Resources Development Associates

A California Corporation

PD-AAZ-442
XD-AAZ-442-A

CECAF-0454

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16 September 1985

USAID/AFR/RA
Jerry Wood, Project Manager
Department of State, Room 4533 NS
Washington, D. C. 20523

Dear Jerry:

As promised I am sending you a paper outlining the chronology of events of the Djibouti project and a summary piece on the Oman project. Both projects are funded by A.I.D. in fisheries development.

We (RDA) are convinced that the fisheries sector is an extremely important one for developing countries. It not only provides employment but a good source of protein and potential for increased foreign exchange. All three elements are extremely scarce in Africa and in particular in the drought stricken countries.

The fisheries sector can have the usual problems of any sector in a developing country, e.s. lack of counterparts, need for institutional development, overstaffed inefficient parastatals, poor training of the few counterparts available, etc. but the fisheries sector is easier to work with and less dependent on the vagaries of nature than dryland farming in the Sahel.

I hope the enclosures are useful. If you have any questions, please feel free to call. For specific AID project information I suggest you contact Benjamin Hawley, NE/MEUR for Oman and Timm Harris, AFR/PD/EAP for Djibouti.

Sincerely,

RESOURCES DEVELOPMENT ASSOCIATES, INC.

Keith E. Simmons
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DJIBOUTI FISHERIES DEVELOPMENT PROJECT - PHASE I

Since the Republic of Djibouti gained independence in June 1977, various foreign donors have established assistance programs to help in the development of the country. Such support has been forthcoming in three general areas: refugees, agriculture, and fisheries. The regional political situation and a sustained drought in 1979-1982 created vast numbers of refugees and drought victims who migrated to Djibouti for safe haven from the Somalia-Ethiopia border conflict. U.S. government efforts, prior to 1979, concentrated almost exclusively on assistance to the various refugee programs.

In 1979, the U.S. government, through its Agency for International Development, began modest development assistance in the areas of agriculture and fisheries. The fisheries program was the first to be selected and implemented. In the field of agriculture, a program was initiated to establish a soils/water research and analytical capability within the Ministry of Agriculture. This would be accomplished by providing a complete chemistry laboratory and training therein and by training Djiboutian professionals in soil mapping procedures for agricultural development. It was expected that benefits from such a program would only accrue over a protracted period of time.

In the field of fisheries, a program was developed which was expected to have a more immediate impact. It had been determined, through short-term services, that the fishing sector and the fishery resource held great promise for potential development. In fact, fisheries is most likely Djibouti's most important resource and certainly a resource most easily exploited.

Development of this resource, prior to 1979, had been virtually ignored. Only minor efforts had been made to introduce modern fishing methods to the artisanal fishing industry and virtually no commercial fishing industry existed.

The industry, such as it was, consisted of perhaps 140-200 full and part-time artisanal fishermen who harvested approximately 250 tons of fish annually. Marketing of these fish was unsophisticated and inefficient. Many were sold or bartered directly on the beach and the remainder were retailed through the Central Market of Djibouti City and the local markets of Obock and Tadjoura (coastal fishing villages). Little regard was made for sanitation or preservation of the fish. Marketing had to be swift or the product spoiled.

The only semblance of a commercialization of the fishery was the presence of Yemeni fishermen who annually harvested approximately 200 tons of sardines from the northern coast of Djibouti. This was approximately 40 percent of the total catch from Djibouti waters. Benefits of this catch were essentially lost to Djiboutian citizenry.

The Yemeni fishermen have also played a role in sustaining the Djibouti fisheries. Since Djiboutian fishermen have lacked the materials, tools, or skills needed to build or repair their own boats or nets, the Yemeni have provided these services in this area, albeit often at exorbitant prices.

The Government of the Republic of Djibouti (GROD), through its Livestock and Fisheries Service of the Ministry of Agriculture, had been aware of the potential for increased harvesting of fish, and had formulated a plan for such development but lacked trained personnel and adequate financing. Prior to USAID's entry, the French Economic Assistance Mission

(FAC) and the Food and Agriculture Organization/United Nations Development Programme (FAO/UNDP) indicated their interest in providing assistance. Such assistance was to be directed to: (1) upgrading technology and fishing skills; (2) providing means for fish preservation; and (3) improving the institutional capability of the fishing Cooperative, the Fisheries Service and the private sector to handle or market fish.

1.0 Original USAID Project

Recognizing the needs of and potential for fisheries development in Djibouti, USAID initiated efforts in 1979 to provide meaningful assistance to compliment the efforts of the other donors. The Fisheries Development Project was approved and authorized for two years in January, 1979 for total funding of $498,000. Grant funds were fully obligated in August, 1979. GROD contributions were set at $214,000, giving a total project budget of $712,000.

The purpose of the project was to assist the Ministry of Agriculture in its efforts to create a viable system for the improved harvesting, handling/storage and marketing of fish. At the same time, the project provided assistance toward strengthening the institutional capacity of the Fisheries Service of the MOA and to support or augment private sector initiatives in the fishing industry. The successful completion of the project was to result in an improved nutritional status for the majority of Djiboutians, as well as increased income for nearly 300 fishermen, merchants, and other artisans in the fishing industry.

In coordination with the government and other donors, USAID provided assistance in three separate fishery activities:

1. upgrading technology and fishing skills as evidenced by new techniques and equipment being used by artisanal fishermen with consequent increases in harvests,
2. providing means for preservation of fish as evidenced by installation and indigenous operation of appropriate ice-making facilities and the developing and application of dry-salted fish techniques with consequent reduction in post-harvest losses,
3. improving the institutional capability to handle and market fish as evidenced by the development of fishing cooperative(s), adequate administration of such cooperative(s), the expansion of retail outlets and of transport facilities, and functioning promotion/demonstration activities.

The $712,000 budget for this original project covered all phases of the project. Figure 1 shows the breakdown of these funds into six different categories: technical services, commodities, participant training, evaluation, housing, and contingency. A description of these inputs follows:

1. Technical Assistance ($284,000). A contract for technical assistance was awarded to Resources Development Associates of Diamond Springs, California, in March, 1980 for $299,000. Under this original contract, a Project Manager/Fisheries Generalist (24 months) provided long-term advisory services to the Director of the Fisheries Division and supervised the implementation of the AID Project. He provided appropriate on-the-job training to artisanal fishermen, managed the fish demonstration program, supervised a revolving credit fund with Fisheries Division staff

		USAID	GROD	TOTAL
		U.S.	U.S.	U.S.
A.	Technical Services	$284,000	$124,000	$408,000
B.	Commodities	105,000	15,000	120,000
C.	Participant Training	24,000	5,000	29,000
D.	Evaluation	7,000	-0-	7,000
E.	Housing	50,000	-0-	50,000
F.	Contingency	28,000	70,000	98,000
	TOTAL:	$498,000	$214,000	$712,000

FIGURE 1 : PROJECT BUDGET - ORIGINAL PROJECT

for purchases of fishing gear, organized a transport system for movement of fish, developed contacts with potential consumer groups, and undertook simple marketing innovations.

In addition, RDA provided a total of eight months of short-term assistance consisting of advisors in marketing, fishing technology, cooperative development, and data completion.

RDA, in addition to providing the above technical services, was responsible for conducting a series of demonstration and educational activities ($23,000), and procurement of fishing gear and fish storage equipment for the revolving credit fund administered by the project manager and the Fisheries Division ($53,000).

2. Participant Training ($24,000). A total of six-person months of short-term training involving five persons was proposed. This included training and observation in marketing, cooperative management and fisheries development.

3. Commodities ($105,000). In addition to the commodities procured by the technical assistance contractor, the project also financed the procurement of a flake-ice machine/generator (plus accessories), and three project vehicles, as well as spare parts, a 27-foot Yamaha project workboat/fishing boat, outboard motors, cold boxes, nets and fishing gear.

4. Evaluation ($7,000). Funds were included to permit one outside fisheries specialist to join the REDSO, AAO/Djibouti, MOA evaluation team which evaluated progress made under the project and helped to determine whether additional AID assistance was warranted. The special evaluation took place in December, 1981.

5. Housing ($50,000). The project provided housing for technical assistance personnel.

6. Contingency ($28,000).

7. GROD Contribution. The Djibouti Government supported this project with a contribution of $214,000, equivalent to 30 percent (30%) of total project cost. The various components included staff services ($121,000), support and operation costs ($32,000), use of facilities ($15,000), and promotion/demonstration activities ($10,000). Inflation and contingency factors totalling $36,000 were also included.

The staff services included the existing three Fisheries Division personnel, three to four additional staff that were required during the course of project implementation, and five Fisheries and Livestock service support personnel (part-time). In addition, there were additional support and operating expenses that were being assumed by the MOA for vehicle operation and maintenance, and for the Obock fishery facility and the Fisheries Division headquarters unit. Furthermore, the GROD contributed the use of its facilities at the Pecherie. Last, the MOA was to make available $10,000 to support the fish demonstration education program. This included making arrangements for space at the four secondary city markets and those in Ali-Sabieh and Dikhil and securing radio time, arranging for fish demonstrations; and coordinating its efforts with those of the Governors of Obock and Tadjoura, to ensure that project activities received adequate support and local participation.

In addition to AID, the French Economic Assistance Mission (FAC) also indicated their intention to provide assistance for fisheries development. Together with the government, the donors proposed 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 fishing development. The FAC effort was directed at traditional fishing and included 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 was $150,000.

2.0 Amended Project-First Extension

Because of various delays, implementation of the original project did not begin on schedule and, in some cases, certain activities slipped by as much as 18 months. Nevertheless, overall progress achieved in the first year of the technical assistance contract was exceptionally encouraging. Two-year goals for some activities, particularly in the area of production, were met in less than one year. The project became a centerpiece of GROD's attention. These factors convinced USAID that an extension and expansion to the project was desirable.

In September, 1981, an amendment to the original project was approved. In essence, the amendment provided for an 18-month extension to the life of the project. The Project Advisor's tour of duty was extended by 18 months, an additional 11 man-months of TDY boat builder/master fisherman assistance was programmed to cover an additional activity (boat building), and two months of short-term technical support was added to cover a second additional activity (oyster culture) as well as general home office backstop. In addition, the project amendment included funds for major commodity purchases, including an ice machine for Tadjoura and electric generators for Obock and Tadjoura. At the request of the Fisheries Service, training funds were earmarked for an observational study tour in the USA for the Chief of Service of Livestock and Fisheries.

The life of project funding for the overall assistance package to Djibouti fisheries increased from $712,000 to $3,651,500. The USAID contribution increased from $498,000 to $978,000. GROD contribution increased from $214,000 to $394,000. FAC contributed $150,000. IFAD provided new funding of two million dollars. Figure 2 shows the breakdown of project funding for the amended project.

Under the amended scope of work, for the USAID project, the two additional activities were boat-building/repair and oyster culture. Under the technical assistance contract, RDA conducted both of these activities. The boat-building/repair consisted of sheathing traditional fishing boats with fiberglass planking and in constructing new vessels, using local designs and western designs as molds. Plans called for building one or two vessels and sheathing 5-10 houris.

The oyster culture experiment consisted of attempting to grow, on floating racks, high quality oysters for eventual sale in the local expatriate-oriented markets. The experiment was to determine whether imported species would grow and whether the process could be successfully institutionalized.

		AID	GROD	FAC	IFAD
A.	Technical Services	$652,000	$237,000	$	$ 667,000
B.	Commodities	216,000	60,000	150,000	1,140,000
C.	Participant Training	9,000	5,000		
D.	Housing	75,000			
E.	Contingencies/ Evaluation	26,000	92,000		322,500
	TOTAL:	$978,000	$394,000	$150,000	$2,129,500

FIGURE 2: AMENDED PROJECT/FUNDING BREAKDOWN

3.0 USAID Mid-Project Evaluation

In December, 1981, a formal mid-project evaluation was conducted by USAID's REDSO/EA of Nairobi. This evaluation covered the Association Cooperative de Peche Maritime (ACPM) as a whole and included an evaluation of the USAID project.

In general, the evaluation was very positive. It recognized "major progress" toward many goals. It also pointed out, as should be the case, areas of weakness which must be addressed. The technical assistance team agreed with many points of the evaluation and took steps to strengthen them.

The evaluation was summarized as follows:

> "Major progress has been made in the area of institutional development, commodities have been supplied and steps have been made to improve the fishing industry as a whole. Yet a well-defined training program has yet to be established and certain specialized assistance is still evolving (boat building, oyster culturing and other untapped marine product development). The project has played a significant role in the growth of the Cooperative Association, through direct intervention and management. Now the focus will have to shift to assistance in creating internal capabilities for managerial and financial self-sufficiency. This is possible, yet additional USAID assistance would enhance this effort. The help of USAID in improving internal control systems and transport/production capabilities would be a valuable additional input into the ACPM."

4.0 Administrative and Financial Management Evaluation

As a result of recommendation in the Mid-Project Evaluation regarding the need for assistance in creating capabilities within the Coop for managerial and financial self-sufficiency, USAID made arrangements for a training and management consultant to assist the Cooperative in establishing an improved accounting system and to assess the management capabilities and needs of the SEP. His report praised the successes to date accomplished by the Coop but was critical of the lack of an effective administrative and financial management system.

As a consequence of these findings, he set up the framework of a complete accounting system that would be appropriate for the Cooperative. In addition, he recommended that:

a. a fiscal manager and clerk accountant be hired in addition to the accountant secretary already in place to properly staff the financial services of the Cooperative.

b. the personnel statute and salary schedule be uniformized to improve internal control as well as the accountability of all employees towards the Cooperative management.

c. an organization chart with clear job descriptions be prepared allowing for an effective coordination of all various management functions and requiring that no decisions with financial implications be ever taken without the prior consultation with the fiscal manager;

d. a custom-tailored management training program aimed at enhancing the overall understanding of sound management requirements be designed and given to all Cooperative employees having supervisory and critical support functions.

5.0 Amended Project-Second Extension

The overall successes of the Fisheries Development Project had encouraged both USAID and the GROD to seek to continue development assistance in this sector. It was decided that a major second phase of this effort would be forthcoming, and plans were initiated to seek funding and the necessary agreements. However, because there was an imminent need to intervene in the several areas noted previously, namely financial management and an increase in training, it was decided to seek an extension of the Phase I project and to delay implementation of the Phase II until the full impact of these changes could be evaluated.

In April, 1983, the project was again amended to extend its life an additional one year until August, 1984, at which time Phase II was scheduled to commence. Major features of this amendment included extension of the Project Advisor's tour of duty by 12 months, provision of a Financial Manager to assume financial duties at the Coop in response to the financial management report, finding local-hire Djiboutians to fill the positions of deputy Cooperative manager, accounts clerk, chief accountant and shipwright, and continuance of training in the areas of fishing, boat building, management and accounts. The project extension funded an additional 17 man-months of the Masterfisherman who was to continue training, exploratory Fishing, and advisory services in the boatyard. Additionally, the extension called for procurement of a 40-foot multi-purpose fishing vessel to be used for training, exploratory fishing, and the beginning stages of a stock assessment program that is to be fully

implemented in Phase II. Finally, the extension included funds for a socio-economic study, needed as a precursor to justification for a Phase II, and funds for final evaluation of Phase I and project design of Phase II.

This second project extension increased the total project budget from $3,651,500 to $5,006,500. The USAID contribution increased from $978,000 to $1,978,000. The GROD contribution increased from $394,000 to $750,000. Figure 3 illustrates project funding levels for the second extension.

	AID	GROD	FAC	IFAD	TOTAL
A. Technical Services	$1,463,000	$386,000		$ 667,000	$2,516,000
B. Commodities	205,000	260,000	150,000	1,140,000	1,755,000
C. Participant Training	11,000	5,000			16,000
D. Housing/Local Support	110,000	7,000			117,000
E. Contingencies/ Evaluation	188,000	92,000		322,500	602,500
TOTAL:	$1,977,000	$750,000	$150,000	$2,129,500	$5,006,500

FIGURE 3 : 2ND EXTENSION AMENDED PROJECT/FUNDING BREAKDOWN

6.0 Social/Cultural/Economic Study

In 1983, USAID financed a socio-economic study to determine the potential feasibility of Phase II from the standpoint of social acceptance and economic viability. The study defined the beneficiary groups who might benefit from the study.

> "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."

One of the persistent questions expected to be answered by this study related to the acceptance of fish as a food source by the retail customers, particularly the poorer groups. Local experience had shown that fish, when delivered fresh and clean, is widely accepted, even by Nomad groups far inland. The surveys and subsequent analysis conducted in this study overwhelmingly reaffirmed this finding.

Significant numbers of households already consume fish despite difficulties of access. In addition, fish consumption is not viewed as a cheap substitute for meat, but rather as a means of increasing the variety in the diet.

The combination of ready access and lower prices, as well as the favorable position of fish 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 Phase II project.

In addition to acceptance of fish as a food source, the socio-cultural analysis looked at the question of whether the fishermen will readily accept training and new technology. Increasing the productivity of fishermen will depend upon the willingness of fishermen to learn and use new fishing techniques and equipment. 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. In addition, fishermen (whether young adults or older men) have learned to fish by working with their father or other relatives. Effective training must be by demonstration in concrete fishing situations, not in an abstract classroom setting.

7.0 Summary and Phase II Plans

The Phase I project made significant progress in the areas of institutional development, operations and marketing. 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's income.

Production: Production has increased dramatically since 1979, growing over 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.

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.

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.

Phase I provided for an exploratory fishing vessel and equipment. 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. 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.

Finance: It is unclear as to whether the ACPM is becoming a financially viable institutional. 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.

The overwhelming success of Phase I led to development of plans for a continuation of assistance in the fisheries sector through funding of a Phase II project. Phase II is providing assistance over a three-year period and has been budgeted at approximately $3 million, a level of effort and funding approximately twice that of Phase I.

The Phase II project is desgined to improve the utilization of the local fishery for the benefit of the Djibouti populace. The project is helping to increase fishermen's 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 is being provided 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 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 include training of fishermen 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 Fisheries Cooperative (ACPM).

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SULTANATE OF OMAN

FISHERIES DEVELOPMENT PROJECT

272-0101

In 1982, the Omani-American Joint Commission for Economic and Technical Cooperation and the Oman Ministry of Agriculture and Fisheries approved the project paper for the Fisheries Development Project (272-0101).

The project was designed "to address major constraints to the further development of fisheries by providing technical assistance and training to develop the institutional capacity of the Directorate of Fisheries in four areas: general fisheries program management, estimating of fisheries resource measurement, extension, marine science and fisheries research. In addition, short-term technical assistance would be provided to address development issues and implementation problems relating to location and numbers of marketing centers, cold stores, and surveillance and enforcement of Oman's zone of extended fisheries jurisdiction (200 mile limit)." The U. S. contribution is a grant of 6.6 million dollars and the Oman government contribution is equivalent to 10.6 million dollars over the five year life of the project.

The inputs are technical assistance and training through two separate contracts. The technical assistance contracts are to provide assistance to:

1. The Directorate General of Fisheries of the Ministry of Agriculture and Fisheries to improve their capability to assess and manage the fisheries resource and provide extension services to the artisanal fishermen as well as to promote commercial fishing and;

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2. to establish a Marine Science Center which is presently under construction.

The technical assistance contract to support the Directorate General of Fisheries was signed between the Government of Oman and Resources Development Associates (RDA) in October, 1983.

RDA presently has an eight man team in country providing technical assistance and training to the various departments of the Directorate General of Fisheries.

A contractor for the Marine Science Center has been selected and contract negotiations will take place in early October, 1985.

Under the RDA contract, a plan for reorganizing the Directorate General in line with a comprehensive program approach to the fisheries sector was developed. This plan divided the responsibilities by resource assessment (Statistics Department) resource monitoring and control of artisanal and commercial fishermen (Fisheries Affairs Department), Research (Marine Science Center), infrastructure to support fisheries (e.s. cold stores, ice machines, jetties, ports, etc.) and marketing and processing (Fisheries Development Department) and extension and training (Technical Services and Extension Department).

Each department has identified training needs and designated candidates for short and long term training. The RDA consultants have developed a training plan and identified appropriate universities and institutes for the training.

The RDA team has designed and implemented with the Omanis, a one year sampling program (completed in July of 1985)which will soon be instituted as the ongoing resource assessment program for the Directorate. Understanding the extent and type of fish, will enable the Omanis to

negotiate additional commercial fishery contracts without fear of overexploiting the fisheries resource. They will authorize limits of catch below the maximum sustainable yield and then monitor the trawler fleets for compliance. The monitoring will be done by the on-board observer program which is presently being designed and established by RDA advisor to the Fisheries Affairs Department.

In addition to the commercial fishery, RDA is providing an advisor to develop and assist in implementing an extension program to the artisanal fishermen. This program will provide advice and better technology to the fishermen to improve their catch and their income. This will provide the incentive to meet the Oman government goal of giving villagers a livelihood in their village so they will not tend to gravitate to the capital city.

RDA has also provided advice on policy and law related to protection of the artisanal fishermen from the trawlers, protection of juvenile and berried lobsters from fishermen, promotion of the private sector, and control of the 200 mile extended economic zone.

During the first two years of implementation, RDA has established work programs for each department and developed the necessary knowledge base and personal relationships necessary for to a successful program. At the completion of the five year project sufficient groundwork will have been laid to merit an additional five year effort to work with the returning Omanis to establish a good foundation for them to build on in managing and promoting the fisheries sector of oman.