m. per annum at present. Assumption is that ACPM will initiate payment of salary of two SEP employees each year. Therefore year one will show an increase of 2 x 720,000 plus 10m. or DF 11,440,000, year two DF 12,880,000 and year three DF 14,320,000.

16. Social Security - Applied at a rate of 14% on salaries and benefits, this will be enacted in 1984 according to the SEP office.

17. Customs, Taxes and Levies - These are shown at the historical rate of DF 63,000 per annum.

18. SEP Plant Usage - For the use of the cold rooms, ice machine and vehicles, ACPM is paying a flat fee (subsidized by SEP) of DF 450,000 per month or DF 5,400,000 per year.

19. Publicity and Advertising - Shown is the 1982 expense of DF 57,000. There were no expenses through June, 1983 and only DF 18,000 in 1981.

20. Replacement of Furniture and Equipment - On the basis of a five year straight line depreciation, a figure of DF 480,00 is used. This includes (not strictly kosher) purchase of some new items.

21. Bank Charges - These have not exceeded DF 1,000 per annum, but this is increased to DF 10,000 per year.

22. Office Supplies - These should not exceed DF 175,000 per annum.

ACPM - PROJECTED INCREMENTAL INCOME AND EXPENDITURE

(SHOWN IN DF,000'S)

Although the price changes are not known for certain, it is probable that wholesale prices will increase from DF 320 average per kilo to DF 400 and that retail prices will increase from DF 400 per kilo to DF 500.

The Impact of such a change is shown below. Variable costs are charged as they were on production levels at the "old prices"

| INCOME | YEAR 1 | YEAR 2 | YEAR 3 |
|---|---|---|---|
| 1. RETAIL FISH SALES ..... | 16,000 | 26,000 | 29,000 |
| 2. WHOLESALE FISH SALES ..... | 38,400 | 84,000 | 133,200 |
| 3. WHOLESALE OTHER SEAFOOD SALES | 4,057 | 8,284 | 12,348 |
| 4. REDUCTION IN LOSS ..... | 4,280 | 10,720 | 16,000 |
| 5. INCREASED SALES AND REPAIRS.. | 8,900 | 8,900 | 8,900 |
| 6. SALES OF ICE ..... | 2,025 | 4,050 | 6,000 |
| TOTAL INCREMENT REVENUE....DF | 73,662 | 141,954 | 205,948 |
| **VARIABLE COSTS** | | | |
| 7. COSTS OF FISH SOLD ..... | 33,750 | 67,500 | 100,000 |
| 8. COSTS OF SEAFOOD PRODUCTS SOLD | 3,390 | 6,780 | 10,000 |
| 9. PACKING MATERIALS ..... | 296 | 609 | 911 |
| 10. SALES AND REPAIRS ..... | 7,023 | 7,023 | 7,023 |
| 11. EQUIPMENT AND PLANT REPAIRS.. | 413 | 842 | 1,272 |
| 12. POST AND TELEPHONE ..... | 184 | 374 | 565 |
| 13. STAFF INCREASES..... | 1,440 | 2,160 | 2,880 |
| DF | 46,496 | 85,288 | 122,651 |
| INCREMENTAL PROFIT .....DF | 27,166 | 56,666 | 83,297 |
| U.S. $ | 155,200 | 323,800 | 476,000 |

## RETAIL OUTLETS EXPENDITURE ESTIMATES

Assuming operations for 26 days per month for 10 months, selling an average of 40kgs and 80kgs. of fish per day. Average price of fish sold is DF 600 per kilo. Stores are expected to sell 10 tons in the first year of operation and 20 tons thereafter. The schedule of openings is shown in section II. D.3.

| Sales | 10 tons | 20 tons |
|---|---|---|
| (10ts. and 20ts.) @ DF 600kgs ... DF | 6,000,000 | 12,000,000 |
| **Variable Costs** | | |
| Purchase of Fish (10,400kgs. & 20.8t. at DF 400 average)..... | 4,160,000 | 8,320,000 |
| Losses of Fish (weight and spoilage, 400kgs. off sales at 10.4ts. 800kgs. at 20.8 tons. | -0- | -0- |
| Ice (10,400kgs. and 20.8t. @ 10 per kg.) ..... | 104,000 | 208,000 |
| Packing and Cleaning Materials | 48,000 | 96,000 |
| Electricity (60kw @ DF 36 per kw each month) ..... | 26,000 | 52,000 |
| Water at DF 500 p.m. ..... | 6,000 | 12,000 |
| Sales Clerk/Assistant (required at 20ts. volume) minimum wage/transport DF 500 per day for 260 days. | —6— 130,000 | 210,000 130,000 |
| Equipment replacement and repairs... | 60,000 | 60,000 |
| Total Variable Costs DF | 4,534,000 | 9,088,000 |
| GROSS PROFIT ..... DF | 1,466,000 | 2,912,000 |
| **Fixed Costs** | | |
| Rent - Paying DF 6,000 p.m. to GROD... | 72,000 | 72,000 |
| Furniture - Replacements ..... | 24,000 | 24,000 |
| Repainting/Furbishing interior ..... | 24,000 | 24,000 |
| TOTAL FIXED COSTS .....DF | 120,000 | 120,000 |
| Net Profit to owner/operator .....DF | 1,346,000 | 2,792,000 |
| U.S. $ | 7,691 | 15,954 |

## PROJECT COSTS AND BENEFITS ($,000s) - Economic Analysis

| | COSTS | | | | | | | | BENEFITS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | GROP | USAID | Other Donors | Fishermen | ACPM Incremental Cost | Retail Outlets | Total | Total Discounted at 10% | Fishermen's Income | ACPM Incremental Revenue | Retail Outlets | Total | Total Discounted at 10% |
| Year 1 | 816 | 1164 | 439 | 127 | 267 | 548 | 3361 | 3055 | 193 | 421 | 686 | 1300 | 1181 |
| Year 2 | 254 | 935 | 428 | 169 | 489 | 737 | 3012 | 2482 | 386 | 811 | 926 | 2123 | 1753 |
| Year 3 | 225 | 671 | 410 | 196 | 703 | 815 | 3020 | 2268 | 571 | 1177 | 1029 | 2777 | 2085 |
| Year 4 | 135 | -o- | -o- | 156 | " | " | 1809 | 1235 | " | " | " | " | 1897 |
| Year 5 | 135 | -o- | -o- | 156 | " | " | 1809 | 1123 | " | " | " | " | 1724 |
| Year 6 | 135 | -o- | -o- | 181 | " | " | 1834 | 1035 | " | " | " | " | 1566 |
| Year 7 | 135 | -o- | -o- | 181 | " | " | 1834 | 941 | " | " | " | " | 1424 |
| Year 8 | 135 | -o- | -o- | 181 | " | " | 1834 | 857 | " | " | " | " | 1297 |
| Year 9 | 135 | -o- | -o- | 156 | " | " | 1809 | 767 | " | " | " | " | 1177 |
| Years 11-20 | 135 | -o- | -o- | 181 | " | " | 1834 | var. | 571 | " | " | " | var. |

PROJECT INTERNAL RATE OF RETURN EQUALS 21.25% OVER A 20-YEAR SPAN.

WITH A COST OVER-RUN OF 10%, THE IRR IS 13.8%.

WITH BENEFITS REDUCED 10%, THE IRR IS 12.9%.

WITH BOTH A COST OVER-RUN OF 10% AND BENEFITS REDUCED 10%, THE RESULTING IRR IS 6.0%.

Note: 1983 is the base year for calculations. Inflation is not factored, as it is expected to effect costs and benefits equally. Columns may not add exactly to the totals shown, as rounding has been done. * Year 10 for fishermen's income shows a salvage value on boats and engines of $125,000. The benefit/cost ratio, at a 10% discount rate, is 1.11 on a project impact of 20 years.

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## FISH PRODUCTION COSTS TO FISHERMEN

Costs of Producing 400 Tons Per Annum (Without Phase II)
Shown in US $

| Years | Fuel/Oil | Ice | Bait and Provisions | Fishing Gear | Engine Maintenance | Labor | Boat Replacement | Engine Replacement | Refurbish Boat | Ice Box Rplcmnt | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Years 1-10 (annual) | 109646 | 22856 | 23810 | 14000 | 52500 | 248933 | 20000 | 35000 | 8400 | 1050 | 536195 |

Incremental Costs of Increased Fish Production (With Phase II)
Shown in US $

| | | | | | | | & Addtn. | & Addtn. | | & Addtn | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Year 1 | 119323 | 30570 | 30941 | 37500 | 54500 | 285352 | 34286 | 60000 | 9000 | 1800 | 663472 |
| Year 2 | 121946 | 38284 | 37747 | 40000 | 56500 | 305068 | 34268 | 60000 | 9600 | 1800 | 705231 |
| Year 3 | 120411 | 45712 | 44116 | 42500 | 58500 | 314402 | 34286 | 60000 | 10200 | 1800 | 731927 |
| Year 4 | 120411 | 45712 | 44116 | 42500 | 58500 | 314402 | 20000 | 35000 | 10200 | 1050 | 691891 |
| Year 5 | " | " | " | " | " | " | " | 35000 | " | " | 691891 |
| Year 6 | " | " | " | " | " | " | " | 60000 | " | " | 717641 |
| Year 7 | " | " | " | " | " | " | " | 60000 | " | " | 717641 |
| Year 8 | " | " | " | " | " | " | " | 60000 | " | " | 717641 |
| Year 9 | " | " | " | " | " | " | " | 35000 | " | " | 691891 |
| Year 10 | " | " | " | " | " | " | " | 35000 | " | " | 691891 |
| Year 11 on | " | " | " | " | " | " | " | 60000 | " | " | 717641 |

Notes: 400 ton production without Phase II- Assumes four landings per month, average 120 kgs. per landing, seventy (70) boats operating. Fuel/Oil- 7.5 hrs. operation per landing, 4.5 hrs. at 10 litres p.h.and 3 hrs. at 5 litres p.h., cost per liter $0.55. Ice- 1 kilo purchased for each kilo of fish caught. At Djibouti Francs 10 ($0.05714) per kg. for 400,000 kgs. Bait- Bait costs Df. 250 per kg., four kgs. per trip, and Df. 250 per landing for miscellaneous provisions. Fish Gear- Estimated at $200 per year for a net, lines, hooks, ropes, knives, baskets, weights, buckets, etc... Engine Maintenance- A cost of $750 (half replacement cost) is estimated, covering overhaul, plugs, oil change, pins, etc. Captain/Crew Costs- Totals 2/3 (67%) of catch value less running costs, which equals $74.68 per landing. Boat Replacement- 10% are replaced each year, seven total at a cost of Df. 500,000 each ($2857.14 each). Engines- One-half of all engines replaced each year at Df. 175,000 each ($1,000 each). Refurbishing Boats and Ice Boxes- Estimated at $120 and $150 per annum respectively.

800 ton production with Phase II- Assumes production of 535 tons in year 1, 670 tons in year 2 and 800 tons in year 3 and thereafter. Landings increase to 140 kgs in yr. 1, 164 kgs in yr 2, and 190 kgs in yr 3 and onwards. Total boats operating in yr 1 are 75, 80 boats in yr 2, and 85 boats thereafter. All new boats will have diesel engines. Fuel and Oil- $32.90 per landing with old boats and $8.57 per landing on new boats with diesels. Ice- 535 tons in yr 1, 670 tons in yr 2, and 800 tons in yr 3, costing $57.14 per ton. Bait- $47.62 per ton of fish caught, with $1.43 misc. Fishing Gear- Increased to $500 per year per boat. Engine Maintenance- $750 p.a. for outboards and $400 p.a. for diesels. Labor- $74.68 per landing. Boat and Engine Replacement- Seven old boats and five new boats added each year. One-half of old motors replaced p.a. and diesels (5) bought in years 1-3 and 6-8 at $5000. Refurbishing and ice boxes as above

Best Available Document

ANNEX F

## Social Analysis

The social analysis of the project considered the cultural and socio-economic context of fishery development in Djibouti and identified the constraints and opportunities which will effect the proposed Phase II project. The results of the analysis have been incorporated into the project design.

The material presented in this section provides a brief overview of the socio-cultural background of the project with special reference to Djibouti City and identifies the expected beneficiaries of the project. In addition, socio-cultural feasibility, expected project impact and issues is presented.

Information was supplied by individuals connected with the project, Djiboutian fisherman and consumers. In addition, the analysis utilized material from the "Base-line Socio-Economic and Marketing Study of Artisanal fisheries in the Republic of Djibouti" by Inger Bjoenklund and Georg Walter-Dehnest, the report on the first phase of feasibility studies - June 1982 (World Bank I) and the final provisional report - January 1983 (World Bank 2) on the "Project de Developpement Urbain de Djibouti" prepared with the participation of the French Ministry of Cooperation. These reports should be useful to the Project Implementation Team as will information from the Djiboutian 1982 Census (which is to be published early in 1984.)

### A. Background

Development of the fishing industry in Djibouti presents quite different features and problems from those normally associated with artisanal fisheries development. Fishing "traditions" are recently established and the usual complex relationships between those people at sea and the fish handlers on the shore are essentially absent.

Djiboutians have been fishing for possibly 150 years, but the fishermen are descended principally from a small number of nomadic Afars who began fishing as helpers to Arabic fishermen (mainly Yemenis) who worked in the area. These Afars eventually became oriented to fishing and practiced only a semi-nomadic life along the coast. However, their fish production was for their own consumption or for export to Yemen. Other Afars and the Issa Somalis (who also traversed

the land area now included of the Republic of Djibouti) continued to follow a nomadic existence suited to the harsh terrain.

The Afar and Somali nomadic tribes are distinguished by different socio/political organizations and languages, but are very similar in their way of life. Both groups were converted to Islam and their oral traditions record their origin from that point. Islam has provided a source of unity and a means of communication. However, the customs and traditions of the tribe remain equally as important as the religion. The Afar political organization is more structured and hierarchical than that of the Issas. However, both groups have social structures which operate to create a profound sense of belonging of the tribe and acceptance of obligations for interaid and mutual protection which must be adhered to, despite individual preference.

Sheep and goats are the bases of nomadic production (rather than cattle) with camels used as pack animals. Milk is the principal food item in the diet, and meat is eaten on rare occasions. The nomads also trade milk and animal products, as well as salt, charcoal and wood for sorghum and other cereals to supplement their diet. Fish is foreign to them and has not been accepted by them in the past.

The reality of present day Djibouti is removed from the nomadic existence of the recent past. Sixty percent of the population now lives in Djibouti City. Towns outside Djibouti (Tadjoura, Obock, Dikhil, Ali Sabich etc.) contain a further 10% of the population. In addition, there are numbers of refugees from the Somali/Ethiopian conflict living in camps in Djibouti, as well as Djibouti nomads who lost their herds in the recent drought and have been brought into camps to permit their survival. Although perhaps 20-25% of Djiboutians still follow the nomadic way of life, most of the population faces the problem of adapting to settled urban life, often without skills or literacy to assist them in the process.

However, the tribal and familial bonds, traditions, and structures promoting interaid persist in the urban environment with both positive and negative effects. That is, the poorest families have access to assistance but enterprising individuals find it necessary to support many others to the detriment of their businesses or personal consumption.

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However, the tribal and familial bonds, traditions, and structures promoting interaid persist in the urban environment with both positive and negative effects. That is, the poorest families have access to assistance but enterprising individuals find it necessary to support many others to the detriment of their businesses or personal consumption.

Although continuing preference for milk and meat products in the diet is also apparent, there are indications

that families are influenced by the life-style of the urban area (discussed below) to modify their eating habits. As a result, the demand for fish is increasing in Djibouti City and quite dramatic increases in consumption can be projected, provided the retail trade is properly organized and promotional programs are continued.

At present most of Djibouti's food is imported, only a minute portion of the land area is cultivable, and the animal husbandry practices of the nomads result in only minor amounts of meat production for the urban market. The Djiboutian Government is highly concerned with the costs and insecurity associated with the dependence on imported food. One of the principal objectives of its development policy is to reduce this dependence. As fish are almost the only readily exploitable local food source, fisheries development enjoys considerable government support.

Specific information on the cost of living in Djibouti City and the socio-economic situation of its citizens is now presented. As many of the fishermen and most fish consumers live in the City, this information is essential to the analysis of the needs of the direct and indirect beneficiaries of the project.

B. Djibouti City

The 1982 population of Djibouti-City is estimated at 145,000 Djiboutians and 35,000 foreigners comprised, the latter composed principally of French nationals, Arabs and refugees. The city more than doubled in size between 1960 and 1972. Since 1972its growth rate has been approximately 3% per annum. As a result, most of the population has been living in the city for more than a decade. The Djiboutian population derives from Somali tribes to a large extent, with a minority of Afars.

The cost of living in Djibouti City is extremely high compared to other developing countries. It is heavily influenced by the high incomes and consumption patterns of the expatriate community and the high cost of imported food. The absolute poverty line for a household, i.e. the income necessary to provide 2000 calories per day for household members plus minimum lodgings has been estimated at 40,000 FD per month or $228 (World Bank 1); food costs consume 36,000 FD of the total. Given the average size of Djiboutian household (six), this indicated an absolute poverty line of $457 per capita per annum.

There is considerable differentiation and concentration of incomes in the city. A small minority of households have an income in excess of 300,000 FD per month and controls more than 50% of revenues. At the other end of the scale, 30% of households have incomes below the absolute poverty line and control only 6% of revenues. Table I provides a breakdown of household incomes by deciles and quartiles of the population and illustrates the distinct differences between different neighborhoods in the city.

Household incomes depend upon the types of employment and the possibilities for employment of adult household members. The potentially active population is approximately 64% of the total population, i.e. the population between 15 and 59 years of age. The overall activity rate of the Djiboutian population is estimated to be approximately 34% or 51,000 persons. Of these, 26,000 are in more or less formal employment (6,300 government employees, 15,400 private sector employees declared to the Social Security Office, 4,300 undeclared household and construction workers). In addition, some 20,000-25,000 persons work in the informal sector where incomes are low and uncertain, averaging 20,000-30,000 FD per month.

Table II, provides details of monthly expenditures of households in various parts of the city depending upon their incomes. The Anciens Quartiers consist entirely of wooden buildings with metal roofs. However, despite the uniform nature of the housing, there is considerable differentiation in incomes. In general the income level decreases with the distance from the center of the city. The Cites of Stade, Enguela and Progres were low cost housing projects carried out in 1964, 1970 and 1972 respectively. Arhiba was constructed in 1968 for dockers but has become the most populous and poorest section in the center of the city. Balbala is an area on the outskirts of town which was originally a refuge for the homeless or for normads struck by drought. Housing consists primarily of huts made of flimsy materials and there is currently no water or electric connections. Projects are underway to construct permanent housing in the neighborhood and to bring electricity and water which should be completed within the next few years.

Table II also indicates that other expenditures consume a portion of incomes at all levels. Incomes considerably above the absolute poverty level are necessary to ensure that expenditures on food could reach the minimum level required. Generally, Djiboutian women are dependent on their

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husbands for income used to purchase food. Women have considerably more freedom than women in many Islamic countries, as they are included among traders seen in the markets, and can own shops and other property. However, their economic activity rate reaches only 12%. Accordingly, women face problems in providing adequate diets for their families as they have little disposable income which they control directly.

The next section discusses the direct and indirect beneficiaries of the project against the background of income needs and constraints outlined above. Analysis with respect to the fishermen concentrates on two questions: (1) their current returns from fishing and position in relation to other economically active individuals and (2) the possibilities of the project resulting in improved fishing incomes and/or employment in the fishing industry given other constraints. Analysis with respect to consumers considers whether fish can provide a source of lower priced quality food, and the impact of the project on meeting consumer needs.

## II. Beneficiaries

The direct beneficiaries of the project are the 260 fishermen, the individuals who have on-shore jobs related to fish handling and supplying the fishing industry (an additional 250-300 people) and the families of these two groups. Indirect beneficiaries include the consumers who will have access to a lower cost, locally produced protein food. By the end of the project it is estimated that these indirect beneficiaries will number approximately 120,000 individuals living in 20,000 households who will be eating (on average) 2 meals with fish per month. A second category of indirect beneficiaries are the organizations/businesses who purchase fish wholesale from the ACPM. Certain of these use fish in feeding programs for needy persons (i.e. WFP and CRS), the balance benefit from a source of fresh fish to include in the meals they provide to employees, hospital patients, customers, etc.

### A. Direct Beneficiaries

#### 1. Fishermen and their Families

a. Background - Fishermen and their families are the principal direct beneficiaries of the project. The survey of fishermen indicated there were some 6 'boutres' with crews of 5-6 men (total = 30) and 90-100 'houris' with crews of 2-3 persons (total = 230) providing approximately 260 jobs in the fishing industry. As many crew members are recruited from the

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captains family members, it is estimated that fishermen come from approximately 210 housholds.

There are a number of fishing families which include several households of fishermen: a father with several sons, well experienced in fishing, all with their own boats, and with grandsons and nephews in their crews. The balance of the households tend to be unrelated to other fishing households. Most fishing households consist of a husband, wife, two-three children and often one or more other relatives of either the husband or wife, so household size is on the order of 6 persons. Only the most successful fishermen have more than one wife and large numbers of children. Accordingly, fishing is supporting approximately 1300 people.

Analysis of the distribution of boat ownership indicates that in the main owners also operate (captain) their boats. Of 25 fishermen interviewed only one was operating a boat for an owner who did not fish. Analysis of the revenues from fishing (presented below) indicates that incomes from fishing are too low to support other than family businesses.

Of the total fishing population, about 10-15 houris market actively at the ACPM making eight or more deliveries per month. A larger group of fishermen, using 50-60 houris in any one month, make an average of 2-3 landings per month at the cooperative. Given data on volumes of fish sold through the Central Market, plus information on other consumers who do not purchase from the Cooperative, it appears that these fishermen are making additional landings each month at locations other than the ACPM. Overall, all fishing units (houris) are producing about 5 tons of fish per year, making 4 landings per month of approximately 100 kilos per landing. Most fishing trips involve only one day of fishing.

The "boutres" tend to fish for lobster and squid which have seasonal production peaks during 4 months of the year and are limited otherwise. The houris are also involved in trade and other activities so they make only limited deliveries of fish to the ACPM. Lobster catch grounds are further away than the fishing grounds and, as lobster can be kept alive for a considerable period after capture, these boats may remain out on fishing trips for 2 weeks or more. Some houris also participate in lobster fishing. Their costs and returns are completely different than the fishing houris (a single delivery of lobster may yield an income of $1000 or more as compared to an average value per fish catch of $140).

The boutre fishermen benefit from cooperative membership through availabilities of equipment, ice and other supplies, and through the provision of a guaranteed marketing channel. However, Phase II activities will concentrate primarily on improving the productivty of the houris, although experimentation may be made with lobster pots as a possible replacement for the free diving method of capture presently utilized. The balance of the analysis concentrates of the situation of the houri owner/operators.

b. Fishing Incomes

The standard method of dividing fish catches is the "Arabic" formula. The costs of operating the boat were substracted from the total value of the catch, and the remainder was divided in three parts: one-third to the boat (to cover costs of repair and replacement), one-third to the owner, and one-third to the crew. The fishermen interviewed gave contradictory information on whether or not the owner received part of the crew share if he was also fishing.

This method of dividing the catch derived from a period before motorized operations and rapidly increasing costs of boats and engines. At present, fuel costs for running the outboard motors on the boats are consuming 25% or more of the total value of the catch (see Annex E, Fishermen Expenditure Estimates). When this is subtracted, the amount remaining for crew payments is approximately 300,000 FD per year. However, given the fixed costs on the boat, the net profit to the owner is on the same order. Neither amount is sufficient to sustain a household in Djibouti City at the absolute poverty line, i.e. 480,000 FD per year. As a result, boat owners are undoubtedly consuming the income which should be reserved for boat and engine repacement.

Fishermen based in Obock (about 25 fishing families) are in a somewhat better financial position as their household costs are less. The fact that one of the Obock fishermen recently paid cash for a new boat and motor is evidence of an ability to save for equipment replacement (total cost was DF 675,000).

The one-third share reserved for the boat just about covers engine maintenance and fixed costs. However, given the need to consume these amounts, problems arise when boat replacement is necessary. The Cooperative provides credit to fishermen for these purposes. The fishermen were asked how the repayments were dealt with as the Cooperative deducts payments

from fish catches and pays the fishermen the net amount. These discussions revealed that considerable negotiation is taking place as owners are trying to treat these payments as part of running costs, and crews (who are often close family members) are agreeing to accept part but not all of the payments as running costs.

The low incomes of both owners and crew have resulted in two observed tendencies: (1) fishermen find it difficult to recruit crews outside their own families as other activities in the informal sector (e.g. night watchman, petty trader) will pay more and (2) an increasing number of boat owners are fishing alone when they have no household members to fish with them. A continuation of this trend would result in inefficient use of the capital resources (boat and engine) and needs to be countered by increasing the productivity of the units so they can provide employment for more individuals.

The dramatic production response of fishermen to the market demand resulting from the first phase of the project is evidence of the fishermen's desire to increase their incomes. The Phase II Project will double fish sales through the cooperative by developing the retail infrastructure, as well as increasing sales to institutional customers.

With the technology currently used by the fishermen, production and incomes can only be increased by increasing the number of fishing trips. However, given the importance of fuel costs and the disinterest of fishermen in returning to sail power, productivity per fishing trip needs to be enhanced. This will require the introduction of more productive techniques to supplement the handlines currently used, and training fishermen to use them. Information from the research program on the best places to fish at given times of the year will also supplement the knowledge they have from experience. Finally, the value of using diesel-powered inboard motors will be explored to help reduce fuel costs and increase the return to fishermen. It is likely that a combination of all these efforts will be required to increase fishing incomes to an acceptable level, particularly in light of the experience required and capital employed in the fishing effort.

2. <u>On-Shore Fishing Employment</u>

This second group of direct beneficiaries of the project are the persons employed in jobs related to the fishing effort, i.e. boat repairers, co-operative employees, fish sellers, etc.

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Given the nature of Djibouti fisheries industry, in the past there were fewer on-shore jobs than fishing jobs. Very limited sales on-shore provided jobs for perhaps 50 people and only few of these were fishermens wives. A similar number were employed in boat repair, construction and sales of gear and equipment to fishermen. The substantial increases in production are changing this situation and it is expected that by the end of Phase II there will be at least one on-shore job for each fishing job thus supporting 250-300 families (1500-1800 individuals).

These jobs will derive firstly from employment at the Cooperative (30 individuals), the government fishery service (15), operators of retail outlets (20-25 individuals including assistants and casual labors), and fish sellers in the central market (20-30). There are also a number of restaurants in Djibouti which sell primarily fish and a larger number of establishments which have fish as an important element in their overall trade. (One of the fishermen interviewed reported he had opened a fish restaurant which his wife was running.) At least 60 individuals are employed in these establishments in "fish related" jobs. Other jobs will arise from repair of boats and motors, sales of fishing gear, supplies and fuel (both through and to the (cooperative).

As there are limited possibilities for increasing private sector employment, many of these individuals would have the limited and insecure incomes provided by the informal sector or be unemployed. Hence the availability of a locally produced productive resource will provide basic incomes for more than one percent of Djibouti's population (fishermen plus on-the-shore jobs).

B. Indirect Beneficiaries

1. Retail Consumers

The largest group of indirect beneficiaries of the project are the retail consumers in Djibouti City, who will have access to an alternate source of protein, at prices lower than those of meat products. This group will be increasing over the project period from approximately 54,600 individuals (9,100 households) in the year before the project begins to 120,000 individuals (20,000 households) in the final year of the project.

The information presented in section 1.b. above provided evidence of the numbers of households who have difficulty in purchasing sufficient food for their needs and the special needs of poorer neighborhoods on the outskirts of the city. A concern of the social analysis was to establish whether consumers would eat fish and take advantage of this new cheaper source of protein given the food preferences derived from their nomadic background.

Several factors concerning fish consumption were revealed by the analysis:

(1) Fish is not generally available to consumers at prices cheaper than those of meat. Two-thirds of current fish consumers purchase fish from the Central Market where the price of fish is similar to that of the cheaper cuts of mutton or of beef (800 FD per kilo).

(2) Fish is not available generally throughout the city. Retail sales were made only at the Central Market and the ACPM plus the supermarkets. All these locations are in the center of Djibouti. The three supermarkets selling fish charge even higher prices (1000 FD per kilo) than the Central Market).

(3) Interview surveys conducted in three neighborhoods near the center of the city and two further out found that 75% of households were already eating fish an average of twice per month and a further 15% reported a willingness to eat fish if it could be purchased nearer their homes.

(4) There were indications in the interview survey that increased incomes may favor increased fish consumption. It appears that the sample was somewhat biased to middle class consumers (given the large numbers who owned such items as T.V. sets, and the higher than average level of education) and it is possible this was a factor in the high percentage reporting fish consumption. Analysis of the survey data also indicates that fish consumption increased with the level of income. However, other considerations also favor fish consumption, i.e. all interviewees in one poorer area (which was primarily Afar) reported eating fish though amounts purchased per meal were lower.

It is clear from the information that significant numbers of households already consume fish despite difficulties of access. In addition, it appears that fish consumption is not viewed as a cheap substitute for meat, but rather as a means of increasing the variety in the diet (fish consumers

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mentioned taste rather than price as the reason for consuming fish). These facts provide evidence that the Djiboutian population has been affected by the urban life style and the consumption habits of Europeans and Arabs living in the city. Fish is definitely not excluded from the menu.

Eight retail outlets have now opened around the city and seven further outlets will be opened during the Phase II project. These outlets are owned by the government and leased to proprietors. They purchase their fish from the ACPM and sell fish at retail prices only slightly higher than those of the ACPM (which is subject to relatively low control prices). Although there are no control prices on fish sold at the outlets, the ACPM will continue serving retail customers and as such will promote lower prices in the outlets (as will the degree of government control over the proprietors).

The combination of ready access and lower prices, as well as the favorable position of fish (a new product which has been accepted by the wealthier sections of society), should result in rapidly expanding sales. Accordingly, it is feasible to project that 20,000 households will be purchasing and consuming two fish meals per month by the end of the project.

2. Institutional Customers

The largest single wholesale customers of ACPM are WFP and CRS who purchase fish for use in feeding programs. The WFP program is currently caring for 20,000 refugees. However, this number will be lower by the beginning of the Phase II project and should decline to 5,000 or fewer persons by the end of project. CRS is continuing its fish distribution/promotion programs which reach 1,000 mothers and their children per month. This program has assured funding through 1985. It is essential that CRS promotional efforts continue as poorer mothers need to be confident of how to purchase, handle and prepare fish so they can take advantage of the increased availabilities of cheaper fish from the retail centers.

The other wholesale customers of the ACPM are generally businesses and institutions with a firm financial base which have the choice of purchasing fish from the ACPM, other local suppliers, or of importing their requirements. They primarily benefit from having fresh fish available at a cheaper price than the alternative of frozen imports. This market offers considerable benefit to the ACPM as it can absorb production in excess of demand from the retail outlets. In addition, there is the potential for sales of higher priced

products incorporating more value added to the fish.

## III. Participation

Two Djiboutian organizations, the SEP and the ACPM, will be participating in Phase II with the USAID project team. Both these organizations have been actively involved in planning project activities. The ACPM currently includes many of the fishermen in Djibouti and it expected to take on more fishermen members in the next few months (opening of a duty free petrol station at the Cooperative will proved a strong additional incentive to join).

Fishermen are in and out of the ACPM every day, purchasing supplies, making deliveries, and arranging credit for equipment purchases. As a result, it was possible to contact them easily to collect the information on access to boats, fishing incomes and problems during the project design. The officers and the Management Committee will be in daily contact with the Project Team during implementation and will provide regular inputs into decision making. Fishermen will be involved in the research effort especially in the analysis of catches. Phase II will use this involvement as a means of explaining the reasons why the data is being collected and the significance of the findings. Successful implementation of the project will depend upon the impact of the training program in reaching fishermen with new information on fish locations and fishing techniques. A significant impact will only occur with their active participation.

SEP provides continuous support to the ACPM in terms of facilities, personnel, and funding. Phase II responds to the request from SEP to continue technical inputs to the ACPM for a further period to insure its ability to function as an independent entity. A new element in the Phase II project is the assignment of an advisor to SEP who will coordinate training programs, assist SEP in building its own organizational capacity to support the fishing industry, and engage in long range planning.

## IV. Socio-Cultural Feasibility

Socio-cultural feasibility of the project essentially relates to two questions concerning the fishermen and one concerning the consumers. The questions with respect to fishermen relate to their willingness to accept training and the impact of new technology upon them. The question of whether consumers will purchase and eat fish has already been

dealt with above in the discusion of beneficiaries. However, the special problems of reaching the poor are highlighted below.

A. Training for Fishermen

Increasing the productivity of fishermen will depend upon the willingness of fishermen to learn and use new fishing techniques and equipment. The methods used in the training program will have to contend with the socio-cultural reality of the Djibouti fishery.

The strong family structure and the authority of the older fishermen indicates the value of convincing them first of the usefulness of new techniques rather than concentrating on youths who may not have their own boats for some years. The older fishermen are proud men with a detailed knowledge of local fishing conditions, and a belief in the value of the techniques they are currently using.

In addition, fishermen (whether young adults or older men) have learned to fish by working with their father or other relatives. Few of them are literate. Effective training must be by demonstration in concrete fishing situations, not in an abstract classroom setting.

The master fishermen will be working primarily with the Marine Biologist in the first months of the Project, operating the research vessel. He will use this period to test out reels, long lines and other equipment, and develop techniques for their most productive use in the Djiboutian setting. Thereafter approaches will be made to fishermen with reputations as food fisherman and/or authority figures in the fishing community to request an opportunity to test out the equipment on their boats. Demonstration to them of the productivity of these techniques should result in a demand from them and the rest of the fishing community for training in the use of these techniques and equipment.

The rapid and total acceptance of engines rather than sail power indicates the willingness of fishermen to accept and pay for new equipment when they are convinced of the value of the innovation. The current low returns from fishing efforts and low incomes provide a strong incentive for fishermen to accept more productive techniques. The project will ensure that they have an opportunity to learn the techniques in a manner which is approximate to the culture.

2. Impact of New Technology

The possibility of negative social consequences arising from the introduction of new technology has been well documented. In many settings, the capital costs and productivity of new techniques have resulted in a few wealthy members of the fishing community (or those with access to credit) monopolizing the new technology. Other independent fishermen are reduced to working for them as paid crew members at salaries lower than their previous incomes, and many are forced out of fishing altogether.

It is unlikely in Djibouti that these consequences will arise from the innovations contemplated. The new items of equipment to be introduced by the project are low cost in relation to the total costs of the fishing effort, and can be used on the boats already owned by the fishermen. The credit facilities of the ACPM revolving fund is available to all fishermen who are actively fishing and participating in the ACPM. Those individuals who accept the new technology and fish more often will have higher incomes than those who do not. However, this result will arise from individual preference and not from the nature of the technology. In addition, those fishermen who use the new technology will be better able to attract crew members-thus increasing employment in fishing rather than reducing it.

C. Reaching the Poorer Consumers

The preceeding discussion of beneficiaries provided evidence that Djiboutians are eating fish and that it is often the wealthier rather than poorer section of the community who currently have access to this protein food source. Maximizing the social value of the availability of fish and maximizing demand for fish will depend upon sales of fish products to the poor and especially those in the poorest neighborhood which are furthest from the center of the city.

It will be essential that the Marketing Advisor and his collegues pay special attention to these areas and explore the possibility of supplying lower priced products which are acceptable to local taste. A close working relationship will be developed between the ACPM marketing staff and the CRS fish demonstration teams to convey information on any new proucts. It will also be necessary to assure the retail outlets are charging sensible prices. The Economic and Financial Analyses indicate that the proprietors of the retail shops can make high returns from the outlets at retail prices only slightly higher

than those of the ACPM. However, there could be a tendency to charge higher prices to generate the same profits on a lower turnover. SEP and the ACPM/Project Team will have to be vigilant in assurring that this does not occur.

V. Impact

This section of the social analysis considers the likely impact of the project from several points of view. Questions considered are; the likely replication of the project, spread effects including the distribution of benefits, and whether project activities will continue beyond the life of project.

A. Replication

Given the size of Djibouti, the ACPM will remain the only fishing cooperative in the country. However, in the Phase II Project, branch facilities for the ACPM will be established in Obock, thus making it easier for fishermen to exploit the rich fishing grounds of the northern coasts of the country. It is unlikely that the additional management/administrative burdens could be borne by the ACPM in the absence of the project.

B. Spread Effect

The spread effect of the project derives from the creation of capacity on the part of fishermen, the ACPM, and retail outlets to produce, handle/process, and market an increased volume of fish to many more consumers than are purchasing fish at present. This is expected to benefit poorer households and the women who are involved in shopping and preparing meals for their families. The extent to which the benefits are realized by this group will depend on the success of the project in assuring that outlets in low income neighborhoods operate effectively and charge reasonable prices.

3. Continuation of Project Activities Beyond End of Project

Project resources will be focused on training fishermen in more productive techniques, on firmly establishing the capacity of the ACPM to service the needs of fishermen (as well as provide facilities for processing and marketing fish) and on the ability of the GROD to support the fisheries industry. Progress has already been made under the Phase I project in developing the ACPM and it is reasonable to expect

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that the further three years of the Phase II Project will result in an organization which is more capable of independent operation.

Use of new fishing techniques and the continuation of management/processing systems can be expected to continue at or near the productivity levels achieved by the end of the project (EOP). However, it must be recognized that given the scarcity of trained managers in Djibouti and limited skills at all levels, expansion of the fisheries in the period after EOP will probably require further technical inputs from AID or other donors.

## VI. Issues

The three issues considered most important in the social context have already been discussed in the preceeding sections of the social analysis. These are: (1) increasing employment within the fishing industry, (2) the willingness of fishermen and the employees of the ACPM involved in fish processing to learn and apply more productive techniques, and (3) the operation of the retail outlets in a manner which make fish available to consumers (and especially the poorest) at prices within their reach. These issues are critical to project success and must be continuously monitored during project implementation.

Table I

Distribution of Households Monthly Incomes by Deciles and by Quartiles (1000 FD)

| Deciles of households | Quartiles | Anciens quartiers | Cites (1) | Balbala | Entire City |
|---|---|---|---|---|---|
| 0 - 10 % | | 7 - 25 | 15 - 50 | less than 2.5 | 0 - 16.5 |
| 10 - 20 | | 25 - 37 | 50 - 69 | 2.5 - 8 | 16.5 - 28 |
| | 0 - 25 % | 7 - 42 | 15 - 76 | less 2.5 - 5.5 | 0 - 33 |
| 20 - 30 | | 37 - 47.5 | 69 - 84 | 8 - 11.5 | 28 - 40 |
| 30 - 40 | | 47.5 - 58.5 | 84 - 103 | 11.5 - 14.5 | 40 - 55 |
| 40 - 50 | | 58.5 - 70 | 103 - 123 | 14.5 - 19.0 | 55 - 75 |
| | 25 - 50 % | 42 - 70 | 76 - 123 | 5.5 - 19 | 33 - 75 |
| 50 - 60 | | 70 - 85 | 123 - 145 | 19.0 - 24.0 | 75 - 98 |
| 60 - 70 | | 85 - 100 | 145 - 170 | 24 - 31 | 98 - 120 |
| | 50 - 75 % | 70 - 112 | 123 - 190 | 19 - 36 | 75 - 120 |
| 70 - 80 | | 100 - 126 | 170 - 205 | 31 - 43 | 120 - 180 |
| 80 - 90 | | 126 - 170 | 205 - 270 | 43 - 60 | 180 - 260 |
| 90 - 100 | | 170 - 400 | 270 - 550 | 60 - 150 | more than 260 |
| | 75 - 100 % | 112 - 400 | 190 - 550 | 36 - 150 | 120to more than 260 |

(1) The Cites of Enguola, of Stade, and of Progres, not including Arhiba

Source: Enquete P.D.U.D. 1982.

.ble II

## Average Monthly Expenditures of Households by Levels of Income and by Neighborhoods

| ciens / uartiers / opulation ',400* | Housing: Rent | Water charges | Electr. charges | Cooking fuel | Sewerage + Waster removal | S.Total | S.Total 2 | Other Expenditures: Food | Transp. | Educ. | Cloth. | Khat | Household Mainten. | S.Total | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A.E. | 3400 | 1000 | 1000 | 2400 | 200 | 8000 | 18000 | 500 | 400 | 800 | 4300 | | | 6000 | 32000 |
| 'Quartile % | 10.7 | 3.1 | 3.1 | 7.5 | 0.5 | 25.0 | 56.0 | 1.6 | 1.4 | 2.5 | 13.5 | | | 19.0 | 100.0 |
| A.E. | 4500 | 1300 | 3000 | 2900 | 300 | 12000 | 29000 | 1500 | 800 | 1400 | 8300 | | | 12000 | 55000 |
| 'Quartile % | 8.5 | 2.5 | 6.0 | 5.5 | 0.5 | 23.0 | 54.0 | 3.0 | 1.5 | 2.5 | 16.0 | | | 23.0 | 100.0 |
| A.E. | 5000 | 1700 | 4900 | 3000 | 400 | 15000 | 35000 | 3100 | 1400 | 1800 | 14300 | 400 | | 21000 | 71000 |
| 'Quartile % | 7.0 | 2.4 | 6.8 | 4.2 | 0.6 | 21.0 | 49.0 | 4.4 | 2.0 | 2.7 | 20.2 | 0.7 | | 30.0 | 100.0 |
| A.E. | 5200 | 2300 | 7600 | 3300 | 600 | 19000 | 46000 | 6700 | 2000 | 3200 | 20200 | 2900 | | 35000 | 100000 |
| 'Quartile % | 5.2 | 2.3 | 7.6 | 3.3 | 0.6 | 19.0 | 46.0 | 6.7 | 2.0 | 3.2 | 20.2 | 2.9 | | 35.0 | 100.0 |
| A.E. | 4500 | 1700 | 4900 | 3000 | 400 | 14500 | 35500 | 3500 | 1300 | 2000 | 14000 | 1200 | | 22000 | 72000 |
| Average % | 6.2 | 2.3 | 6.8 | 4.2 | 0.5 | 20.0 | 49.0 | 5.0 | 1.8 | 2.8 | 19.5 | 1.9 | | 31.0 | 100.0 |
| :TES | | | | | | | | | | | | | | | |
| opulation 12,600 | | | | | | | | | | | | | | | |
| A.E. | 13000 | 3000 | 9500 | 3500 | | 29000 | 58000 | 7500 | 3000 | 3500 | 19000 | 1000 | | 34000 | 121000 |
| % | 10.5 | 2.5 | 8.0 | 3.0 | | 24.0 | 48.0 | 6.0 | 2.5 | 2.8 | 15.7 | 1.0 | | 28.0 | 100.0 |
| GHIBA | | | | | | | | | | | | | | | |
| opulation 7,900 | | | | | | | | | | | | | | | |
| A.E. | 3400 | | 2000 | 2800 | 600 | 8800 | 33000 | 800 | 200 | 1700 | 6500 | | | 9200 | 51000 |
| % | 6.6 | | 4.0 | 5.2 | 1.2 | 17.0 | 65.0 | 1.5 | 0.5 | 3.3 | 12.7 | | | 18.0 | 100.0 |

.E. Average Monthly Expenditures calculated on the total households interviewed.

' Note Population figures do not add to total population of Djibouti City as the P.D.U.D. study did not cover all areas.

Table II (cont.) Average Monthly Expenditures of Households by Levels of Income and by Neighborhoods

| | Housing | | | | | S.Total | S.Total 2 | Other Expenditures | | | | | S.Total | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Rent | Water charges | Electr. charges | Cooking fuel | Sewerage + Waster removal | | Food | Transp. | Educ. | Cloth. | Khat | Household Mainten. | | |
| BALBALA Population 29,100 | | | | | | | | | | | | | | |
| 1°Quartile A.E. | | | | | | 800 | 6500 | | | | | | 300 | 7600 |
| 1°Quartile % | | | | | | 10.5 | 85.5 | | | | | | 4.0 | 100.0% |
| 2°Quartile A.E. | | | | | | 2000 | 11000 | | | | | | 1000 | 14000 |
| 2°Quartile % | | | | | | 14.0 | 79.0 | | | | | | 7.0 | 100.0% |
| 3°Quartile A.E. | | | | | | 2500 | 16000 | | | | | | 4500 | 23000 |
| 3°Quartile % | | | | | | 11.0 | 70.0 | | | | | | 19.0 | 100.0% |
| 4°Quartile A.E. | | | | | | 3000 | 25000 | | | | | | 15000 | 43000 |
| 4°Quartile % | | | | | | 7.0 | 58.0 | | | | | | 35.0 | 100.0% |
| Average A.E. | | 700 | | 1800 | | 2500 | 18500 | 1300 | 200 | 500 | 6000 | | 8000 | 29000 |
| Average % | | 2.5 | | 6.5 | | 9.0 | 64.0 | 4.4 | 0.6 | 1.5 | 20.5 | | 27.0 | 100.0% |

Source: Enquete Project de Developpment Urbain de Djibouti (P.D.U.D.) 1982.

INCOME AND EXPENDITURE
ACPM 9/80 - 12/81 PROVISIONAL

| | DF | US$ |
|---|---|---|
| EQUIPMENT/GEAR SALES | 4,964,760 | 28,370 |
| SALES OF SEAFOOD PRODUCTS * | 80,960,705 | 462,633 |
| DONATIONS (EQUIPMENT) | 5,300,000 | 30,286 |
| CREDIT SALES (FISH) * | 4,885,835 | 27,919 |
| TOTAL INCOME | DF 96,111,300 | $549,208 |
| OPENING STOCK | - 0 - | - 0 - |
| PURCHASES (SEAFOOD) | + 74,308,300 | 424,619 |
| SUM | 74,308,300 | 424,619 |
| CLOSING STOCK | - 463,085 | 2,646 |
| COST FO GOODS SOLD | DF 73,845,215 | $421,973 |
| GROSS MARGIN | DF 22,266,088 | $127,235 |
| SALARIES AND ALLOWANCES | 8,019,990 | 45,829 |
| PACKING MATERIALS | 261,765 | 1,496 |
| GENERAL EQUIPMENT REPAIRS | 9,000 | 51 |
| VEHICLE REPAIRS | 2,000 | 11 |
| PUBLICITY AND ADVERTISING | 56,700 | 324 |
| OFFICE SUPPLIES | 267,010 | 1,526 |
| POST AND TELEPHONE | 85,785 | 490 |
| RENTAL AND FACILITIES | 940,270 | 5,373 |
| BANK CHARGES | 1,500 | 9 |
| COST OF EQUIPMENT/GEAR SOLD | 4,633,250 | 26,476 |
| | DF 14,277,320 | $81,585 |
| NET PROFIT (LOSS) | DF 7,988,765 | $45,650 |

* Sales were initiated in March, 1981

ACPM PROFIT & LOSS
1/1/82 - 12/31/82 PROVISIONALS

| | DF | US$ |
|---|---|---|
| CASH SALES (FISH) | 102,058,011 | 583,189 |
| CREDIT SALES (FISH) | 4,143,375 | 23,676 |
| EQUIPMENT/GEAR SALES | 5,528,292 | 31,590 |
| BOAT REPAIRS | 7,659,179 | 43,767 |
| TOTAL | DF 119,388,857 | $682,222 |
| OPENING STOCK (FISH) | 463,085 | 2,646 |
| PURCHASES | 80,005,192 | 457,173 |
| SUM | 80,468,277 | 459,819 |
| CLOSING STOCK | 27,195 | 155 |
| COST OF FISH SOLD | DF 80,441,082 | $459,664 |
| GROSS MARGIN | DF 38,947,775 | $222,558 |
| SALARIES & ALLOWANCES | 9,935,623 | 56,775 |
| PACKING MATERIALS | 587,799 | 3,359 |
| GENERAL EQUIPMENT REPAIRS | 171,380 | 979 |
| PUBLICITY AND ADVERTISING | 18,270 | 104 |
| OFFICE SUPPLIES | 526,025 | 3,006 |
| POST AND TELEPHONE | 673,225 | 3,847 |
| RENTAL OF FACILITIES | 3,052,355 | 17,442 |
| BANK CHARGES | 1,000 | 6 |
| COST FO EQUIPMENT/GEAR SOLD | 5,528,292 | 31,590 |
| TAXES & CUSTOMS | 9,000 | 51 |
| BONUSES | 8,550 | 49 |
| | 20,511,519 | $117,208 |
| NET PROFIT (LOSS) | DF 18,436,256 | $105,350 |

ACPM INCOME AND EXPENDITURE
1/1/83 - 6/30/83 PROVISIONALS

| | DF | US$ |
|---|---|---|
| BOAT AND ENGINE REPAIRS | 2,268,920 | |
| BOATS AND MOTOR SALES | 7,755,000 | |
| GEAR AND MATERIALS SALES | 911,465 | 5,208 |
| CASH SALES | 29,662,610 | 169,500 |
| CREDIT SALES | 13,574,160 | 77,547 |
| TOTAL | DF 54,172,155 | $309,555 |
| OPENING STOCK (FISH) | 27,195 | 155 |
| PURCHASES | 35,257,815 | 201,473 |
| SUM | 35,285,010 | 201,628 |
| CLOSING STOCK | 4,014,720 | 22,941 |
| COST OF GOODS (FISH) SOLD | DF 31,270,290 | $178,687 |
| GROSS MARGIN | DF 22,901,865 | $130,868 |
| ACPM SALARIES AND ALLOWANCES | 4,967,930 | 28,388 |
| GENERAL EQUIPMENT REPAIRS, REPLACE. | 733,075 | 4,189 |
| RETIREMENT BENEFITS | 256,250 | 1,464 |
| OFFICE SUPPLIES | 519,030 | 2,966 |
| TEMPORARY STAFF (DAILY HIRE) | 115,655 | 661 |
| CUSTOM DUTIES, TAXES | 31,530 | 180 |
| TRANSPORT OF SPARES | 9,535 | 54 |
| MACHINERY REPAIRS & MAINTENANCE | 8,870. | 51 |
| SPECIAL BONUSES | 4,500 | 26 |
| SEP PLANT USAGE | 2,520,665 | 14,404 |
| POST & TELEPHONE | 105,910 | 605 |
| BANK CHARGES | 500 | 3 |
| EXCEPTIONAL CHARGES (STUDY) | 24,000 | 137 |
| BOAT YARD SUPPLIES | 81,715 | 467 |
| GEAR AND MATERIALS | DF 2,615,605 | $14,946 |
| | DF 11,994,770 | $68,541 |
| NET PROFIT | DF 10,907,095 | $62,327 |

## SEP CONTRIBUTIONS
## TO PHASE II OPERATIONS

SEP has contributed significantly to operation of the ACPM and development of the fisheries industry. Showing historical support (annual averages 1/1/82 - 30/6/83) and increased subventions and support, the GROD contribution can be determined.

| CATEGORY | ANNUAL AVERAGE | LOP | REMARKS |
|---|---|---|---|
| Salaries & Allowances | $60,000 | $270,000 | staff will increases by 50% for boats and counterparts. |
| Electricity | $69,000 | $345,000 | Usage will double in 2 years. |
| Water and Fuel | $4,000 | $20,000 | Usage will double in 2 years. |
| Vehicle Repairs | N/A | $20,000 | Estimate only. |
| Fishing Supplies | $18,000 | - 0 - | |
| Replacements & Repairs | N/A | $39,000 | Building facilities |
| Operations of Vessels | | $36,000 | Starting costs |
| Construction of Dbock facility | total | $600,000 | |
| Miscellaneous (contingency) | | $70,000 | Estimate |
| | | $1,400,000 | |
| Revenue Receipts (ACPM & retail outlets) | | $105,000 | |
| | Net Cost | $1,295,000 | |
| Breakdown year 1 | | 816,000 | |
| year 2 | | 254,000 | |
| year 3 | | 225,000 | |
| year 4 - 10 | | 135,000. | |

ANNEX H

## PRODUCTION LEVELS

Figures are actual purchases at the ACPM, increased 50% for home consumption, spoilage and direct sales by fishermen to consumers.

| DATE | FISH | OTHER | 50% INCREASE | TOTAL |
|---|---|---|---|---|
| March 1979 .... | 20,121kgs | - 0 - | 10,061kgs | 30,182kgs |
| April ..... | 17,991 | 254 | 9,123 | 27,368 |
| May ..... | 16,957 | 358 | 8,658 | 25.973 |
| June ..... | 12,445 | 482 | 6,464 | 19,391 |
| July ..... | 13,312 | 410 | 6,861 | 20,583 |
| August ..... | 16,167 | 311 | 8,239 | 24,717 |
| September ..... | 16,525 | 273 | 8,399 | 25,197 |
| October ..... | 16,414 | 346 | 8,380 | 25,140 |
| November ..... | 16,934 | 196 | 8,566 | 25,698 |
| December ..... | 15,330 | 55 | 7,693. | 23,078 |
| 10 m. total ... | 162,196kgs | 2,687kgs | 82,444kgs | 247,327kgs |
| monthly average | 16,220kgs | 269kgs | 8,244kgs | 24,733kgs |
| January 1980... | 14,490kgs | - 0 - | 7,245kgs | 21,735kgs |
| February ..... | 14,686 | 153 | 7,420 | 22,259 |
| March ..... | 19,196 | 363 | 9,780 | 29,339 |
| April ..... | 22,536 | 666 | 11,601 | 34,803 |
| May ..... | 22,544 | 713 | 11,629 | 34,886 |
| June ..... | 15,700 | 457 | 8,079 | 24,236 |
| July ..... | 16,109 | 400 | 8,255 | 24,764 |
| August ..... | 17,653 | 688 | 9,171 | 27,512 |
| September ..... | 15,604 | - 0 - | 7,802 | 23,406 |
| October ..... | 17,448 | - 0 - | 8,724 | 26,172 |
| November ..... | 17,267 | 82 | 8,675 | 26,024 |
| December ..... | 12,071 | - 0 - | 6,036 | 18,107 |
| 12 m total | 205,604kgs | 3,522kgs | 104,417kgs | 313,543kgs |
| monthly average | 17,134kgs | 294kgs | 8,701kgs | 26,129kgs |

| DATE | FISH | OTHER | 50% INCREASE | TOTAL |
|---|---|---|---|---|
| January 1981 .... | 16,289kgs | 130kgs | 8,209kgs | 24,628kgs |
| Februrary ..... | 18,973 | 195 | 9,584 | 28,752 |
| March ..... | 20,667 | 260 | 10,464 | 46,770 |
| April ..... | 30,515 | 665 | 15,417 | 43,250 |
| May ..... | 28,131 | 702 | 14,417 | 43,250 |
| June ..... | 23,169 | 999 | 12,084 | 36,252 |
| July ..... | 18,138 | 285 | 9,212 | 30,378 |
| August ..... | 19,584 | 668 | 10,126 | 30,378 |
| September ..... | 25,579 | 1,074 | 13,327 | 39,980 |
| October ..... | 30,267 | 66 | 15,167 | 45,500 |
| November ..... | 33,792 | 39 | 16,916 | 50,747 |
| December ..... | 26,625 | 125 | 13,375 | 40,125 |
| 12 m. total ... | 291,729kgs | 5,208kgs | 148,47kgs | 445,408kgs |
| monthly average | 24,311kgs | 434kgs | 12,373kgs | 37,117kgs |
| January 1982 .... | 27,200kgs | 41kgs | 13,621kgs | 40,862kgs |
| February ..... | 26,974 | 41 | 13,508 | 40,523 |
| March ..... | 31,067 | 91 | 15,579 | 46,737 |
| April ..... | 25,081 | 941 | 12,980 | 38,939 |
| May ..... | 29,200 | 897 | 15,049 | 45,146 |
| June ..... | 17,744 | 383 | 9,064 | 27,191 |
| July ..... | 16,856 | 294 | 8,575 | 25,725 |
| August ..... | 21,485 | 1,090 | 11,288 | 33,863 |
| September ..... | 18,393 | 344 | 9,369 | 28,106 |
| October ..... | 27,097 | 28 | 13,563 | 40,688 |
| November ..... | 34,394 | 7 | 17,201 | 51,602 |
| December ..... | 19,311 | 6 | 9,609 | 28,926 |
| 12 m. total ... | 294,739kgs | 4,157kgs | 139,797kgs | 438,693kgs |
| monthly average | 24,562kgs | 346kgs | 11,650kgs | 36,558kgs |
| January 1983 | 27,425kgs | 10kgs | 13,713kgs | 41,148kgs |
| February | 20,640 | 5 | 10,323 | 30,968 |
| March | 13,071 | 9 | 6,540 | 19,620 |
| April | 31,124 | 539 | 15,832 | 47,495 |
| May | 24,711 | 622 | 12,667 | 38,000 |
| June | 14,260 | 691 | 7,476 | 22,427 |
| 6 m total | 131,231kgs | 1,876kgs | 66,551kgs | 199,658kgs |
| monthly average | 21,872kgs | 313kgs | 11,092kgs | 33,277kgs |

## CURRENT "ACPM" FLEET

The following figures reflect data collected by IFAD during 1982 and show annual averages

| BOAT SIZE | NO. | CREWS | DELIVERIES | CATCH PER PERSON |
|---|---|---|---|---|
| Small (Houri) | 56 | 112 | 287 | 2,108 kgs |
| Large (Boutre) | 7 | 35 | | |

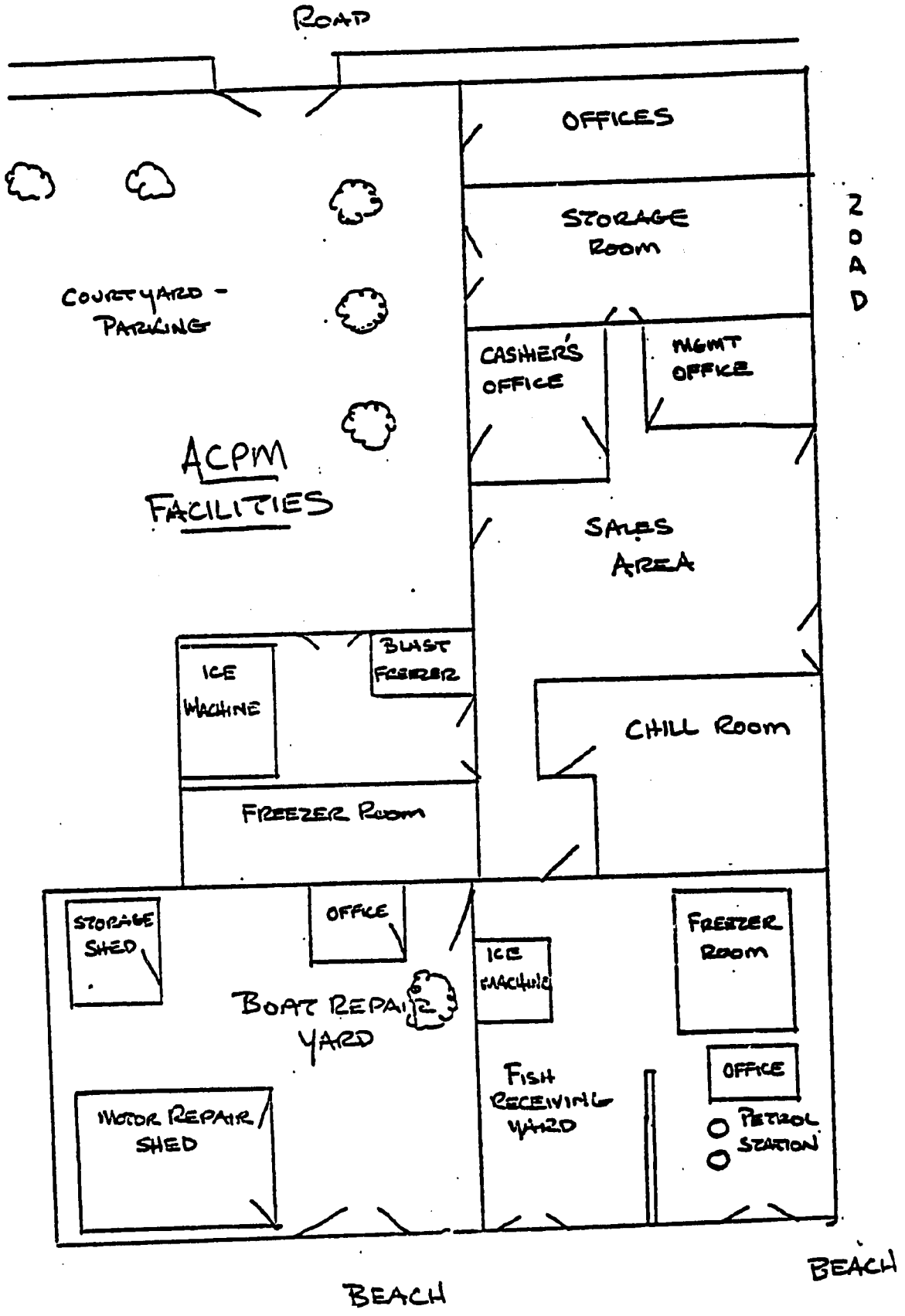
The available boats peaked at 69 houris (in March, 1982) and 18 boutres (in June, 1982). Since 1982 three additional boutres have been repaired and put back in operation, as have three houris. Ten new bourtres (7 m. fiberglass) have been sold to fishermen through the revolving fund of the ACPM. This brings the known number of craft supplying the ACPM at various times to 31 large boats and 72 small boats. With five fishermen per large boat and two fishermen per small boat, the number of fishermen would seem to stand at 299 individuals.

These figures include all craft and fishermen who have marketed at least some portion of their catch through the ACPM. It is known that certain fishermen sell their entire catch through independent sale outlets or directly to consumers. Their fleet is estimated at five large boats and fifteen small boats, served by 55 fishermen. It should be noted that even fishermen who sell their catch to the ACPM may well sell fish to clients directly. Based on interviews and measurements of sales at certain markets, in addition to home consumption and spoilage, disposal outside ACPM probably exceeds 50% of ACPM sales (or one-third of all catches).

Distribution of Credit Sales (ACPM)
(for the period from 10/01/82 - 12/31/82)

| Category | Client | No. of purchases | Quantity in kgs. | % of total | Value in DF | % of total |
|---|---|---|---|---|---|---|
| (1) Retailers | Fishery Dikhil | 4 | 135 | | 40,500 | |
| | Duchateau, M. | 3 | 40 | | 11,400 | |
| | Abdou Dikhil | 4 | 111 | | 35,300 | |
| | Said Idriss | 1 | 9 | | 2,700 | |
| | Daskalakis (ship-chandler) | 9 | 233 | | 70,300 | |
| | Solomondis ( -"- ) | 3 | 134 | | 40,200 | |
| Sub-Total: | | | 662 | 2.3% | 200,400 | 2.0% |
| (2) Hotels | Arta (incl. school hotel) | 29 | 405 | | 212,200 | |
| | Sheraton | 12 | 337 | | 163,980 | |
| | Plein Ciel | 7 | 85 | | 32,150 | |
| Sub-Total: | | | 827 | 2.7% | 408,330 | 4.0% |
| (3) Restaurants | Ougoul | 12 | 125 | | 67,150 | |
| | Le Kintz | 4 | 30 | | 26,000 | |
| | Longchamps | 10 | 71 | | 22,965 | |
| | Siesta | 11 | 85 | | 43,950 | |
| | Palais d'Asie | 1 | 43 | | 60,200 | |
| | Youssouf | 91 | 4.324 | | 1,484,625 | |
| Sub-Total: | | | 4.678 | 16.5% | 1,704,890 | 16.8% |
| (4) Military Institutions | DA 188 Mess | 1 | 26 | | 26,000 | |
| | Cercle Mess Off | 5 | 85 | | 139,000 | |
| | 10e BCS ord. | 2 | 102 | | 35,000 | |
| | Armee Nat. (H.H.) | 3 | 180 | | 54,000 | |
| | 13e DBLE Cercle | 1 | 10 | | 7,000 | |
| | Comm. Riviere | 8 | 245 | | 172,500 | |
| | Armee Nat. (ord.) | 22 | 1.193 | | 346,750 | |
| | 13e DBLE (ord.) | 12 | 1.780 | | 396,500 | |
| | 5e ROIM (ord.) | 19 | 1.455 | | 800,250 | |
| | Military Hospital | 10 | 300 | | 114,000 | |
| Sub-Total: | | | 5.367 | 18.7% | 2,148,000 | 21.3% |

| Category | Client | No. of purchases | Quantity in kgs. | % of total | Value in DF | % of total |
|---|---|---|---|---|---|---|
| (5) Social Institutions | CFPA (school) | 6 | 65 | | 45,650 | |
| | Hospital Peltier | 9 | 525 | | 157,500 | |
| Sub-Total: | | | 590 | 2.4% | 203,150 | 2.0% |
| | Protection M&E | 22 | 659 | | 319,800 | |
| | CRS-UNICEF | 46 | 3.483 | | 1,077,500 | |
| | CRS | 40 | 10.372 | | 3,203,900 | |
| Sub-Total: | | | 14.514 | 50.2% | 4,601,300 | 45.4% |
| (6) Miscellaneous | | 64 | 2.088 | 7.2% | 850,020 | 8.5% |
| Total: | 32 Clients | 539 | 28.835 | 100.0% | 10,116,090 | 100.0% |


ROAD
OFFICES
STORAGE ROOM
ROAD
COURTYARD - PARKING
CASHIER'S OFFICE
MGMT OFFICE
ACPM FACILITIES
SALES AREA
ICE MACHINE
BLAST FREEZER
CHILL ROOM
FREEZER ROOM
STORAGE SHED
OFFICE
ICE MACHINE
FREEZER ROOM
BOAT REPAIR YARD
FISH RECEIVING YARD
OFFICE
MOTOR REPAIR SHED
PETROL STATION
BEACH
BEACH

## PROJECT TRAINING PLAN

| PARTICIPANT(S) | | ACTIVITY | LOCATION | LENGTH | TIME (YEARS) 1 1st 2nd 3rd 4th | 2 1st 2nd 3rd 4th | 3 1st 2nd 3rd 4th |
|---|---|---|---|---|---|---|---|
| Experienced Fishermen | (40) | Equipment/Gear Demonstration | At Sea | Each 5 days per year or 60 person days quarter (10 groups) | 60pd → | → | → |
| Crew Fishermen | (50) | Formal Training and Demos. | Sea | Each 1 day week for 6 months, groups) | 120pd → | → | → |
| Fisheries Biologist counterpart | (1) | Formal Training | 3rd world U.S.A. | Year | ↔ | ↔ | |
| Boat Captain | (2) | Formal Training | 3rd world, U.S.A. | Quarter | ↔ | | |
| Boat Crew | (4) | Field Trained | At Sea | One Quarter | ↔ | | |
| Fish Handlers | (14) | on-the-job | Djibouti | One month | ↔ | | |
| Management - ACPM | (2) | on-the-job | Djibouti | Continuous | → | → | → |
| Administration - SEP | (2) | on-the-job | Djibouti | Continuous | → | → | → |
| Retail Outlet Operators | (15) | Formal | Djibouti | 1 day per week for 2 months (3 groups) | 40pd ↔ ↔ | ↔ | |
| TOTAL | 130 | | | | | | |

# 5C(1) - COUNTRY CHECKLIST

Listed below are statutory criteria applicable generally to FAA funds, and criteria applicable to individual fund sources: Development Assistance and Economic Support Fund.

## A. GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

1. FAA Sec. 481; Second CR FY 83 Sec. 133. Has it been determined that the government of the recipient country has failed to take adequate steps to prevent narcotic drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully? — NO

2. FAA Sec. 620(c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) the debt is not denied or contested by such government? — NO

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| 3. | FAA Sec. 620(e)(1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities? | NO |
| 4. | FAA Sec. 532(c), 620(a), 620(f), 620D; FY 1982 Appropriation Act Secs. 512 and 513. Is recipient country a Communist country? Will assistance be provided to Angola, Columbia, Cuba, Laos, Vietnam, Syria, Libya, Iraq, or South Yemen? Will assistance be provided to Afghanistan or Mozambique without a waiver? | NO |
| 5. | ISDCA of 1981 Secs. 724, 727, 728 and 730. For specific restrictions on assistance to Nicaragua, see Sec. 724 of the ISDCA of 1981. For specific restrictions on assistance to El Salvador, see Secs. 727, 728 and 730 of the ISDCA of 1981. | N/A |
| 6. | FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction by mob action of U.S. property? | NO |

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| 7. | FAA Sec. 620(l). Has the country failed to enter into an agreement with OPIC?<br><br>(b) If so, has any deduction required by the Fisherman's Protective Act been made. | NO |
| 8. | FAA Sec. 620(o); Fisherman's Protective Act of 1967, as amended, Sec. 5. (a) Has the country seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters? (b) If so, has any deduction required by the fisherman's Protective Act been made? | NO |
| 9. | FAA Sec. 620(q); FY 1982 Appropriation Act Sec. 517. (a) Has the government of the recipient country been in default for more than six months on interest or principal of any AID loan to the country? (b) Has the country been in default for more than one year on interest or principal on any U.S. loan under a program for which the appropriation bill appropriates funds? | NO. |
| 10. | FAA Sec. 620(s). If contemplated assistance is development loan or | To be filled in by AID/W. |

from Economic Support Fund, has the Administrator taken into account the amount of foreign exchange or other resources which the country has spent on military equipment? Reference may be made to the annual "Taking into Consideration" memo: "Yes, taken into account by the Admninistrator at time of approval of Agency OYB". This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)

11. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption?

NO

12. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the AID Administrator in determining the current AID Operational Year Budget?

Payments appear to be up to date as far as USAID/Djibouti has been able to determine.

13. FAA Sec. 620A; FY 1982 Appropriation Act Sec. 520. Has the country aided or abetted, by granting sanctuary from prosecution to, any individual or group which has committed an act of international terrorism?

NO

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| | Has the country aided or abetted, by granting sanctuary from prosecution to, any individual or group which has committed a war crime? | |
| 14. | FAA Sec 666. Does the country object, on the basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. who is present in such country to carry out economic development programs under the FAA? | NO |
| 15. | FAA Sec. 669, 670. Has the country, after August 3, 1977, delivered or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards? Has it transferred a nuclear explosive device to a non-nuclear weapon state, or if such a state, either received or detonated a nuclear explosive device, after August 3, 1977? (FAA Sec. 620E permits a special waiver of Sec. 669 for Pakistan). | NO |
| 16. | ISDCA of 1981 Sec. 720. Was the country represented at the Meeting of Ministers of Foreign Affairs and Heads of Delegations of the Non-Aligned Countries to the 36th General Session of the General Assembly of the U.N. of Sept. 25 and 28, 1981, and failed to disassociate itself from the communique issued? If so, has the President taken it into account? | Not known, to be filled in by AID/W. |

17. ISDCA of 1981 Sec. 721. See special requirements for assistance to Haiti. N/A

B. FUNDING SOURCE CRITERIA FOR COUNTRY ELIGIBILITY

1. Development Assistance Country Criteria N/A

a. FAA Sec. 116. Has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, can it be demonstrated that contemplated assistance will directly benefit the needy?

2. Economic Support Fund Country Criteria NO

a. FAA Sec. 502B. Has it been determined that the country has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, has the country made such significant improvements in its human rights record that furnishing such assistance is in the national interest?

b. ISDCA of 1981, Sec. 725(b). If ESF is to be furnished to Argentina, has the President certified that (1) the Govt. of Argentina has made significant progress in human rights; and (2) the provision of such assistance is in the national interests of the U.S.? N/A

c. ISDCA of 1981, Sec. 726(b). N/A
If ESF assistance is to be furnished to Chile, has the President certified that (1) the Govt. of Chile has made significant progress in human righ (2) it is in the national interest of the U.S.; and (3) the Govt. of Chile is not aiding international terrorism and has taken steps to bring to justice those indicted in connection with the murder of Orlando Letelier?

## 5C(2) PROJECT CHECKLIST

Listed below are statutory criteria applicable to projects. This section is divided into two parts. Part A. includes criteria applicable to all projects. Part B. applies to projects funded from specific sources only: B.1. applies to all projects funded with Development Assistance Funds, B.2. applies to projects funded with Development Assistance loans, and B.3. applies to projects funded from ESF.

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| CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? HAS | YES |
| STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT? | YES |

A. GENERAL CRITERIA FOR PROJECT

1. FY 1982 Appropriation Act Sec. 523; FAA Sec. 634A; Sec. 653(b); Second CR FY 83, Sec. 101(b)(1).

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| (a) Describe how authorizing and appropriations committees of Senate and House have been or will be notified concerning the project; | To be filled in by AID/W. |
| (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than $1 million over that amount)? | yes |
| (c) If the proposed assistance is a new country program or will exceed or cause the total assistance level for the country to exceed assistance amounts provided to such country in FY 82, has a notification been provided to Congress? | NO |

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| | (d) If the proposed assistance is from the $85 million in ESF funds transferred to AID under the Second CR for FY 83 for "economic development assistance projects", has the notification required by Sec. 101(b)(1) of the Second CR for FY 83 been made? | N/A |
| 2. | FAA Sec. 611(a)(1). Prior to obligation in excess of $100,000, will there be (a) engineering, financial or other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance? | yes<br>yes |
| 3. | FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance? | No special legislation is required. |
| 4. | FAA Sec. 611(b); FY 1982 Appropriation Act Sec. 501. If for water or water-related land resource construction, has project met the standards and criteria as set forth in the Principles and Standards for Planning Water and Related Land Resources, dated October 25, 1973? | N/A |
| 5. | FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed $1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's | N/A |

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| | capability effectively to maintain and utilize the project? | |
| 6. | FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. | NO |
| 7. | FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; and (c) encourage development and use of cooperatives, and credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions. | This Project will strengthen Djibouti's ability to utilize marine resources in the most efficient and effective manner. |
| 8. | FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise). | Contractor will be U.S. firm. |
| 9. | FAA Sec. 612(b), 636(h); FY 1982 Appropriation Act Sec. 507. Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and othe services, | The GROD will be contributing $1.4 million in local currency, roughly 32% of GROD and ATD costs. There are no U.S.-owned local currencies. |

and foreign currencies owned by the U.S. are utilized in lieu of dollars.

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| 10. | FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release? | NO |
| 11. | FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise? | YES |
| 12. | FY 1982 Appropriation Act Sec. 521. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injur to U.S. producers of the same, similar or competing commodity? | N/A |
| 13. | FAA 118(c) and (d). Does the project comply with the environmental procedures set forth in AID Regulation 16?. Does the project or program take into consideration the problem of the destruction of tropical forests? | YES |

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| 14. | FAA 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (dollars or local currency generated therefrom)? | N/A |
| 15. | FAA Sec. 128; Second CR FY 83, Sec. 101(b)(2). Has an attempt been made to finance productive facilities, goods, and services which will expeditiously and directly benefit those living in absolute poverty under the standards adopted by the World Bank? | YES |
| B. | FUNDING CRITERIA FOR PROJECT<br>1. Development Assistance Project Criteria | |
| | a. FAA Sec. 102(b), 111, 113, 281(a). Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (b) help develop cooperatives, | N/A - Project is ESF Grant. |

especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries?

b. FAA Sec. 103, 103A, 104, 105, 106. Does the project fit the criteria for the type of funds (functional account) being used? N/A

c. FAA Sec. 107. Is emphasis on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)? N/A

d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)? N/A

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| e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"? | N/A |
| f. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth? | N/A |
| g. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in government processes essential to self-government. | N/A |
| 2. Development Assistance Project Criteria (Loans only) | |
| a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, at a reasonable rate of interest. | N/A - Project is ESF Grant. |

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| b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan? | N/A |
| c. ISDCA of 1981, Sec. 724 (c) and (d). If for Nicaragua, does the loan agreement require that the funds be used to the maximum extent possible for the private sector? Does the project provide for monitoring under FAA Sec. 624(g)? | N/A |
| d. Second CR FY 83, Sec. 134. If the recipient country has an annual per capita gross national product greater than $795 but less than $1,285, will the loan be repayable within 25 years following the date on which funds are initially made available? If it has an annual per capita GNP greater than or equal to $1,285, within 20 years? | N/A |
| 3. Economic Support Fund Project Criteria | |
| a. FAA Sec. 531(a). Will this assistance promote economic or political stability? To the extent possible, does it reflect the policy directions of FAA Section 102? | YES |

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| b. FAA Sec. 531(c). Will assistance under this chapter be used for military, or paramilitary activities? | NO |
| c. FAA Sec. 534. Will ESF funds be used to finance the construction of the operation or maintenance of, or the supplying of fuel for, a nuclear facility? If so, has the President certified that such use of funds is indispensable to non-proliferation objectives? | NO |
| d. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made? | N/A |
| e. Second CR FY 83, Sec. 101(b)(1). If ESF funds to be utilized are part of the $85 million transferred to AID under the Second CR for FY 83 for "economic development assistance projects", will such funds be used for such projects and not for non-development activities including balance of payments support, commodity imports, sector loans, and program loans? | N/A |

5C(c) - STANDARD ITEM CHECKLIST

Listed below are the statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. Procurement

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| 1. FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed? | YES |
| 2. FAA Sec. 604(a). Are there arrangements to permit U.S. small business to participate equitably in the furnishings of commodities and services financed? | YES |
| 3. FAA Sec. 604(a). If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company? | YES |
| 4. FAA Sec. 604(e); ISDCA of 1980 Sec. 705(a). If offshore procurement of agricultural commodity or | N/A |

product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.)

5. FAA Sec. 604(a). Will construction or engineering services be procured from firms of countries otherwise eligible under Code 941, but which have attained a competitive capability in international markets in one or these areas? — NO

6. FAA Sec. 603. Is the shipping excluded from compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent that such vessels are available at fair and reasonable rates? — NO

7. FAA Sec. 621. If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the — YES

fullest extent practicable? If the facilities of other Federal agencies will be utilized, are they particularly suitable not competitive with private enterprise, and made available without undue interference with domestic programs?

8. International Air Transport. Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will U. S. carriers be used to the extent such service is available? — YES

9. FY 1982 Appropriation Act Sec. 504. If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States? — YES

B. Construction

1. FAA Sec. 601(d). If capital (e.g., construction) project, will U.S. engineering and professional services to be used? — N/A

2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable? — YES

3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed $100 million (except for productive enterprises in Egypt that were described in the CP)? — NO

C. Other Restrictions

1. FAA Sec. 122(b). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter? — N/A

2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights? — N/A

3. FAA Sec. 620(b). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the communist-bloc countries? — YES

4. Will arrangements preclude use of financing:

a. FAA Sec. 104(f); FY 1982 Appropriation Act Sec. 526: (1) To pay for performance of abortions as a method of family planning or to motivate or coerce persons to practive abortions; (2) to pay for performance of involuntary sterilization as method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization; (3) to pay for any biomedical research which relates, in whole or part, to methods or the performance of abortions or involuntary sterilizations as a means of family planning; (4) to lobby for abortion?

b. FAA Sec. 620(g). To compensate owners for expropriated nationalized property? YES

c. FAA Sec. 660. To provide training or advice or provide any financial support for police, prisons, or other law enforcement forces, except for narcotics programs? YES

d. FAA Sec. 662. For CIA activities? YES

e. FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained? YES

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| f. FY 1982 Appropriation Act, Sec. 503. To pay pensions, annuities, retirement pay, or adjusted service compensation for military personnel? | YES |
| g. FY 1982 Appropriation Act, Sec. 505. To pay U.N. assessments, arrearages for dues? | YES |
| h. FY 1982 Appropriation Act, Sec. 506. To carry out provisions of FAA section 209(d) (Transfer of FAA funds to multilateral organizations for lending)? | YES |
| i. FY 1982 Appropriation Act, Sec. 510. To finance the export of nuclear equipment, fuel, or technology or to train foreign nationals in nuclear fields? | YES |
| j. FY 1982 Appropriation Act, Sec. 511. Will assistance be provided for the purpose of aiding the efforts of the government of such country to represss the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights? | NO |
| k. FY 1982 Appropriation Act, Sec. 515. To be used for publicity or propaganda purposes within U.S. not authorized by Congress? | YES |

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR FOR AFRICA

FROM: AFR/PD, Norman Cohen

SUBJECT: Djibouti - Source/Origin Procurement Waiver for Vehicle

Problem: Request for a procurement source/origin waiver from Geographic Code 000 (USA) to Geographic Code 935 (Special Free World), and a waiver of the provision of Section 636(i) of the FAA.

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| A. | Cooperating Country: | Djibouti |
| B. | Authorizing Document: | Project Agreement |
| C. | Project Title: | Fisheries Development Phase II/603-000 |
| D. | Nature of Funding: | ESF Grant |
| E. | Description of Commodities: | Vehicle |
| F. | Approximate Value: | $15,000 |
| G. | Probable Origin: | Japan |
| H. | Probable Source: | Djibouti |

Discussion: The goal of the Fisheries Development Phase II Project is to strengthen the Djiboutian fisheries industries for the full utilization of local marine resources to the extent which is conducive to a stable resource base. The AID project will assist in achievement of that goal by helping to establish fishing, processing and marketing systems which are most efficient and effective for the Djiboutian setting. The design and establishment of these systems will be carried out by technical assistance personnel, supported by training programs and a limited amount of commodities. This waiver deals with one of those commodities required to carry out these tasks, namely a vehicle for transportation of personnel. The type of vehicle that will be used should be four-wheel drive, long-wheel base of rugged construction and capable of pulling a trailer and carrying nine people. The vehicle will transport personnel to various sites in Djibouti, possibly for some movement of goods or boats, and capable of traveling in the desert on poor roads.

Justification: Vehicles presently used by the Association Cooperative de Pecheurs Maritimes (Marine Fishermen's Cooperative Association) and the Fisheries Department of the Government of Djibouti are all Japanese in make. The Fisheries Department has agreed to repair and maintain project vehicles, but requires uniformity of type. This enables the Department to hold a stock of spares, save time and money, and to maintain a uniformity of the transport fleet. The mechanics are only familiar with this type of vehicle and all

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tools were purchased for the garage with these vehicles in mind. There are no U.S. vehicle firms operating in Djibouti and only French and Japanese firms have outlets. It is our opinion that special circumstances exist which justify waiving the source/origin requirements as set forth under Handbook 1, Supplement B, Chapter 4, Section 4C 2d for vehicles and that these circumstances also satisfy the criteria for waiver as set forth in Handbook 1, Supp. B, Chapter 5, Section 5B4a (2).

Recommendation: For the above reasons, it is recommended that you: approve a source/origin waiver in the amount of $15,000 to permit the procurement of above vehicle from countries included in Geographic Code 935; conclude that special circumstances exist which merit a waiver of the provisions of Section 636(i) of the FAA and certify that exclusion of procurement from Free World countries other than the cooperating country and countries included in Code 941 would seriously impede attainment of U.S. foreign policy objectives and objectives of the foreign assistance program.

Clearances:

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|---|---|---|---|
| AID Rep.:JLundgren | (draft) | Date | |
| AFR/EA:REney | | Date | 12/21/83 |
| SER/COM/ALI:GFuller | (draft) | Date | 12/20/83 |
| GC/AFR:DRobertson | | Date | 12-21-83 |
| AFR/PD/EAP:JHeard | | Date | 12/21/83 |

Drafted:AFR/PD/EAP, EKerst:dph:12/16/83

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