

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT PAPER FACESHEET		1. TRANSACTION CODE <input type="checkbox"/> A A = ADD C = CHANGE D = DELETE	PP
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5. PROJECT NUMBER (7 digits) <input type="checkbox"/> 603-0003 <input type="checkbox"/>		4. DOCUMENT REVISION NUMBER Original <input type="checkbox"/>	
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10. ESTIMATED COSTS (\$000 OR EQUIVALENT \$1 -)						
A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. TOTAL	E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL	NA		NA	828	150	978
(GRANT)	()	()	()	()	()	()
(LOAN)	()	()	()	()	()	()
OTHER U.S. 1.	PROJECT PAPER					
2.	AMENDMENT					
HOST COUNTRY					394	394
OTHER COUNTRY FAC				150		150
TOTALS				978	544	1522

11. PROPOSED BUDGET APPROPRIATED FUNDS (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY <u>79</u>		H. 2ND FY <u>80</u>		K. 3RD FY <u>81</u>	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT	M. LOAN
(1) FN	323	314		498				480	
(2)									
(3)									
(4)									
TOTALS				498				480	

A. APPROPRIATION	N. 4TH FY		O. 5TH FY		LIFE OF PROJECT		12. IN-DEPTH EVALUATION SCHEDULED MM YY <input type="checkbox"/> 1 <input type="checkbox"/> 08 <input type="checkbox"/> 2
	Q. GRANT	P. LOAN	R. GRANT	S. LOAN	T. GRANT	U. LOAN	
(1)					978		
(2)							
(3)							
(4)							
TOTALS						978	

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

NA 1 = NO
2 = YES

14. ORIGINATING OFFICE CLEARANCE				15. DATE DOCUMENT RECEIVED IN AID 'W. OR FOR AID 'W' DOCUMENTS, DATE OF DISTRIBUTION			
SIGNATURE				MM DD YY 0 5 0 1 8 1			
TITLE		DATE SIGNED					
Acting Dir., Office of Eastern Africa Affairs							

DJIBOUTI: FISHERIES DEVELOPMENT PROJECT PAPER
(603-003) AMENDMENT

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PART I

SUMMARY AND RECOMMENDATION

A. Recommendation

USAID/Djibouti recommends the approval of this Project Amendment for the Djibouti Fisheries Development Project (603-0003) providing an additional \$480,000 funding. The amendment would bring total life-of-project funding to \$978,000, and extend project life by 18 months until August 31, 1983.

B. Project Description

The Fisheries Development Project (603-003) was approved and authorized for two years in January, 1979 for total funding of \$498,000.00. Funds were fully obligated in August, 1979 and a contract was signed with Resources Development Associates in March, 1980. This contract action was some 14 months after the project was authorized.

The project addresses the development of Djibouti's artisanal fishing industry through assistance to small fishermen to establish a more viable system for the improved harvesting, handling/storage and marketing of fish. The successful completion of the project will result in an improved nutritional status for the poor majority of Djiboutians, as well as increased income for nearly 300 fishermen, merchants and other artisans in the fishing industry. It will also develop an institutional ability to support or augment private sector initiatives in the fishing industry.

The fishing industry plays a relatively minor role in Djibouti's economy, although the potential of that industry has been assessed at much higher levels. The eventual contributions of this sector to the economy may be substantial, since nearly 95% of Djibouti's food requirements are currently imported, including most of its animal protein. For a variety of reasons, the majority of Djiboutians traditionally obtain their animal protein from sheep and goats. This is evident from the fact that per capita fish consumption is less than one kilogram per annum. Most fish consumption occurs in the City of Djibouti and the coastal towns of Obock and Tadjoura.

The fishing subsector is small in both absolute and relative terms, consisting of an estimated 250-300 artisanal fishermen, a dozen fish merchants, and about 50 small businesses in the service sector supporting the fishing industry. In addition, there are significant numbers of Yemeni fishermen who harvest some 40% of Djibouti's current annual production. Of the fish that is presently sold there are several observations relevant to this project. Namely,

city consumption accounts for most of Djibouti's total fish consumption; the great majority of fish are sold at the Central Market and no fish are sold at four other public city markets; fish is invariably sold fresh with little or no ice used for preservation or storage; fish prices compared very favorably with those of meat; the distribution system is inadequate; and, demand is supplied almost entirely by city-based fishermen.

These points can be examined in more detail.

Specifically, outside of the families of fishermen (who consume an estimated 20 percent (20%) of the catch), urban dwellers are the group most accustomed to including fish in their diets. As a result, the city, which accounts for approximately 40 percent (40%) of the entire population, is the center for both landings and consumption. The towns of Obock and Tadjoura account for most of the remainder with only a negligible amount of fish reaching the interior.

The principal inputs of the proposed two and one-half year project are provided by AID, the Government of the Republic of Djibouti, and French economic assistance (FAC). AID inputs total \$498,000, and include the provision of technical assistance, commodities (including improved fishing gear and fish preservation equipment), participant training, funds for demonstration and education to promote fish consumption, and an evaluation of the project (see Section II.B.3 for details). The Djibouti Government provides the equivalent of \$214,000 or 30 percent (30%) of the total project costs, including staff salaries, support and operating costs, utilities and promotion/demonstration activities. FAC will provide approximately \$150,000.

The project will strengthen Djibouti's system of fish harvesting, handling/storage, and marketing, and will make fish available to a target population that is largely poor and that has an identified need for improvements in its diet and nutritional status. The project benefits will be an estimated 100% increase in the consumption of fish over the life of the project. This will be principally from introducing fish to new areas of the city and nearby communities but may also be caused by an overall increase in the fish consumption of population groups who currently eat some fish and who will now have increased availability.

The technical feasibility of the project confirms that the project will help fishermen to increase their harvesting of under-utilized resources. These activities are ideally suited to the technical conditions in Djibouti. Project inputs are directed almost equally at harvesting, storage/handling, and marketing, and involve no radical innovations.

The economic feasibility of the project is predicated on the premise that the exploitation of one of Djibouti's few natural resources constitutes an investment which is economically sound in the long run, offsetting requirements for food imports, enhancing the nutritional status of the poor majority, and increasing employment and income. In addition, the annual rate of return for the project is estimated at over 25% by the third and final year of the project.

The financial analysis demonstrates that GROD will be able to finance the recurrent costs of the project, since only an estimated six new government employees are required to carry out the project, and to sustain project activities after the completion of the project. Much of the eventual success of the project will be contingent on a responsive private sector.

The social soundness of the project is predicated on the fact that the project is designed to enhance the role of existing fishermen and of new entrants into that industry, through appropriate technology and cooperative organization. Thus, the prime beneficiaries of the project are fishermen and consumers, with merchants receiving some benefits (as well as additional competition, in all probability).

The Project Paper proposed that based upon an evaluation of the project, six months prior to its termination, a determination would be made as to not only the successful impact of the project but whether or not a follow-on project is warranted. The Project Paper also indicated that the project is experimental in nature. However, an initial analysis of the project indicated that the principal problem was largely a technical obstacle, i.e., increasing the fish catch.

The marketing/consumption issue was considered the second most important. However, further analysis has reversed the priorities assigned to these development problems. The more critical constraint is now believed to be the ability (or inability) to market additional fish. Without increased consumer demand the other proposed improvements are not likely to result in any noticeable impact on the program goal of upgrading the nutritiaonal status of poor Djiboutians. The question of how best to utilize or introduce the AID inputs lends itself to a response which will entail considerable experimentation, given the uncertainties associated with the stimulation of effective demand. It would be reasonable to assume that the likelihood of project success, i.e., achieving the project goals and purposes, will be largely contingent on the success of those experiments.

The project is producing exceptional results. Two-year goals for increased harvest and consumption as specified in the initial RDA contract were reached and exceeded in the first ten months of project operation. These results do not preempt the need for an evaluation to assess the need for folow-on activities, but are producing indicators that would require expansion of the present project as a continuous activity rather than an entirely new one.

In view of the exceptional results of the project this amendment proposes that the project be expanded to include proposed pilot activities envisioned in the Project Paper as either new projects or as amendments to the present project. The proposed activities include boat building and repair, oyster culturing, ice plant.

Each of these activities is directly related to the overall objective of the project and in turn greatly contributes to the nutritional needs of the Djiboutians and the economy of Djibouti.

PART II PROJECT AMENDMENT BACKGROUND

A. Project Setting

The Fisheries Development Project was approved and authorized for two years in January 1979 for total funding of \$498,000. Funds were fully obligated in August 1979 and a contract was signed with Resources Development Associates for technical services in March 1980 for \$299,000.

The project is designed to meet the following objectives:

1. Test the feasibility of increasing fish harvesting capability using appropriate technology, i.e., improving artisanal fishing methods of introducing modern fishing gear and equipment and demonstrating new fishing technology.
2. By means of the above as well as through establishment of cooperative(s), to encourage additional entrance into this sector and provide a source of remunerative employment for Djiboutians.
3. To assess the demand for fish products and promote increased consumption in order to:
 - (a) improve the nutritional intake of the poor
 - (b) to further stimulate the growth of the fishing industry and
 - (c) increase the earnings of the fishermen and the fishing community.
4. To develop both public and private institutional capabilities to adapt any/all successful elements attained by the project's activities and to continue and expand upon them.

The present Fisheries Development Project is producing exceptional results:

1. The project has established a credit system including a revolving credit fund for the distribution of

various commodities supplied by the project, i.e., outboard motors, nets and fishing gear, and potential for purchase of additional commodities. To date the revolving credit fund has accumulated over DF.2,000,000 (\$12,000), sufficient funds to purchase additional fishing gear and outboard motors, although having been in active operation for only three months.

2. Project assistance to the Ministry of Agriculture (MOA) in the development and organization of its infrastructure is currently directed towards establishing adequate statistical and recording systems necessary for proper catch analysis and resource management.
3. The project has developed specifications, identified suppliers and implemented purchase of major equipment essential to the project's operations, i.e., outboard motors, workboat, flake-ice machine, insulated delivery trucks.
4. The project contractor implemented the renovation of a building to serve as a temporary cold store at Obock (which was not included as a part of the original project plan), using American Embassy self-help funding.
5. The project has identified additional program areas where assistance and support can be provided to further enhance and expand the fishery potential for the GROD.
6. Increased demand has induced a 15% increase in catch over last year, twice the rate of increase originally thought possible.

B. Government and Other Donor Support

The government is aware of the potential for increased harvesting of fish, although its own efforts at stimulating production have been modest. A national fisheries development plan has not yet

been officially adopted by the government. However, an overall strategy has been agreed upon, which supports an artisanal fishing approach rather than emphasizing commercial fishing. Furthermore, the principal areas for assistance have been identified in sufficient detail to permit AID to respond to a GROD request for a fisheries development project.

In addition to AID, the French Economic Assistance Mission (FAC) and the FAO/UNDP have also indicated their intention to provide assistance for fisheries development. Together with the government, the donors propose to channel complimentary assistance to three separate but related fishery activities: (1) upgrading technology and fishing skills, (2) providing means for preservation of fish, and (3) improving the institutional capability (fishing cooperative, Fisheries Division and private sector) to handle and market fish.

The French have provided assistance to Djibouti fisheries in the past although largely to explore commercial fishing opportunities. The current FAC effort is directed at traditional fishing and will include the following inputs: (1) technical assistance to the Fisheries Division (Minimum one year), (2) two flake-ice machines for Djibouti city, and (3) unspecified assistance in cooperative development. The estimated value of this assistance is \$150,000.

The FAO/UNDP is prepared to provide a small fishing vessel and one year of master fisherman services to train a local crew to experiment with various fishing techniques. More recent information indicates that the funds initially reserved for this assistance may have been expended on other projects. Although the government has repeated its request for assistance, no definitive response from FAO/UNDP has been forthcoming. Further attempts to clarify the situation are being made.

The Djibouti Government is providing support to each of the donor programs. These programs are mutually supportive and are complementing each other. Furthermore, the GROD's own support for fisheries development is increasing, with the awareness that Djibouti's fishing sector offers relatively low cost, quick-response opportunities

for improving nutritional standards among the majority of the population as well as a chance to encourage development in a sector that is almost wholly indigenous. As government officials have indicated, these factors make the program very appealing.

PART III PROJECT AMENDMENT DESCRIPTION

As indicated above, the project implementation schedule has slipped by approximately 18 months. The Project Paper was authorized in January 1979 and the contract signed in March 1980. Although the project contractors arrived on site immediately after contract signature, this occurred approximately six months after the project agreement was signed. In addition to this, the Project Paper's budget was developed some 18 months prior to project initiation and due to extraordinary inflation (in the U.S. and local) during this period, the funds allocated were not sufficient to cover the original estimated project cost. Other factors impacting upon the implementation schedule include the fact that the cooperative component was established in January 1980, and has been in active operation since October, 1980; the installation of the flake-ice machines at Obock, the key item within the project's development structure, will not be completed until approximately September/October 1981; additional time and funds are required to test other identified activities for full-scale implementation and to capitalize on project achievements to date and finally, the IFAD project assistance is scheduled to begin in CY 81 through CY 83. This 18 month project extension is required to accommodate the original objective of the project and to provide additional funding for the already budgeted components and to cover the cost of the new expanded activities.

The proposed new activities are directly related and contribute to the overall objective of the project. The proposed pilot activities include (1) establishment of facilities for small-scale boat building using C-Flex materials plus the purchase of a small craft; (2) investigation of the feasibility and possible implementation of an oyster culture pilot project; (3) assist the fisheries development program at Tadjoura by providing a flake-ice machine and/or other related commodities;

and to assist the GROD in developing capacity to undertake small-scale industrial fishing activity.

The joint participation of IFAD/GROD and USAID/RDA will support and compliment the activities under the existing project and the proposed extension activities by supplying additional equipment, facilities and by providing technical assistance in those areas not covered by the current USAID/RDA project. The \$2 Million IFAD loan signed with the GROD in December 1980 would specifically be used for the following: Constructing and equipping two production sales centers, eleven fish retail outlets,

ten reinforced fiberglass boats (houris), fifteen outboard engines, three small cold rooms for three townships, frozen storage for the City of Djibouti, a flexible floating landing pier, workshop tools, the services of an expatriate coordinator, a mechanic, a master fisherman and consultants to provide on-the-job training and 18 man-months unidentified training. Further, the provision of technical staff by IFAD will be of particular value to the current and planned extension activities of this project as this will enable the USAID contractor to concentrate on USAID/RDA project's task, thus, relieving him of spreading his efforts and reducing his effectiveness. The IFAD proposal also incorporates within its scope those components envisioned as the second phase activity of this project beginning in FY 82/83. The proposed project extension will serve to enhance these overall objectives.

The IFAD program is scheduled to function for a period of four years and is summarized as follows:

1. Increased fish consumption through establishment of adequate cold chain; i.e., by using ice and cold storage from the time the fish are caught until delivered to the customer. To obtain these objectives boats will be equipped with insulated storage cases, ice will be produced, cold storage made available, transport provided to distribute fish to retail outlets to be established. Retail markets will be provided with appropriate cold storage facilities.
2. Increase landings by: Supplying small-scale fishing gear, providing additional houris (boats), establishing

technical training facilities for fleet operations, and providing personnel and materials, strengthening the fishermen's cooperatives, implementing an experimental fisheries training program.

3. Assist in the distribution of boats, outboards and fishing gear to those with no other financial sources, in joint collaboration with MOA, USAID/RDA and agents of the Banque Nationale de Djibouti (BND); i.e., to reinforce the revolving credit fund operation.

To achieve the above objectives IFAD will provide the following facilities and implement the proposed organizational measures:

1. Twenty-one (21) outboard motors and spare parts, tools, and bench supplies for repair/maintenance.
2. Depots for sale of duty-free fuel/oils to fishermen.
3. 14m fishing vessel, equipped for exploratory/experimental commercial fishing with master fisherman (captain) and mechanic (see 10).
4. A flexible floating landing stage to extend up to 300 meters from the shore to be installed at Djibouti, La Pecherie.
5. Miscellaneous fishing gear, insulated storage cases (ice boxes) for fishing boats.
6. Buildings at Obock and Tadjoura to house fish sales outlets, gear supplies, etc.
7. Plastic heat shrink sealer for packaging dried fish.
8. Eleven (11) public retail outlets - each 4.0m x 3.5m will be built and located as follows: Djibouti City (9), Dikhil (1) and Ali Sabieh (1).
9. Mechanical workshop at La Pecherie for repair of outboard motors.

10. Technical assistance (10 man-years).

(a) Project Coordinator

(b) Fisheries Advisor (FAC)

(c) Cooperative Specialist (USAID)

(d) Master Fisherman

(e) Mechanical Engineer

(f) Short-term consultants 19 man-months, primarily extension agent to assist in fish promotion/consumption.

11. On-the-job training for technical personnel, with supervisory or executive duties. Plus 18 man-months scholarships for training abroad.

PART IV PROPOSED EXTENSION COMPONENTS

A. Technical Description

1. Boat Building and Repair

This component would implement a small-scale boat building project utilizing a new simplified and inexpensive method of building fiberglass boats.

Djibouti has no shipyards. A few craftsmen, imported from Yemen, repair dhows and other traditional vessels, working in the open air with primitive hand tools on the docks. These craftsmen are reported to receive US \$55/day and their assistants US \$35/day. Their services are too expensive for constructing and repairing small fishing craft. Further, there is no local wood suitable for boats in Djibouti; most is imported from Ethiopia and is very expensive.

The ratio of fishermen to boats is about 6:1 (240 fishermen to 42 boats). Of the number of fishermen only about 80 are considered full-time, the remainder are unemployed or have to take other jobs, primarily due to the lack of additional boats.

In an effort to alleviate some of this shortage the IFAD program proposes the purchase of 10 fiberglass 7m houri fishing boats, each equipped with an outboard motor, to be sold to the fishermen on credit. While this may help to relieve some of the present shortage of fishing houris, there is considerable need for additional similar type boats to accommodate the remaining unemployed fishermen. Further, the cost of these imported houris is relatively high so that the time required to repay the loan into the revolving fund may extend over several years and to acquire additional boats from these funds may be a long wait.

The extended project proposes to implement a small pilot boat building programme, utilizing C-Flex fiberglass planking. The simplicity and low cost of this method - which is essentially constructing fiberglass boats without a mold - has opened up new possibilities for developing countries to build their own boats at a fraction of the cost of purchasing imports, and to the design and specifications necessary to meet local sea conditions. It is the purpose of the

project to determine the feasibility of establishing this method in Djibouti.

As the C-Flex method does not require a mold the capital required is very low and C-Flex boatyards can be built anywhere there is available labor; only hand tools, some basic power tools and a sheltered area are required. The boats are constructed over simple frames which can be used as often as needed. The cost of materials is approximately 5% of the total cost of the boat; the remaining costs are for labor.

2. Oyster Culture Experiment

Several species of native oysters are found in Djibouti waters. Unfortunately, these species are of uniformly small size and are not widely demanded in the marketplace. Additional market constraints on local species are the irregular supply and uncertain sanitation. Large and good quality oysters are regularly imported from France and are available on the local market. If a larger and better quality oyster could be produced locally, it could capture this market, eliminating the necessity of importation, and could become a valuable export commodity in its own right. Oyster culture is labor intensive, does not require sophisticated technology or equipment, and would offer opportunity for local employment on a year-round basis.

Suitable seed oysters are available in the United States and can be easily and simply transported to Djibouti. This project proposes to establish a low-cost small-scale experiment to demonstrate the adaptability and suitability of these oysters to Djibouti conditions and to determine growth rates. This experiment would demonstrate the feasibility of improved-species oyster culture, identify the most appropriate techniques, and provide baseline data on cost, growth rate and quality required to establish the feasibility of oyster culture on a commercial scale.

3. Ice Plant at Tadjoura

Providing assistance to upgrade the fisheries at Tadjoura is a vital part of the total fisheries development scheme

(USAID, GROD, IFAD, FAC). The present fishery suffers from a lack of fishing gear, boats, outboard motors, and means of preservation of the catch, especially ice and a cold store.

The project proposes to supply Tadjoura with a flake-ice machine similar to the one being provided at Obock.

This would be a joint effort with IFAD who will be contributing a building for Tadjoura that will house an eight-cubic-meter cold store, a market sales outlet, gear supplies, engine repairs and a fuel supply depot. The inclusion of a separate ice machine unit would complete the effectiveness of this unit. With flake-ice the fishermen would be able to preserve the catch at sea, stay out longer, fish a greater area, and still be able to deliver fresh fish to the market/cold store in Tadjoura.

B. Implementation Plan

1. Boat Building and Repair Implementation

- (a) Backstopping for this project would be provided by Resources Development Associates, California office.
- (b) Materials and equipment would be purchased by RDA and shipped according to schedule.
- (c) The RDA master fisherman (who is also an experienced boat builder) will mobilize to Djibouti to implement the project in the field. He would be supported in Djibouti by the resident Field Project Manager.
- (d) Prior to the arrival of the master fisherman/builder the Field Project Manager would arrange for an adequate work area and insure that the materials/equipment were on site.
- (e) The master fisherman/boat builder would arrive in Djibouti on receiving notice that materials/equipment, etc., have been received, and the work area, etc., was ready for operation.
- (f) The MF/BB begins the first element of the boat building project - the repair and sheathing of damaged houris. The number of houris that can be repaired will depend upon the extent of damage. It is anticipated that at least 10 can be sheathed. Time approximately 5 weeks.
- (g) After (f) the MF/BB will start the second element of the project - construction of an improved design houri. The complete construction is estimated to require approximately 8 weeks.
- (h) On completion of the project the MM/BB and the FPM will submit a report of the results which will include a breakdown of all costs and present an analysis of the feasibility of utilizing this method for constructing fishing boats in Djibouti.

2. Oyster Culture Implementation

- (a) Backstopping support to be provided by Resources Development Associates, California office.
- (b) RDA shellfish staff will design the basic pilot project operations, purchase oyster seed for scheduled shipments to Djibouti.
- (c) The RDA shellfish expert will arrive in Djibouti when advised by the Field Project Manager that necessary local preparations have been made and materials/equipment are on site.
- (d) On arrival in Djibouti, the shellfish expert with the support and assistance of FPM will implement the initial stages of the project, i.e., assemble rafts, cages, etc.
- (e) On completion of (d), RDA, California will be notified to initiate the first shipment of oyster seed via air freight.
- (f) On arrival the seed will be distributed as per project procedure instructions and the operational schedule will be implemented.
- (g) Routine maintenance begins, includes inspection, growth check, security, etc.
- (h) First transfer when oysters reach 3 times size of oyster seed.
- (i) Second transfer when oysters reach 3 times size of (h).
- (j) Third transfer when oysters reach 3 times size of (i).
- (k) Fourth transfer or harvest depending on size, quality of meat, etc.
- (l) At the conclusion of the project results will be analyzed for cost effectiveness and the feasibility of a large-scale commercial enterprise will be considered as follow-up project for Phase II.

3. Ice Plant Implementation

Supply flake-ice machine to the fisheries installations to be constructed by IFAD at Tadjoura.

- (a) Backstop support to the Field Project Manager will be provided by Resources Development Associates, California, as required. The PIO/C for ice machine will be issued by USAID/D.
- (b) The Field Project Manager will liaise with the IFAD Coordinator regarding details and construction schedule of the Tadjoura cold store facility that IFAD is building.
- (c) The Field Project Manager will advise USAID/D when to schedule ordering the flake-ice machine to coincide with completion of the Tadjoura cold store building (b).
- (d) The FPM will advise IFAD when delivery is expected and coordinate installation of the flake-ice machine to coincide with installation of IFAD supplied cold store refrigeration equipment.
- (e) After manufacturer's testing of the equipment the flake-ice machine will be turned over to IFAD (Fishermen's Coop) for operation and maintenance.

ITEM	(4/81)				(1/82)						(1/83)				(6/83)													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
1. Project Amendment Approved (April, 1981) (AID/W) -----	X																											
2. USAID/RDA Contract Revised (AID/W) -----		X																										
3. RDA Fisheries Project Manager in Djibouti (RDA/D) -----	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4. RDA Master Fisherman in Djibouti (RDA/C) -----						X	X	X	X	X	X																	
BOAT BUILDING AND REPAIR:																												
1. Material/equipment ordered (RDA/C) -----		X																										
2. Material/equipment shipped (RDA/C) -----			X																									
3. Work Area prepared in Djibouti (RDA/D) -----				X																								
4. Material/equipment arrives Djibouti -----					X																							
5. Repair and sheathing of damaged boats initiated (RDA/D) -----						X																						
6. Construction initiated on improved design boat (RDA/D) -----							X																					
7. Repair and construction tasks completed -----								X																				
8. Report prepared and submitted (RDA/D; RDA/C) -----										X																		
OYSTER CULTURE:																												
1. Detail project design; purchase and ship materials (RDA/C) -----						X																						
2. Work area prepared, rafts and cages assembled in Djibouti (RDA/D) -----							X																					
3. Oyster seed purchased and shipped via air (RDA/C) -----								X																				
4. Seed distributed, grow-out begins (RDA/D) -----									X																			
5. First Transfer (RDA/D) -----										X																		
6. Second Transfer (RDA/D) -----											X																	
7. Third Transfer (RDA/D) -----												X																
8. Fourth Transfer and Harvest (RDA/D) -----													X															
9. Report prepared and submitted (RDA/D; RDA/C) -----															X													
ICE PLANT (Tadjoura):																												
1. Coordination of Tadjoura Plant construction schedule (AID/D; IFAD) -----		X																										
2. Plant Construction Initiated (IFAD) -----					X																							
3. PIO/C issued for ice machine & generators (AID/D) -----					X																							
4. Equipment arrives Djibouti -----								X																				
5. Coordination of installation/checkout in Tadjoura Plant (AID/D; RDA/D; IFAD) -----											X																	
6. Installation completed and operational (IFAD) -----												X																

C. Economic Analyses

A significant increase in local consumption demand for fish is now anticipated in Djibouti, well beyond that originally foreseen in the Project Paper. Although a significant fisheries resource exists, production from an expanded and well-equipped artisanal fleet is expected to fall well short of demand levels. Alternative harvesting techniques and equipment will be required if this shortfall is to be met.

(a) Current Demand/Supply Situation

Demand

Approximately 300 metric tons of fish is marketed annually in Djibouti. Eighty percent (80%) of this passes through a single retail outlet in the City of Djibouti, which is in fact the only retail fish outlet in the country, at a rate of about 4.5 metric tons/week. As a general rule, all fresh fish offered for sale in this market is sold. Demand appears to be primarily constrained by three factors. (1) available supply, (2) a single retail market, and (3) availability of ice.

Supply

The existing 40-boat artisanal fleet produces an average of 8.5 metric tons of fish per year per boat, or a total of about 340 metric tons/year, of which an estimated 300 metric tons is sold with the balance consumed by the fishing families.

The presently known Djibouti fishery resource will support an annual catch level of six times this amount. The conclusion is that both resource and demand exist. Supply to the marketplace is constrained by inadequate equipment and technology to harvest the resource.

(b) Demand/Supply as Foreseen in Project Paper

Demand

The Project Paper viewed inadequate distribution as the principal factor limiting the then current demand. It was envisioned that by increasing the number of retail outlets and providing the necessary cold chain to assure fresh fish, demand would easily

double. It had been planned that an additional four to five retail outlets would come on line by end of project. It was expected that with modest promotion efforts the weekly consumption at the central market would increase by 25% and that the other retail outlets would sell an average one m.t./outlet per week. This would give an average weekly demand of 10 m.t./week or 604 m.t /year.

Supply

With the introduction and use of improved technology (methods and materials), the artisinal fleet can substantially increase its present level of production, to an estimated eventual maximum of 17 m.t./year for the 40-boat fleet (twice current production). If the level of consumption by fishing families remains constant at one ton/fishing "family" or boat, then about 640 m.t./year will be available in the marketplace.

(c) Future Demand/Supply as Presently Seen

Demand

Since initiation of the USAID/RDA fisheries project in Djibouti in March 1980, both production and demand for fish has increased by an estimated 15%. This is twice the originally anticipated rate and is directly attributable to project activities. This is a measure of the success of the project to date, and an indication that total demand may well exceed original estimates. With this current demand rate, the central market is now averaging nearly 5.2 m.t./week in sales to consumers.

The GROD has announced their intention to pursue aggressive promotion measures. Evidence of this is their plan to introduce one "meatless day" per week in each town. This promotion campaign is expected to result in an increase in weekly consumption of fish by 20% over current levels. This would bring sales at the central market up to 6.2 m.t./week.

The IFAD project agreement with the GROD calls for the construction of eleven new retail fish outlets, nine each in the City of Djibouti, one in Dikkhil and one in Ali Sabieh. With current demand levels and the new promotion campaign, these outlets

should average about 1.4 m.t./week each. When added to anticipated demand from the central market, this will result in a total weekly demand approaching 22 metric tons, or 1,144 m.t./year. This is nearly twice the possible production foreseen in the Project Paper.

Substantial increases in even this level of demand are expected in the near future. Other donors, including CRS, UNICEF, WFP and the League of Red Cross are presently considering procurement of fish from the Fisheries Service at the rate of one kilogram/family/week. With a refugee population of 3,600 families, this would result in an added annual demand of 187 metric tons, or a total of 1,331 m.t./year.

Supply

The IFAD project will purchase ten small fiberglass fishing boats which will in turn be sold on credit to local fishermen. The USAID "boat building and repair" project element will add 10 more such boats to the artisinal fleet, for a combined fleet total of 60 boats. With improved technology and methods, this increased fleet might be expected to catch 17 m.t./boat/year or a total of 1,020 metric tons. Given current levels of fish consumption per fishing family, this would result in a total of 960 m.t./year delivered to the marketplace.

This is the maximum level of production expected to be achieved with the expanded artisinal fleet, after they have fully adopted new techniques and methods. It is substantially below demand levels that may exist in 2-4 years.

(d) Conclusions

With 2-4 years, demand for fish for local consumption in Djibouti may exceed supply by 20-40%. If this occurs and supply is to meet demand, then either the artisinal fleet must be expanded still further, or non-traditional production capabilities will be required. This latter alternative is

something AID may want to consider financing in the future if demand increases as previously described.

D. <u>Financial Plan</u>	<u>A.I.D.</u>	<u>G.R.O.D.</u>
1. Technical Services		
a. Direct labor (35 pm):	\$ <u>88.188</u>	
(1) Field office - (18 pm)	33.408	
(2) Home office - (11 pm)	32.780	
(3) Other (6 pm)	22.000	
b. Overhead:	<u>98.568</u>	
(1) Field office (86.8%)	28.998	
(2) Home office (127%)	69.570	
c. Allowances (Derito):	<u>14.549</u>	
(1) Post differential (25% of 36.192)	9.048	
(2) Cola (15% of 36.192)	5.501	
d. Other direct costs:	<u>16.625</u>	<u>10,000</u>
(1) Communications and Misc.	3.000	
(2) Project promotion	8.000	
(3) Vehicle maintenance	2.000	
(4) DBA insurance (4.46% of 77.963)	3.625	
e. Equipment and supplies:	<u>40.500</u>	
(1) Boat prefabrication	10.000	
(2) Oyster culture	7,000	
(3) Exploratory fishing gear	23.500	
f. Travel and transportation:	<u>64.915</u>	
(1) Airfare:	20,600	
(a) Long-term: (R&R, 2 R/T at 900)	1,800	
(consult, 1 R/T at 2800)	2,800	
(consumables)	1,000	
(b) Short-term technicians:		
(5 R/T at 2,700)	13,500	
(U.S. travel)	1,500	
(2) Per diem:	21,915	
(a) Long-term technician		
(U.S. - 15 days at 75)	1,125	
(U.S. - 15 days at 50)	750	

	<u>A.I.D.</u>	<u>G.R.O.D.</u>
(b) Short-term technicians		
(Djibouti - 240 days at 46)	11,000	
(Djibouti - 150 days at 50)	9,000	
(3) Other:		22,400
(a) Car rental	2,400	
(b) Housing (10 Months at 2,000)	20,000	
g. Subtotal direct costs		323,345
h. Fixed fee (9.03%)		29,198
2. Commodities		<u>70,000</u>
a. Ice machine		50,000
b. Generators		20,000
3. Other Costs:		<u>37,457</u> <u>170,000</u>
a. Housing		34,000
(1) Rental	17,000	
(2) Utilities	13,000	
(3) Maintenance	4,000	
b. Environment Assessment		3,457
c. Operating Expenses		
(1) Staff salaries		113,000
(2) Operating costs		45,000
(3) Use of facilities		12,000
4. Contingency		<u>20,000</u>
GRAND TOTAL		\$480,000 \$180,000

Life-of-Project Financial Plan (\$'000)

	<u>AID</u>	<u>GROD</u>	<u>FAC</u>	<u>TOTAL</u>
Technical Services	652	237		889
Commodities	216	60	150	426
Training	9	5		14
Housing/other costs	75	-		75
Contingencies	<u>26</u>	<u>92</u>		<u>118</u>
TOTAL	978	394		1,522

E. Condition Precedent and Covenant

L. The Project Agreement shall contain the following covenant in substance:

The Grantee covenants that it will cooperate with an A.I.D. environmental assessment to be performed as soon as possible after the signing of the Agreement. This environmental assessment will include an up-date of the current and projected sustainable yield of its fisheries versus current and projected catch, and an analysis of any adverse impacts on marine mammals, endangered or threatened species, or non-target fish species. The Grantee also covenants to work with A.I.D. in incorporating any recommendations arising from this study into the project and, to the extent possible, into its national fisheries strategy.

2. The Project Agreement shall contain the following condition precedent:

Prior to the dispersement of any funds for the oyster culture sub-project, (1) A.I.D. will have performed an assessment of the potential negative environmental impacts of this activity and the implications of its future extension to larger areas, and (2) the Grantee will have incorporated all recommendations of this study into the oyster culture sub-contract, including the potential abandonment of this sub-project if the study should so recommend.