

Document of
The World Bank

FOR OFFICIAL USE ONLY

Report No. 7772

PROJECT COMPLETION REPORT

TUNISIA

**SECOND FISHERIES PROJECT
(LOAN 1746-TUN)**

MAY 19, 1989

**Europe, Middle East and North Africa Region
Country Department II
Agriculture Operations Division**

This document has a restricted distribution and may be used by recipients only in the performance of their official duties. Its contents may not otherwise be disclosed without World Bank authorization.

CURRENCY EQUIVALENTS

Currency Unit : Tunisian Dinar (D)
Dl.00 = US\$1.
US\$1.00 = D0.87

(Average Calendar 1987)

WEIGHTS AND MEASURES

The metric system is used throughout this report.

GLOSSARY OF ABBREVIATIONS

BNT Banque Nationale de Tunisie
(National Bank of Tunisia)

CGP Commissariat Général à la Pêche
(Fisheries Authority)

FOSEP Fonds Spécial d'Encouragement à la Pêche
(Special Fund for Fisheries)

INSTOP Institut National Scientifique et Technique d'Océanographie
et de Pêche
(Tunisian Fishery Research Institute)

FISCAL YEAR

January 1 - December 31

THE WORLD BANK
Washington, D.C. 20433
U.S.A.

Office of Director-General
Operations Evaluation

May 19, 1989

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

SUBJECT: Project Completion Report on Tunisia Second Fisheries Project (Loan 1746-TUN)

Attached, for information, is a copy of a report entitled "Project Completion Report on Tunisia Second Fisheries Project (Loan 1746-TUN)" prepared by the Europe, Middle East and North Africa Regional Office. Full evaluation of this project has not been made by the Operations Evaluation Department.

Attachment

A handwritten signature in black ink, appearing to be 'R. P. ...', is written over the word 'Attachment'.

TUNISIA
PROJECT COMPLETION REPORT
SECOND FISHERIES PROJECT
(LOAN 1746-TUN)

Table of Contents

	<u>Page No.</u>
PREFACE	i
BASIC DATA SHEET	ii
EVALUATION SUMMARY	iv
I. BACKGROUND	1
A. Resources	1
B. Sector Setting	1
II. FIRST FISHERIES PROJECT	2
III. PROJECT FORMULATION	3
A. Identification and Preparation	3
B. Appraisal	3
IV. PROJECT START-UP	4
A. Effectiveness and Start-up	4
B. Revisions	5
C. Procurement	5
V. CONSTRUCTION IMPLEMENTATION	8
A. Implementation Schedule	8
B. Port Component	8
C. Credit Component	10
D. Extension Component	14
E. Studies and Research	15
F. Institution-Building	16
VI. PROJECT IMPACT	16
VII. BANK PERFORMANCE	18
VIII. LESSONS LEARNED	18

Annex 1: Economic Rate of Return

Attachment I - Comments from the National Bank of Tunisia

Attachment II - Comments from the Fisheries Authority

Map - IBRD 14170

PROJECT COMPLETION REPORT

TUNISIA

SECOND FISHERIES PROJECT

(Loan 1746-TUN)

PREFACE

This is the Project Completion Report (PCR) for the Second Fisheries Project in Tunisia, for which Loan 1746-TUN in the amount of US\$28.5 million was extended on July 20, 1979. The original loan closing date was June 30, 1985, but after two extensions the loan was officially closed on December 31, 1986. The grace period for the closing of loan accounts was extended to seven months. Final disbursement was made on July 2, 1987, about two years after the initially anticipated date. In March 1987 US\$3.0 million of the uncommitted savings of the project were cancelled, and at the time of the final disbursements the remaining balance of US\$1.7 million was cancelled. Hence the total amount disbursed under the project was US\$23.8 million.

This PCR was prepared by the Europe, Middle East and North Africa Regional Office, based on the "Rapport d'Achèvement du 2 ième Projet Pêche" prepared by the Government, a review of Bank records and selected interviews with Bank staff who were associated with the project. No field visit was made.

The draft report was sent to the Borrower on March 1, 1989 for comments. Replies were received from the National Bank of Tunisia and from the Fisheries Authority and are included as Attachments I and II to the Project Completion Report (PCR). Their comments have been incorporated into the final PCR text.

TUNISIA
PROJECT COMPLETION REPORT

SECOND FISHERIES PROJECT
BASIC DATA SHEET
(LOAN 1746-TUN)

KEY PROJECT DATA

<u>Item</u>	<u>Appraisal Expectation</u>	<u>Actual or Current Estimate</u>
Total Project Costs (US\$ million)	67.5	56.0
Underrun (%)	-	17%
Loan Amount (US\$ million)	28.5	23.8
Disbursed June 30, 1985	28.5	12.3
Cancelled (June 30, 1988)	-	4.7
Physical Components Completed	12/84	12/87
Proportion Completed by		
Appraisal Target Date	100%	70%
Proportion of Time Overrun (%)	-	40%
Institutional Performance	-	weak
Financial Performance	-	worse than expected
Economic Rate of Return (%)	27	30

Staff Input (Staffweeks)

	<u>FY75</u>	<u>76</u>	<u>77</u>	<u>78</u>	<u>79</u>	<u>80</u>	<u>81</u>	<u>82</u>	<u>83</u>	<u>84</u>	<u>85</u>	<u>86</u>	<u>87</u>	<u>88</u>	<u>Total</u>
Preappraisal	.9	2.2	9.6	20.1	25.0										57.8
Appraisal					79.8										79.8
Negotiation					6.9										6.9
Supervision						26.0	25.2	27.3	19.3	6.5	16.3	11.8	7.5	1.1	141.5
Other					1.0	.1		.8		.6					2.5
Total	.9	2.2	9.6	20.1	112.8	26.1	25.2	28.1	19.8	7.0	16.3	11.8	7.5	1.1	288.6

Cumulative Disbursements

US\$ Million

	<u>FY80</u>	<u>FY81</u>	<u>FY82</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>
Appraisal Estimate	4.4	13.4	19.3	24.0	27.5	28.5	28.5	28.5
Actual	0.1	1.6	2.8	6.5	9.2	12.3	15.7	23.8
Actual as % of Appraisal	2	12	15	27	33	47	55	84
Date of Latest Disbursement	July 2, 1987							

Project Dates

	<u>Original Plan</u>	<u>Actual</u>
Identification		6/76
Preparation		3/78
Appraisal		10/78
Negotiations		5/24-25/79
Board Presentation		6/28/79
Date Signed		7/20/79
Loan Effectiveness	10/18/79	
Revision I	12/31/79	
Revision II	3/31/80	
Revision III	5/31/80	5/14/80
Loan Closing	6/30/85	12/31/86

Mission Data

<u>Mission Date</u>	<u>Date (Mo/Yr)</u>	<u>No. of Persons</u>	<u>Mandays in Field</u>	<u>Specializations Represented 1/</u>	<u>Perf. Rating 2/</u>	<u>Trend 3/</u>	<u>Type of Problems 4/</u>
Identification	6/76						
Preparation	3/78						
Appraisal	10/78						
Supervision I	8/79	3	15	ABF	1	2	MT
II	12/79	2	12	DB	2	2	MT
III	3/80	1	6	A	2	2	F
IV	8/80	3	12	FBD	2	1	FM
V	7/81	2	6	AD	2	1	FM
VI	12/81	2	6	DD	2	3	FM
VII	1/82	1	8	D	2	3	FM
VIII	3/82	3	6	ABD	2	2	FM
IX	6/82	2	8	AB	2	1	FM
X	10/82	3	8	ABD	2	2	FM
XI	5/83	2	3	AC	2	2	M
XII	10/83	2	5	AB	2	1	M
XIII	11/84	2	5	CB	2	1	M
XIV	5/85	2	7	CB	2	1	M
XV	5/86	1	8	D	-	-	-

Total Supervision 249 = 49.8 staffweeks

- 1/ A = Financial Analyst, B = Naval Architect, C = Economist, D = Ports Engineer
 F = Credit Specialist
2/ 1 = Problem Free, 2 = Moderate Problems, 3 = Major Problems
3/ 1 = Improving, 2 = Stationary, 3 = Deteriorating
4/ M = Managerial, T = Technical, F = Financial

Other Project Data

Borrower: Republic of Tunisia

Executing Agencies: Commissariat Général à la Pêche
 : Banque Nationale de Tunisie

Fiscal Year of Borrower: January 1 - December 31

Name of Currency: Tunisian Dinar (D)

Currency Exchange Rate:

Appraisal Year Average	US\$1 = D 0.400
Intervening Years Average	US\$1 = D 0.735
Completion Year (1987) Average	US\$1 = D 0.87

TUNISIA
PROJECT COMPLETION REPORT
SECOND FISHERIES PROJECT
(Loan 1746-TUN)

EVALUATION SUMMARY

Introduction

The sea bordering the Tunisian coast is richly endowed with fish in comparison to other countries bordering the Mediterranean. Since the late sixties the Tunisian Government has put increasing emphasis on fish production to satisfy local demand and, increasingly, tourist and export markets. Whereas between 1971 and 1981 production grew at an annual rate of about 6.6%, the rate increased to an average 12.5% during 1982-1985, with annual production rising from 62,750 t of fish in 1982 to around 88,895 t in 1985. To assist its development plans for the fishery sector, the Government requested the Bank in 1970 to assist in financing fishery investments and the First Fisheries Project (Cr. 270-TUN) started in 1972. In 1976, during implementation of the First Project, a request was made for a Second Project, the subject of this report.

2. The principal objective of the project was to increase fish production to satisfy local demand and exports. Specific project goals were: (i) to increase fish production by about 8,760 t annually which was to be achieved through construction of ten fishing ports and by financing about 430 newly designed fishing vessels, and (ii) support for institutional developments, particularly creation of the "Département à la Pêche" and strengthening of the Banque National de Tunisie (BNT) and of fishery extension activities.

Implementation Experience

3. Although the project did not entirely achieve its objectives, its civil works (ports construction) component was a reasonable success (para 4), boat construction targets were achieved and the re-estimated economic rate of return has been fully adequate (para 6.03). The credit program used to finance boat construction was, however, a serious failure largely due to major problems with credit repayment (para 6) and the unfortunate timing of ultimately successful vessel design activities.

4. Implementation of the port component was affected by very high bid prices at tender. Various actions were taken to reduce the costs, including an evaluation of alternative port designs, and reduction of auxiliary works. Final costs of the port contracts exceeded appraisal estimates by 30%, and

cost overruns were largely financed by the Government. Although construction was delayed for some ports, all ports appear to function in a reasonable fashion at present. Three ports experienced technical problems, for which special studies were made. Actual fishlandings at most ports substantially exceed appraisal estimates; the ports appear to have been a useful and justifiable component of the project.

5. The Project Completion Report (PCR) of the First Fisheries Project^{1/} provided a number of lessons concerning timing of design of new fishing vessels, procurement of vessels and engines, and credit arrangements. The Government and the Bank's appraisal mission, however, did not fully incorporate these lessons in the design of the Second Project partly because they were not yet fully recognized at Government's level at the time of appraisal. As a result, some of the mistakes made in the First Project were repeated in the Second. In addition, the final design and testing process of the two new types of fishing vessels to be financed under the credit program of the project were not completed prior to start-up of procurement and credit operations. As a result procurement was delayed, fishermen trust in the new vessels impaired, and credit repayment affected. When after initial testing it became apparent the newly designed vessels needed further modifications, and required extensive demonstration to convince fishermen the final design was sound, a decision could well have been taken to start project financing of traditional vessels of existing designs. Instead, the Bank urged BNT that the design be completed soonest to start up the credit program, a decision which put unnecessary pressure on the design and testing process and disregarded the major problems affecting the credit program (para 6). As a result procurement of hulls and engines became quite complicated due to the continuing changes in the vessel designs. Despite these problems, final procurement arrangements for vessel hulls and engines, although far from ideal provided fishermen with some choice of equipment, an essential requirement for fishery credit. The direct involvement of the Bank in the vessel design process proved quite costly; it would have been better if bilateral or multilateral grant funds had been used for this component instead of Bank supervision funds. Nevertheless, the designs which resulted from these efforts appear to have been successful, and the effort proved worthwhile.

6. The credit program for the fishery sector operated by BNT during the First Project demonstrated substantial weaknesses in the lending procedures and credit approval process; as a result, loan recovery was very low. Although some steps were taken to initiate improvements and increase recovery of fishery loans prior to and during the Second Project, no substantial improvement took place. One key reason for this is that BNT was not given primary responsibility for lending decisions, and decisions were not based on the past and expected performance of the beneficiaries. The Government and the Bank's failure to solve the problems of fishery credit operations in Tunisia on time was particularly unfortunate as between 1980 and 1983 virtually no new fishery loans were issued, pending completion of the design and testing of the new vessels, and adequate time would have been available to take action. The

^{1/} Tunisia, First Fisheries Project (Credit 270-TUN), Project Performance Audit Report, Report No. 3753, paras. 34-54 and lessons quoted in Highlights.

Government and the Bank appear to have been insufficiently determined in convincing the Fishery Authority and BNT management that more effective arrangements were required to improve loan recovery and the quality of new loans. Such a package of measures should have included arrangements to: (i) deal with abandoned vessels; (ii) address outstanding technical issues of operational vessels, built under the First Project; (iii) effectively force willful defaulters to repay by refusing to issue new fishing licenses; (iv) review all loans on a case by case basis; (v) introduce effective loan supervision by appointing more fishery credit officers and making them more responsible for lending decisions; and (vi) to limit fishery credit to those areas where the above program had been put in place. Because action of the Fishery Authority and BNT to implement some of the above points was generally not very effective, the repayment performance of loans made under the Second Project was worse than those under the First: Recovery of loans made under the First Project is only about 25% of amounts due in 1988; initial recovery of loans made under the Second Project reportedly is about 3% in 1988; in assessing the importance of this figure one should take account of the fact that most loans were issued in 1986 and 1987 with no grace period. The Bank should have pushed harder the consideration of postponing credit operations under the project until adequate steps had been put in place to assure sound fishery lending practices, and of dropping the requirement for fishermen to commence repayment before delivery of fishing boats^{1/}.

7. Other components of the project, notably the extension program and shore facilities for the ports were reduced during project implementation. The fishery extension component appears to have been ill conceived, although ultimately three mobile extension centers have been put in place. Their operational value appears limited. The reduction in shore facilities followed an increase in private investment in such facilities.

Results

8. The project was successful in creating needed infrastructure for the fishing sector, but its major objective, increasing fish production, was only partly achieved. Average catches of project fishing vessels was only about 55% of appraisal estimates. The project achieved its vessel construction targets, but about four years later. In total 476 fishing vessels were constructed. But despite the low catches vessels remained profitable, as fish prices increased much faster than estimated at appraisal. The effectiveness of most of the harbours also exceeded appraisal estimates; actual fish landings notably of the existing fleet, exceeded those estimates at appraisal by about 37% in 1987. The project experienced substantial cost increases in its ports component in terms of local currency; in terms of the rapidly appreciating US Dollars, actual project costs were well below appraisal estimates; no proposal was made to increase the disbursement percentage for civil works. Nevertheless the cost overrun in terms of local currency forced the Government to substantially increase its contribution to the project, while US\$4.7 million of the Bank loan were cancelled. The economic rate of

^{1/} The borrower has noted that recovery under the Second Fisheries Project was particularly affected by the inappropriate repayment requirements for individual loans, which in fact required fishermen to repay loans well before delivery of the vessel.

return of the project, calculated at 27% during appraisal, has been reestimated at 30%. The effects of delays in construction, and lower than expected fish production are more than compensated for by fish price increases, and by the positive effect the new ports have had on the productivity of existing vessels. Cost recovery measures for the ports constructed under the project have not been successful; these should have been focussed more on indirect recovery systems. The training component of the project was poorly designed and has not been effective.

9. There is currently no need for the Bank to initiate further lending for marine fisheries; most of the ports needed by the fishing sector have been constructed. However, the channel to finance fishing vessels still needs improvements. The Bank should continue to aim at improving the performance of BNT in the fishery sector through its ongoing agricultural credit projects. BNT currently finances fisheries in a highly selective manner, as part of the BNT 4 project.

Findings and Lessons

10. The project caused fish production in Tunisia to increase, but less than expected, and it was economically highly successful, but will probably not be successful from the financial (Government finance) viewpoint. Without the project, production would not have increased so much; this might have caused fish prices to increase even faster than occurred during project implementation. Notably the fishery harbour component appears to have been well conceived. Although ultimately vessel designs acceptable to the fishermen were completed, it required continuing modification to adjust to different circumstances prevailing along various parts of the coast. And because the designs of the vessels were directly linked to procurement and credit, substantial delays occurred in those operations. Lack of determination on the part of the Bank, Government and BNT caused ill conceived fishery credit practices inherited from the First Fisheries Project to continue. The result is a serious accumulation of highly doubtful arrears, and it is now difficult to correct this repayment performance which puts into doubt the replicability of project action. The project's aim of improving the performance of fishery extension was not fully achieved, largely because it was not well conceived. Efforts at addressing direct cost recovery issues do not appear to have been very effective. In this project, where fishermen have the alternative of landing fish on the beach, it would have been preferable to introduce indirect cost recovery measures only. Finally, the project successfully completed studies to improve fish stock assessment and to design two other harbours which subsequently have been constructed with bilateral assistance.

11. Various lessons can be learned from the implementation experience of the project:

- (i) If a project intends to use an existing credit system to finance vessels, it appears desirable to make all possible efforts to improve loan approval, distribution and recovery systems to acceptable levels prior to starting the new credit program;

- (ii) If new types of fishing vessels are to be introduced, adequate time, financing and technical assistance should be made available for a thorough testing program;
- (iii) No standard design should be accepted for a fishing vessel if it is intended for a non-homogeneous fishery; in general the choice of vessels and engines in a fishery project should be left completely with the fishermen;
- (iv) Fishing vessels of an untested design should under no circumstance be financed by a fishery credit program;
- (v) In a fishery credit program it is preferable to let fishermen select the engine of their choice. If, due to shortages of foreign exchange, it is unavoidable to procure engines in bulk, evaluation of bids should give adequate weight to fishermen preferences;
- (vi) The creation of a new central agency in charge of the fishery sector was a success because it was arranged prior to Board presentation, and because the local authorities were convinced of the need for institutional change.

12. The medium-term agricultural adjustment program (1987-91), which the Government of Tunisia agreed to implement in connection with the first Agricultural Sector Adjustment Loan, contains an action plan of measures designed to achieve major reforms in the credit systems. In July 1987 the Bank approved the BNT4 Project in support of this adjustment program, with a view to promoting the development of a sound rural credit system. Under the BNT project, lending to fishermen is now highly selective, strictly limited (no new fleet financing), and targeted to private fishermen who have a demonstrated record of fishing performance and a credit recovery rate of at least 90%.

TUNISIA

PROJECT COMPLETION REPORT

SECOND FISHERIES PROJECT (LN. 1746-TUN)

I. BACKGROUND

A. Resources

1.01 Fish resources in Tunisia's waters have been estimated to yield on a sustainable basis about 200,000 mt of fish, of which some 30% would be demersal (bottom dwelling) species; the rest constitutes small pelagic species (sardines) which mainly occur in coastal areas. Demersal species, which in 1977 were biologically under exploited, in coastal areas appear at present exploited beyond their biologically optimum level; pelagic species are still substantially under exploited. Demersal species are caught by trawlers (30% of total demersal catch); the rest is caught by artisanal fishermen fishing with some 2,700 mechanized and 4,800 non-mechanized vessels. Pelagic species are caught largely by specialized sardine boats. The substantial growth of fish production since 1977 has been predominantly of demersal fish; the proportion of coastal pelagic fish has remained largely static: 36% of the total catch in 1981 as against 39% in 1985.

B. Sector Setting

1.02 At the time of appraisal of the Second Fisheries Project production of fish was growing at an average annual rate of 9.9%, well above that experienced by the agricultural sector (6.7% p.a.). However, in spite of this high production growth, the Government felt that total volume of fish production (54,000 mt in 1977) was highly inadequate and well below the potential catch and the potential demand for fish products. Per capita consumption in 1977 was only 7 kg. Consequently, the Fifth Plan (1977-1982) aimed at a major further expansion of the production level. Actual production rose to 62,752 mt in 1982, 88,895 mt in 1985, and to over 99,184 mt in 1987. In 1985 the fisheries sector constituted 11% of the agriculture sector GDP and generated 21% of the agricultural sector's foreign exchange earnings. The formidable growth in annual production of fish since 1977 was made possible by a rapid growth in local demand, in part fuelled by a booming tourist industry, and by growing exports. But the encouraging development of the subsector resulted essentially from measures taken by the Government to promote production growth. With considerable fish resources at its disposal, and with 50% of all fishery activities carried out by artisanal fishermen, the Government felt that development activities during the Fifth Five Year Plan should particularly focus on development of artisanal fisheries. In 1976, Tunisia had 45 fish landing places, of which only a limited number had full fledged fishing harbor facilities. These were particularly used by the trawler and sardine fleet. Most of Tunisia's artisanal vessels at that time operated from unprotected landing places, without any supporting shore facilities. It was felt that the lack of such port facilities substantially reduced the average number of fishing days of many fishing boats. Hence, the Fifth Plan envisaged a rapid expansion of port facilities for the artisanal fleet. The Government facilitated construction of a total of 33 ports, shore

facilities and (between 1982 and 1985) almost 600 vessels. The support for vessel construction by the Government was pursued in part through concessionary credit and subsidies through a special Government fund (Fonds Spécial d' Encouragement à la Pêche - FOSEP) administered by the Banque National de Tunisie - BNT. Subsidies amounted to up to 20%, still well below the 40% subsidies available for agriculture investments.

II. The First Fisheries Project (Cr. 270-TUN)

2.01 IDA's First Fisheries Project was designed to help initiate a modernization of Tunisia's artisanal fishing fleet. The project was completed in 1980, and a Project Performance Audit Report was finalized in 1981. In addition to modernizing Tunisia's fishing fleet, the project also aimed at reinforcing institutions responsible for the fisheries subsector and, for credit to fishermen and providing overseas training. The main project objective was to enable the proposed 335 project-financed boats to increase production of inshore demersal fish by about 55% through providing better fishing gear, improving vessel efficiency and an increase in the number and duration of fishing trips.

2.02 The project only partially succeeded in achieving its original objectives. Boat unit costs turned out to be about 57% more than appraisal estimates mainly because of lack of detailed design as a basis for cost estimates, project-start up and implementation delays and inflationary pressure in the wake of the 1973 oil crisis. The total number of boats had to be reduced to 190 and most of the planned improved design features had to be eliminated to cut costs. Frequent engine breakdowns were experienced with excessive repair times resulting in some resistance among fishermen to buy the new boats. The last boat was sold in January 1980, three years after the target closing date. The project particularly experienced problems with the ICB procurement of engines; the lowest evaluated bid concerned engines unknown in Tunisia, and of a design unsuited to the hulls which eventually were constructed. BNT which was in charge of administering the fishery credit component, did not have the number of field staff necessary to fully handle fishery loans. Recovery performance for boat loans had been poor (recovery in 1980 was 6% and has subsequently improved to 25%) mostly because (i) BNT was not made responsible for loan approvals and recovery; (ii) it lacked fishery expertise; and (iii) because of technical difficulties encountered by fishermen. In September 1980, 151 boats were fully operational, 12 boats had sunk and 24 were immobilized and partly abandoned by their owners. Production per boat was less than half of appraisal estimates. Despite the low catch figures, more than half of all boats had acceptable (21-31%) rates of return because fish prices rose faster than inflation; for the same reason, the project's ERR was higher (43%) than estimated at appraisal.

2.03 The project audit ^{1/} gave a number of lessons which are particularly relevant to the Second Fisheries Project: (i) in selecting engines and vessels for a fishery project, adequate weight should be given to fishermen preferences; (ii) the need for firm and appropriate arrangements regarding loan recovery from inshore fishermen; and (iii) with inshore/artisanal type fisheries, it is counter-productive to attempt to force

1/ Tunisia, First Fisheries Project (Credit 270-TUN), Project Performance Audit Report, Report No. 3753 paras. 34-54 and lessons quoted in Highlights.

the pace of technical progress unless the program follows a period of trial and demonstration. The PPAR also concluded that the institutional performance of shipyards in charge of hull construction under close supervision of a naval architect had been very satisfactory.

III. PROJECT FORMULATION

A. Identification and Preparation

3.01 In 1976, when the First Fisheries Project started experiencing increasing problems with loan recovery and deteriorating vessel performance, an FAO/CP mission identified the Second Project. Based on two local engineering studies, 1/ the mission identified a project based on the integrated development of the sector, and recommended development of 12 sites for harbor development for coastal fisheries. The mission also recommended that additional engineering studies be carried out to arrive at preliminary designs for each site. Following considerable delay in recruitment of engineering consultants, designs were finalized in 1978. Because the proposed project included a line of credit for fishing vessels, steps were undertaken under the First Fisheries Project to improve loan recovery procedures, including assignment of some additional staff to help improve collection of fisheries loans. Unfortunately, no steps were taken yet to initiate detailed design, construction, and sea trials of the two new types of fishing vessels which the Second Project was envisaged to finance.

3.02 In 1976 various Government agencies were involved in the fishing sector. Following identification it was felt there was a need to establish a coordinating body, or entrust a single Government agency with overall responsibility for project execution. In addition, a consultant was hired to study a suitable form of organization which would be in charge of fishing harbors. The result of this study and the engineering studies were reviewed by a joint FAO/CP/Bank mission in early 1978; no formal preparation mission took place. The project was appraised seven months later.

B. Appraisal

3.03 The project as finally appraised had as its objective to increase fish production by means of: (i) construction of ten fishing ports, (two sites were found unacceptable during appraisal); (ii) provision of credit through BNT for boats of 11 and 13 m length, fishing gear and 40 trucks; (iii) technical assistance and 10 mobile instruction units for fisheries extension; (iv) equipment and shore facilities for existing ports; and (v) studies for future projects, resources and lagoon fisheries. The mission recommended to link the project to an institutional reorganization of the fisheries sector; it suggested to create a new authority to be in charge of all non-commercial fisheries activities including administration of port infrastructure. Establishment of the Authority would be a condition of negotiations. The mission also recommended that, despite the unsatisfactory experience with loan

1/ Development of fishing ports had been studied during 1973/77 by two local engineering firms, which had made proposals for development of about 12 harbors.

recovery during the First Project, a line of credit be provided to BNT to finance fishing vessels. It proposed that cooperatives be used to improve loan collection, BNT install agents in all major ports and agree to a program of improvement of loan recovery (40% in 1979 and 75% by 1982). The mission recommended against full cost recovery of the port investments, citing the lack of existing user charges; in order to achieve full cost recovery harbor duties would have to reach very high levels, discouraging fishermen from using the ports. However, the appraisal report noted that a cost recovery study be carried out by 1980 to determine the basis and terms and conditions of port fees. The Government agreed to implement a cost recovery system by the end of 1982. The Government also agreed that through taxes, duties, port and rental fees it would recover all operating and maintenance costs, and 80% of total investment costs.

3.04 Total costs of the project were estimated at D 27.0 million (US\$67.5 million) of which 42% foreign exchange. The project would be executed by the to be established Fisheries Authority, while the Harbor Department would be the executing agency for construction of the ports.

3.05 Construction of the ports would be procured through ICB. In addition, contracts not exceeding US\$250,000 equivalent for civil works, with an aggregate value not exceeding US\$750,000 could be tendered locally. Port contracts would be grouped in three lots, each valued at about US\$8.5 million. Similarly, three contracts would be let for civil works of shore facilities, while equipment for all new and existing ports would be combined in one ICB contract. Hulls for fishing vessels would be procured by the Fisheries Authority on the basis of local competitive bidding (a similar arrangement had been applied in the First Fisheries Project). Vessel engines would be procured under ICB procedures, although the SAR specified that two suppliers could be awarded the contract in order to take some account of the fishermen's preferences. It was assumed that for the hulls and the engines contracts would be phased over time, each separate contract covering the supply during about 18 months. In addition, upon the special request of fishermen, fully equipped ferro-cement or fiberglass boats could be purchased through negotiated contracts, with an annual limit of US\$100,000.

3.06 The project was expected to create an incremental production of about 8,600 tons of fish. The estimated Economic Rate of Return of the project (27%) was based on the assumption that demand for fish in the local market would continue to exceed supply, and that fish prices in real terms would continue increasing at an annual rate of 6% until 1985, 4.8% up to 1990, and 3.6% thereafter. The increased production would largely come from the new boats; it was also assumed that without the project 20% of the existing fleet of rowing and sailing boats would withdraw from fishing.

IV. PROJECT START-UP

A. Effectiveness and Start-up

4.01 The Project was approved June 28, 1979. The Effectiveness Date, originally set for October 18, 1979, was extended three times. The actual Effectiveness Date was May 14, 1980. The delays were mainly due to slow progress in finalization of the Subsidiary Loan Agreement, and in the ratification of the establishment of the Fishery Authority.

B. Revisions

4.02 Several revisions have been made in the legal documents of the project. In September 1982 it was agreed to: (i) reduce the amount of shore equipment in existing harbors, reflecting increasing investment of private parties; (ii) reduce the number of mobile extension units from 10 to 3, which reflected the limited implementation capacity of the Fishery Authority; (iii) to allow fishermen to procure fishing gear directly from local dealers rather than under a bulk procurement arrangement; and (iv) reducing the number of trucks in the project from 40 to 24, and those trucks to be sold, not leased to fishermen cooperatives and private operators.

C. Procurement

4.03 Ports. Nine bidders tendered for the three port contracts. The three lowest bids totalled D 14,9 million, or about 50% higher than appraisal estimates (see para 4.04). Following a request from the Tunisian Authorities the Bank discussed what action could be taken to reduce the costs. During the consultation with Tunisian representatives in Washington it was decided to: (i) award contracts for two groups of harbors to the two lowest evaluated bidders for each group; (ii) allow the Tunisian authorities to enter into negotiations with the lowest evaluated bidders with a view to reduce the costs of certain items (reference to para 3.10 of the Guidelines). In case a satisfactory contract could not be achieved, negotiations with the second lowest bidder would be entered into. Concerning the third group, it was decided to request the lowest bidder to elaborate on a proposal to construct the harbors in an alternative, cheaper way. After evaluation of the proposal to determine whether the alternative would be technically feasible, a decision on award of contract would be made. After determining the lowest evaluated bidder for this contract, negotiations would be entered into to reduce its costs, similar to the other two contracts. If negotiations would be ineffective in substantially reduce construction costs for each contract, the Tunisian authorities intended to reduce the scope of some of the works, without affecting the basic functions of the ports. The technical evaluation of the alternative technical solution was mixed; it was only applied in one port (Ennajet). After having awarded the contract for the third group of harbors to the lowest evaluated bidder, the Tunisian authorities succeeded in reducing the cost overruns by 40% by applying the alternative technique in one port, negotiating on certain cost items, and reducing the number of jetties in some ports. Final costs of the three contracts exceeded appraisal estimates by about 30%. The cost overruns were largely financed by the Government.

4.04 The reasons for the high bids were several: unit prices were underestimated by consultants, price contingencies of 6% annually used in the appraisal report were too low, the tender disallowed price increases for the foreign exchange component, and the completion period of 30 months was considered too short. During implementation it was found that the quantities of certain items in the tender documents were considerably underestimated; these underestimates were estimated at about TD 0.4 million (US\$1 million). Necessary design improvements added another TD 0.15 million (US\$0.4 million). During implementation several variation orders under present contracts and new contracts for additional works were signed. Because construction was delayed in many instances, price escalation clauses were introduced in originally

fixed price contracts; the rate of increase was generally about 12%. Total costs of variation orders was about D 836,000 (US\$1.1 million). Prior to the Closing Date (December 31, 1985) additional contracts for civil works were awarded through LCB valued at D 1.084 million (US\$1.4 million). Although at odds with the Bank's rules for procurement and with the Loan Agreement, the Bank decided to finance these contracts anyway because from an engineering point of view, and from the point of view of sound management of public affairs procurement and contract award were considered reasonable. The legal agreements specified that LCB contracts for civil works should not exceed US\$750,000.

4.05 Vessel Hulls and Engines. As discussed in para 2.03, the PPAR of the First Fisheries Project provided a number of lessons concerning design of inshore fishing vessels, procurement of such vessels, and credit arrangements. However, although these lessons were not fully disseminated until late 1981, i.e., after appraisal of the Second Project, Bank staff and Government officials were informed of the main problems of the project. Nevertheless, arrangements which were agreed after the appraisal of the Second Project were virtually similar to those which would be criticized in the PPAR of the First Project: (i) the credit program again involved untested, unaccepted vessel designs, one vessel type of modified design of 11.25 m and a vessel of completely new design of 13.80 m; (ii) hulls and engines would again be procured in bulk, but separately, using local and international competitive bidding respectively; and (iii) existing credit arrangements were largely accepted. Although the ICB arrangement for engines was modified to allow for contract award to two suppliers, the proposed arrangements did not eliminate the chance that the fishermen would again be forced to accept unpopular, or unknown engines.

4.06 Vessel Design and Procurement. The project aimed at improving the efficiency of the existing 11.25 m vessel by creating a new deck layout and other relatively minor changes in the hull design. General design for the boat (and the 13.80 m vessel) had been prepared during and after appraisal by a consultant naval architect. During various visits the general design was modified to reflect views of various parties including the fisherman in Tunisia. The Fishery Authority did not have a naval architect to translate the general design into detailed construction drawings. For this purpose a separate naval architect was hired, which resulted in some delays. Meanwhile discussions concerning the design of the vessels and their equipment continued. When detailed design had been completed construction of hulls of the 11.25 m boat was tendered without testing a prototype vessel, and bids were received in September 1980. Two major boat yards in the country, which had been involved in construction of vessels for the First Fisheries Project, refused to bid, claiming they considered the boat would not perform as required. The bids actually received ranged from D 13,000 to D 30,000, compared with an appraisal estimate of D 7,000. The Fishery Authority decided to withhold action on procurement of the hulls and engines until prototypes could be built and demonstrated to test the vessels' speed and adaptability for local fishing conditions. Similarly, the 13.80 vessel would not be procured until a prototype had been tested.

4.07 The first tests of the vessel (with an engine different from the ones which would be procured under the Second Project) were positive. The Fishery Authority then retendered for the hulls, following an acknowledgment of the two major local boat yards to participate in the bidding. Prices now varied

between D 10.500 and D 26.600, which would cause fully equipped boats to cost about 50% over appraisal estimates. This result caused Bank staff to review the bulk procurement procedure for the hulls of the vessels. The PPAR of the First Fisheries Project had suggested that it would have been better to let fishermen make their own arrangements for hull construction, and that BNT would finance the actual construction costs of each individual hull. Ultimately, after considerable discussions, it was decided that a fundamental change be made in the procurement procedure. Whereas under the First Project the Fisheries Authority made a firm order to the yards for a predetermined number of boats, the Authority now intended to order hulls progressively as they were ordered by the fishermen. Therefore it signed delivery agreements with a number of yards, which would not imply any obligation to purchase. Each yard agreed to deliver a maximum number of hulls during a specified period for a specified price. That price was fixed for all yards following negotiations at D 12.000 for the 11.25 m vessel and D 16.300 for the 13.80 m vessel. The price was 46% above appraisal estimates (without price contingencies) for the 11.25 vessel, and slightly below appraisal estimates for the larger vessel. For the 13.8 m vessels it became soon apparent that the negotiated price was too low, and new negotiations were held to determine a more reasonable price.

4.08 The design of the vessels continued to be discussed and further changes were made at individual yards throughout the project implementation period. This is a normal practice, as most fishing vessel designs continue to evolve to reflect local requirements and individual preferences of local fishermen. The first vessel used for demonstration to fishermen (the second vessel built) had its engine wrongly installed which caused a power loss of almost 50%. Fishermen in the northern area of the country then insisted on a bigger engine, while fishermen in the south, which experiences usually calmer seas, asked for a smaller boat. Ultimately the engines selected for the project boats were accepted in both areas. The deck layout demands for both areas appeared different, and this caused boatyards to make further design adjustments. Substantial time and effort was also spent on testing and procuring net haulers on the vessels.

4.09 Procurement of Engines. Procurement of the engines became quite complicated as a result of the continuing changes in the design of the vessels. Initial specifications had to be adjusted, even after tenders had been received, to suit the vessel design and performance characteristics. Delays in construction of the test vessels (para 4.07) and adjustment of the specifications caused further delays. Ultimately, two suppliers (of which one local) were awarded contracts for the 11.25 m vessel engines, and one supplier for the 13.80 m vessel engines. Because demand for the 13.80 vessel far exceeded appraisal estimates (85 vessels were ultimately constructed) the contract with the supplier was extended to cover the additional engines. Fishermen reportedly selected only one type of engine for the smaller boat.

4.10 Design of the vessels and the procurement procedures followed proved less than optimal. The conclusion of the PPAR of the First Fisheries Project that new vessel designs should be properly tested is equally valid for the Second Project. The credit program should not have focussed on the new designs until testing, trials and demonstrations had been properly executed. Such testing is usually time consuming; IDA's experience in other parts of the world indicate a minimum of four to five years. In the meantime, traditional

vessels might have been constructed under the credit program. The arrangement of bulk procurement of vessel hulls and engines proved time consuming and cumbersome and could have led to technical problems. One should not procure engines or vessel hulls in bulk while the design and testing process of the vessels has not been finalized. Also although the experience of the First Fisheries Project with selection of an engine which was not accepted by the fishermen was not repeated, the procedure of not incorporating fishermen preferences in the evaluation procedure could have resulted in an equally unacceptable contract award. It was unfortunate that the engine contract did not specify that additional engines might be required. When demand for the 13.80 m vessel engines increased, price negotiations proved necessary at two different occasions. The arrangement of open contracts with the boat yards proved quite efficient; it is unclear whether an alternative arrangement of free choice of the fishermen to order construction of a vessel for an individually negotiated price would have been more efficient. Nevertheless, experience of fishery credit programs in other parts of the world indicate that if at all possible, fishermen should be allowed to select freely their own hull, engine and boatbuilder, without the credit supplier dictating or limiting his choice.

V. CONSTRUCTION IMPLEMENTATION

A. Implementation Schedule

5.01 Project implementation started slowly as Loan Effectiveness was delayed by six months. The credit component experienced substantial delays as a result of the design and procurement problems discussed above. In fact, the credit program only started in earnest in 1984 to finance vessel construction; virtually all vessels were ordered in 1984 and 1985. Construction of the ports was initially also delayed because of procurement problems. Several technical issues delayed construction so that by the completion date (December 31, 1984), only three ports out of ten were fully completed. The other seven were completed over the next 3 years; the last one was reportedly completed by the end of 1987. The project Closing Date was extended once by six months. A further extension was rejected because of the unacceptable loan recovery performance on BNT fishery loan portfolio. After the Closing Date the books were kept open for six months, this period was then extended to 12 months. After the 12 month period it was decided to retroactively extend the Closing Date for a second time by one year (until December 31, 1986) and keep the books open until June 30, 1987. In March 1987 US\$3 million of the uncommitted savings of the project were cancelled. When the books were closed in July 1987 an additional US\$1.684 million was cancelled.

B. Port Component

5.02 Construction of the ten ports of the project was undertaken by three construction companies. The ports of Sidi Daoud, Beni Khiar and Hergla in northwest Tunisia were constructed by one contractor, Zarat, Boughrara and Adjim in the south by a second contractor, and Salakta, Louata, Ennajet and Mahres in the center by the third. Actual construction started in July 1980 for the first group, November 1980 for the second, and June 1981 for the third.

5.03 Construction of some of the harbors took more time than estimated at appraisal. At appraisal it was estimated construction of port infrastructure and superstructure would be fully completed by the end of 1982. As of May 1985 infrastructure was 90% completed, and superstructure 70%. All construction activities were reportedly fully completed by the end of 1987.

5.04 All three firms had some start-up delays, but some of these initial delays were generally quickly recovered. The first port to be completed was Hergla (mid 1982). No problems were experienced in its construction, and quality of workmanship was high. The other ports in this group (Beni Khiar and Sidi Daoud) were completed without major problems and to a high technical standard by the end of 1983.

5.05 Of the three southern ports Zarat, which is situated at a larger, protected bay, experienced substantial siltation problems once construction started; in addition, the port experienced abnormal wave patterns within the harbor. Studies were undertaken to examine the problems, and additional works were reported to have been completed by January 1988 to deal with the problems. The ports of Adjim and Boughrara experienced general delays in construction, in part due to construction planning. Both ports were reportedly completed by the end of 1985; no major technical problems have been reported during construction.

5.06 The third group of ports experienced most problems. As of the end of 1984, the ports of Salakta and Louata were largely finished, but those of Ennajat and Mahres were only half complete and would experience substantial further delays. Lack of suitable rock on the island of Kerkenah, on which the port of Cunajat was located, caused works to be halted for over two years until an acceptable solution was agreed upon. Although the issue at Ennajat was raised in March 1982, as of November 1984 no decision had been taken. Ultimately the port was constructed with the use of concrete blocks; no date is available for its final completion. The reasons for the long delay are unclear. During the last technical supervision of the project (October '82) it was noted the contractors had yet to provide details of their proposal to use locally available rock. At the port of Mahares similar problems with the availability of suitable stone and sand were experienced. The contractor had to explore four quarries in order to find the right material. As a result, the contractor stopped work for six months, and as of the end of 1984 only 60% of the infrastructure had been completed, and none of the superstructure. All works were reportedly completed by 1987.

5.07 Although completion of some of the ports was substantially delayed, there is little doubt they appear highly effective in providing shelter to local fishing fleets. A review of the use of the ports in 1988 revealed that at ports noted below actual fish landings in 1987 exceeded those estimated at appraisal by 37%.

**Table 5.1: Fishlandings (as estimated during appraisal, and actuals)
for selected Tunisian Fishing Ports (1984-1987)**

	Appraisal Projection for			Actual Traffic		
	1984 (Year 1)	1985	1987	1984	1985	1987
	(t)			(t)		
Sidi Daoud	192	334	700	411	393	507
Ben Khiar	88	88	800	266	412	489
Hergla	31	31	700	112	116	169
Salakta	245	315	500	337	483	563
Louata	1,070	1,490	1,750	2,843	3,485	4,360
Mahares	823	823	1,000	1,723	1,883	759
Bou Ghrara	291	291	750	845	1,340	1,753
Adjim	754	754	1,200	1,208	1,494	1,510
	<u>3,494</u>	<u>4,126</u>	<u>7,400</u>	<u>7,745</u>	<u>9,606</u>	<u>10,115</u>
	=====	=====	=====	=====	=====	=====

There appears little doubt that the ports do play an important role in increasing Tunisia's fish production, and were a justifiable component of the project.

5.08 The actual costs of the ports if calculated in Tunisian Dinars (D 23,6 million, of which 40% foreign exchange) exceeded appraisal estimates by almost 95%, however in terms of US dollars actual costs (US\$35 million) were only 16% higher than appraisal estimates, reflecting the rapid appreciation of the US dollar during the construction period. The increase in costs in terms of Dinars caused the Government share of the costs to increase by about 85%; these additional resources were fully provided by the Government, and virtually no facilities were deleted from the ports despite the major burden of the additional costs on the Government budget.

5.09 Supervision of the works was carried out by local consultants with some foreign technical assistance provided by the consultants which had designed the ports. This arrangement was generally effective. During construction a number of studies took place: hydrological and sediment studies at Zaret, Boughrara, Louata, Hergla and Ben Khiar, and soil studies at Boughrara, Mahares, Hergla and Salakta. These studies, among others, established the need for maintenance dredging and the existence of rocky areas which needed to be removed. These studies are quite usual as part of construction of small harbors, and do not appear an indication of incomplete or insufficient surveys during the design phase.

C. Credit Component

5.10 The credit component of the project achieved its physical targets - about 470 vessels were financed and constructed - and it appears likely that most boats operate in a financially efficient manner. But the loans which financed these vessels are not being repaid (recovery in 1988 on loans made under the Second Project stood at 3% of payment due, compared to 25% of dues

for loans made under the first Project) and hence the ultimate success of the vessel construction program is being over-shadowed by the virtual failure of the credit program to recover the loans, particularly because credit, approval and distribution in Tunisia during project implementation were inadequate (para 8.02).

5.11 The key to creation of a healthy fishery credit program is the understanding of the nature of fishery operations - unlike in agriculture most fishermen land fish and receive money every working day but daily, or even monthly income fluctuates enormously, and repayment is only possible when daily income exceeds daily operating and consumption requirements. Hence fishery credit requires close, frequent and continuous contacts between staff of the credit agency and the owner of the fishing craft to ensure repayments every time a good catch is made. In some fisheries such catches are only made during 10 to 20 days a year, often spread out over extended periods. Experience in many parts of the world teaches that the role of the credit agency cannot be replaced in part by another agency - it is sometimes suggested that repayment be handled through marketing agents - unless such agency assumes full responsibility for the loan and its repayment. The PPAR of the First Fisheries Project, ^{1/} and experience with a growing number of small-scale fishery credit projects in various parts of the world indicate that key elements of a healthy credit scheme include: (i) frequent contacts with the fishermen, or provision of credit through marketing institutions, combined with (ii) enforceable arrangements for repossession of craft, and (iii) careful selection of genuine fishermen as borrowers. Two other key, but sometimes overlooked aspects are that: (iv) fishing vessels financed by such credit should be able to operate profitably, and (v) have a design fully accepted by the fishermen, if fishermen are not free in their choice of equipment.

5.12 The experience during the First Fisheries Project showed IDA's first attempt at organizing a fishery credit program in Tunisia was deficient in several aspects:

- (i) Fishermen were not selected by the credit agency, the Fishery credit operations were administered from the credit agency Headquarters, there was no specialized staff in BNT's 30 branches to handle repayment; repayment was also to be made only to Headquarters.
- (ii) Vessels financed under IDA's credit program were not necessarily of a design acceptable to the fishermen. Centralized design, bulk purchasing of engines and equipment and building boats on contract tend to ignore the demands of the fishermen. In this particular case no major design changes were effectively introduced during the First Project; the problem was that engine selection proved mostly unacceptable to borrowers. In general standardized design is only possible in a very homogeneous fishery, and only after extensive testing of prototype vessels by fishermen. In this case, no such testing had taken place, while the fishery is not homogeneous.

1/ Tunisia, First Fisheries Project (Credit 270-TUN), Report 3753. Project Performance Audit Report.

- (iii) As a result, attitudes of fishermen with respect to repayment of fishery loans deteriorated. Lack of interest of bona-fide fishermen in purchasing the vessels promoted by the IDA scheme and lack of responsibility for BNT for loan approval, also led BNT to lower the standards of loan appraisal and grant loans to people with little previous fishery experience. This further affected loan repayment.
- (iv) Finally, no effective arrangements appeared to exist to repossess and dispose of fishing craft.

5.13 When the Second Fishery Project was appraised in 1978, these findings were not yet disseminated, although the problems of the project were known. The SAR stated that the very low recovery of fishery loans (both FOSEP and IDA loans) under the First Fishery Project was caused by the following factors: (i) Fishermen not having to make any down payment, as they could receive their 10% down payment from the Rural Development Program as a loan; (ii) perceived or real frequent breakdowns of vessels financed by IDA; (iii) a total lack of cooperation between BNT and the fishery agency for recovery of loans; and (iv) a total lack of "credit supervision". As a result recovery on loans refinanced by IDA was 6% in September 1978. The appraisal report then listed that concrete steps had been taken to rectify the situation: (i) improvement of cooperation between BNT and the Fishery Authority; (ii) recruitment of seven specialized BNT recovery agents; (iii) agreement that the Fishery Authority would link reissuing of fishing licenses to credit repayment performance; and (iv) opening of legal proceeding against seven loan defaulters. BNT further agreed to increase recovery on IDA refinanced loans to 75% by 1982, i.e. in three years time.

5.13 During implementation of the Second Project, the performance of the credit program remained highly disappointing. Average recovery on loans made during the First Project improved somewhat from the 6% reported at appraisal, but never increased above 25% (data until December 31, 1986). In fact, recovery has remained remarkably constant at between 20% and 25% for the past six years, with the exception of a few limited areas where recoveries reached over 70%. The credit program of the Second Fisheries Project inherited the weak performance of the First Project and has so far not been able to turn the program around. As of July 1988, initial recovery on loans made under the Second Project reportedly stood at 3% of amounts due; this low figure was largely the result of postponed repayments due to late delivery of vessels. This highly unfortunate situation might have come about by a number of factors, which all seem to have contributed to the thoroughly unsatisfactory credit climate presently prevailing in the fisheries sector:

- (a) During appraisal and supervision of the Second Project and particularly following preparation of the PPAR of the First Project, no effective steps have been taken to clean up the portfolio of the First Project.
 - (i) Arrangements to deal with abandoned vessels proved only partly effective, and some were never concluded;

- (ii) No decisive steps were taken to solve the technical issues affecting the already constructed vessels of the first project, while simple and cheap arrangements could have been taken to solve some of the prevailing problems with the engines.
 - (iii) Attempts to force willful defaulters to repay by withholding fishing license had only a limited impact; the Fishery Authority apparently never completely stopped to issue licenses to selected willful defaulters. Although repossession of vessels was possible, BNT had great difficulty selling the vessels at a reasonable price. Here again IDA could have insisted on more effective arrangements being put in place to force genuine willful defaulters to repay, i.e. to stop disbursement on this component.
 - (iv) Attempts at a case by case review of the portfolio of the First Project, and adjustment of repayment and recovery practices to suit the particular circumstances of each borrower were not made. BNT and IDA could have made arrangements to let borrowers repay on a more frequent basis to all branches located in the coastal zone.
- (b) Lending arrangements under the credit program for the Second Project were not substantially adjusted to improve the credit climate.
- (i) When it became clear that the vessels designed for the Second Project required testing, demonstration and further adjustment, BNT and the Bank should have temporarily halted all credit operations for these new vessels until fishermen had expressed their confidence in the design and construction arrangements. The Bank instead urged BNT to make all possible efforts to speed up the already delayed credit program once the first boat had made a successful maiden voyage. However, continuing adjustments were being made to the design as a result of fishermen complaints almost until the end of the project. Such complaints were, at least initially, considered a threat to the quick implementation of the project. In actual fact, they appeared to have been a genuine sign that arrangements to organize the highly centralized vessel design, procurement and construction program at least made the impression that inadequate attention was paid to genuine fishermen needs. These fishermen were used to ordering their new vessels individually, to their own specifications. They also might have become very cautious as a result of the experiences with the engines in the First Project. The Bank should have halted the credit program until most bugs had been removed from the design, to demonstrate its intention to finance sound, reliable boats^{1/}.

1/ The borrower noted that the performance of the credit programme could have been improved if the following adjustments had been made:

- (i) a better selection of fishermen;
- (ii) no limitation of credit for standard vessels only;
- (iii) no limitation of credit for vessels of selected boat builders only; and
- (iv) more flexible building contracts.

- (ii) BNT and the Bank continued to accept the limited involvement of local branch staff in fishery loan collection. Prior to appraisal the Bank proposed that BNT appoint 20 special loan officers in the field. During negotiations it was agreed that 7 would be posted. Later most were replaced frequently and few proved effective. Only in a few ports did collection improve as a result of special efforts by BNT staff in cooperation with the Fishery Authority. In many other ports BNT remained without staff to actively handle fishery loans. To be effective BNT should have limited fishery lending to those areas where it had suitable staff to handle fishery loans.

5.14 Just prior to the first Closing Date of the project, and despite the poor performance of the fishery credit program, the Fishery Authority and BNT approved a large number of new credit applications for vessels. It is unclear whether this wave of applications was the result of a recognition on the part of the fishermen that the vessels financed under the scheme were basically sound, or whether it was caused by measures by the Fishery Authority and BNT to maximize lending under the project. There is little doubt there was a genuine interest on the part of the fishermen in the 13.80 m vessel, of which a total of 85 were financed, compared to 30 estimated at appraisal. This vessel also received relatively few complaints. However, the smaller vessel, of which ultimately 391 were financed, received most of the orders in 1984 and particularly 1985. Questions about the vessel were recorded as late as 1984. The late orders might also have been caused by the fact that new arrangements for down payment had been agreed upon. Under the First Project borrowers received the 10% down payment for the loan in the form of a loan from the Rural Development Program. In practice this loan was usually not repaid. When this arrangement was removed in 1979 for the Second Project, fishermen objected to the 10% down payment they had to make, and many refused. Ultimately it was agreed fishermen would make a 5% down payment.

5.15 Actual construction of boats substantially lagged behind orders. Although the first orders for 11.25 boats were made in 1983, delivery did not start until 1984. Of all vessels ordered prior to the first Closing Date of December 31, 1985, only 90 were actually delivered by that date; 165 vessels were delivered in 1986, 170 in 1987 and 51 in 1988. The rush to accept orders prior to the Closing Date no doubt has been the main cause of the delays, as the capacity of the contracted boatyards was limited. As a result of the delays fishermen were forced to pay down payments several years before delivery of the vessel. This no doubt has further reduced the borrowers willingness to repay the loans in a timely fashion.

D. Extension Component

5.16 The project intended to focus on on-the-job training for fishermen, and would finance 10 mobile training units. In addition, the project would install engines in the most important fishery training schools for demonstration purposes, to help address the problems of the vessels financed under the First Project. This component never achieved what it was set out to do. In general fishermen need very little advice on how to catch more fish, how to repair nets, and how to maintain vessels. They know better than

anybody else where they might expect fish, and how it should be caught. They only need assistance, or better: a demonstration, when genuinely new nets, equipment or engines become available which would help them to reduce their manual labor on board, to speed up fishing related activities, to repair equipment or to better catch fish. In those cases they need a demonstration how the equipment works and needs to be installed and operated, and training in maintenance. For this project it is not very clear what the mobile extension units were designed to do. The appraisal report refers to three instructors (for nets, engines and electrical, and wood working) per unit. If one of the objectives of the mobile units was to improve engine maintenance, a better solution would have been to provide local engine repair shops with special training and spare parts, and organize local training sessions for fishermen at the repair shops. Following appraisal the Government soon had second thoughts about the initial proposal of 10 units and suggested to limit the component to three units, and provide additional training through the engine supplier of the Second Project (a local company) and to existing boat yards to train carpenters. It is unclear whether this training has actually been carried out, since supervision reports do not report on this matter. The Bank strongly supported to the Government's proposal. But since then very little progress has been made. Various reasons for the delays were cited by various Bank supervision missions (delays in procurement of vans, lack of suitable extension agents, lack of coordination within the Fishery Authority, and lack of funds). The Government also requested funds for specific training of staff in charge of the refrigeration plants constructed under the harbor component of the project. The Government reports that the vans have been operational since 1983, although it is unclear how effective they are. It is also unclear whether any training was being provided with respect to the refrigeration plants. This component clearly was inadequately designed, possibly a reflection of the complete lack of fishery extension specialists in identification, appraisal and supervision missions.

E. Studies and Research

5.17 Feasibility studies for the expansion of the ports of Kelibia and Tabarka were to be prepared under the project because of their importance as cargo and fisheries ports for the Northwest region. The feasibility studies for both ports were carried out by a local consulting company, and were successfully completed by early 1982. Construction was eventually financed with bilateral funds.

5.18 The project also financed a study to improve lagoon fishing along the Tunisian coast. The study was executed by private consultants and completed by late 1983. As a result of the study several private investment proposals were made to exploit the fish resources in the lagoon.

5.19 Under the project the Tunisian Fishery Research Institute (INSTOP) with assistance from FAO carried out a study to assess the size and sustainable yield of the country's fish resources. The study created a computer program to assess stocks on an annual basis, using catch and fish landing data. The study was completed by the end of 1983, and appears to have been effective in improving fish stock assessment work by INSTOP.

5.20 A study to assess what costs of the construction and operation and maintenance of the fishery ports should be recovered by the fishermen was carried out by a local consultancy company under the project. The study was

completed in 1982. It concluded that prevailing charges were very low (between 4% and 10% of O&M costs were actually being recovered in 1981), and that of these very low charges only 70% was actually being collected. The consultant recommended that the ports should be self sufficient for O&M, overhead and depreciation. Rehabilitation and development should be paid by the Government. The report proposed to increase port charges to cover O&M and depreciation charges. When the Bank reviewed the report, it concluded that in some cases the proposed increases were of such a magnitude that they might discourage intensive and efficient use of the ports. A final list of price increases for port services, which took account of the Bank's comments, was reportedly issued by the Government in late 1985. However, a Bank review of port maintenance practices in 1986 concluded that very little maintenance had taken place, and that strong resistance had been encountered in levying port dues in the ports. No more recent information is available about cost recovery. In view of the experience with port charges on small fishing ports in other parts of the world, which clearly show the need to rely heavily on indirect charges, and because the appraisal mission quite specifically recommended against substantial direct charges, it is unfortunate the study did not focus more on the potential of using indirect methods to recover costs.

F. Institution-Building

5.21 Under the project a new Fishery Authority has been formed, to take over all administrative and regulatory functions from various other agencies in the fishery sector. Appropriate promulgation of the necessary legislation was formally introduced in August 1979. The new Authority received staff from various agencies. All fishery training schools and training centers, and the fishery research institute (INSTOP) were brought under the umbrella of the new Authority. The cooperation and effectiveness of the Tunisian authorities to create the new Authority were quite remarkable. The Bank's proposal for reorganization, which was made at appraisal was very quickly accepted and effectively implemented. The degree to establish the Authority under the Ministry of Equipment (which is also in charge of ports) was signed in August 1979 while its Director General was appointed by the same date. More recently the independent Fishery Authority falls under the responsibility of the Ministry of Agriculture. The Administrative and Financial Organization and operating rules for the Authority were completed in March 1980. Creation of the Fishery Authority has had a positive influence on project implementation. The fact that the Authority resorted under the Ministry of Equipment during most of project implementation allowed all project matters to be dealt with by basically one ministry. There appears little doubt the Fishery Authority has been more efficient in dealing with fishery sector development than the previous arrangement, where various agencies were involved.

VI. PROJECT IMPACT

6.01 During appraisal it was assumed that the project would cause fish production to increase as a result of: (a) newly introduced project vessels; (b) existing vessels to catch more; and (c) no reduction in the existing number of vessels, while without the project the present fleet would reduce in size. The appraisal report estimated that the new vessels would catch 8,300 tons of fish, and the existing fleet would have an incremental production of 300 tons. Catch rates of the new boats were assumed to increase rapidly over those of the existing fleet as a result of training efforts. It was also

assumed that recording of catches would become more reliable at new fishing harbors; without ports an estimated 50% of the catch was not recorded. In actual fact, recorded catches of project vessels did not go up as envisaged. The total catch of project vessels was an estimated 4,100 tons in 1987, roughly 50% of the appraisal estimate.

Average Annual Catch Per Vessel/Ton

	<u>Appraisal Report</u> (year 2)	<u>Actual 1986</u>
11.25 boat	14.0 (8.7) /1	8
13.80 boat	22	12

/1 14.0 ton concerns northern ports where no shrimp and octopus are caught.

It is not certain whether the reported figure for 1986 includes a provision for unrecorded catches, but it appears clear appraisal catch rates were over-estimated. Catches of the existing fleet appear to have increased dramatically at the new ports (para 5.07). It is unclear whether the full difference between the appraisal projections for fish landings at certain project ports and actual landings (almost 5,800 ton for 1985) were the result of the availability of port facilities and better recording of catches only. However, it appears reasonable to assume that a portion of the recorded difference can be attributed to an increase in the catch of the existing fleet. Conservatively it has been assumed in the recalculated ERR (para 6.03) that the project induced increase in production of the existing fleet was 1,500 ton annually (25% of the difference between the appraisal estimate and actual landings of fish in 1985 for the entire project area). The reasons for the rapid increase of catches of the existing fleet could be several: (i) the availability of protected fish landing facilities, notably at Louata and Mahares resulting in more fishing days; (ii) the availability of ice at selected ports; and possibly improved services for engine and boat repair. But increasing demand for fish, and particularly rapid increases in fish prices will no doubt also have played a major role (para 6.02).

6.02 During appraisal it was assumed fish prices, in real terms would annually increase by about 6% per year from 1979 to 1985, by about 4.8% from 1986-1992, and 3.6% thereafter. In actual fact fish prices in real terms increased much more. Between 1979 and 1986 fish prices, in real terms, increased by a factor of 60% more than the 45% price increase estimated at appraisal. Shrimp prices increased 25% more. These figures take account of the prevailing inflation rate as measured by the average wholesale price index.

6.03 The price increases, and the positive influence of the project on fish production by the existing fleet had a substantial impact on the recalculated rate of return of the project, more than offsetting the influence of cost increases of the harbors and boats, delays in construction of harbors and boats, and the lower than expected fish production of individual boats. The recalculated ERR, based on all quantifiable benefits and costs, and using data from the Fishery Authority concerning final project costs, current catches of project vessels, and present fish prices is 30%, compared to 27% estimated at appraisal. Details of the new analysis are provided in Annex 1.

VII. BANK PERFORMANCE

7.01 Appraisal. The role of the Bank in appraising the project was mixed. Design of the port component was generally satisfactory. But in several other areas the performance of the appraisal could have been improved. Costs of the project appear to have been considerably under-estimated; the impact of this under-estimate in USDollar terms was balanced by the appreciation of the USDollar against the Dinar, but local costs substantially exceeded appraisal estimates, and forced the Government to increase its budgetary allocations for the project. In designing the project, the Bank should not have made newly designed, untested vessels the centerpiece of the credit program; instead adequate time should have been allowed for testing and demonstration of the new vessels, and the credit program should initially have started for the traditional vessels only. This might have reduced the rate of return of the project, but would have avoided the risk of either substantial delays in the credit program, or introduction of unsound vessels. The appraisal should also have paid more attention to the substantial supervision needs which any program for newly designed vessels requires during testing. Ideally some cofinancing should have been arranged to cover a vessel design and testing component, with funds for construction of a number of vessels, design changes and technical supervision being provided on a grant basis. Now virtually all technical supervision of the vessel component was paid out of the Bank's project supervision resources. Finally the Bank should have used a fishery extension specialist to design the extension component.

7.02 Supervision. During the early stages of the project, the Bank paid adequate attention to the project; however, after 1983 supervision frequency dropped markedly, and, with the exception of a procurement related mission in 1986 did not include any civil engineering expertise. The entire boat construction program took place virtually without Bank supervision. None of the problems which existed in the harbor component at the end of 1983 was given further Bank attention. Technical Bank supervision during 1984 or 1985 might have helped to reduce some of the construction delays experienced in the harbor component. In the credit component, due to the delays in the vessel design and construction program, ample time was available to address its major problems as outlined in 1980 in the PPAR of the First Project. Although efforts were made to improve the performance of the fishery credit scheme, these efforts were generally fruitless and when stronger measures were proposed in 1985, too late. The Bank should have taken a firmer stand by insisting in 1980 that the problems of the Fishery portfolio be addressed within a strict time frame. In general continuity of staff for supervision missions was maintained. Supervision missions were effective in assisting the boat design and testing program, and helpful in adjusting procurement arrangements for the vessel hulls.

VIII. LESSONS LEARNED

8.01 Various lessons can be learned from the implementation experience of the project:

- (i) If a project intends to use an existing credit system to finance vessels, it appears desirable to make all possible efforts to improve loan approval, distribution and recovery systems to acceptable levels prior to starting the new credit program;

- (ii) If new types of fishing vessels are to be introduced, adequate time, financing and technical assistance should be made available for a thorough testing program;
- (iii) No standard design should be accepted for a fishing vessel if it is intended for a non-homogeneous fishery; in general the choice of vessels and engines in a fishery project should be left completely with the fishermen;
- (iv) Fishing vessels of an untested design should under no circumstance be financed by a fishery credit program;
- (v) In a fishery credit program it is preferable to let fishermen select the engine of their choice. If, due to shortages of foreign exchange, it is unavoidable to procure engines in bulk, evaluation of bids should give adequate weight to fishermen preferences;
- (vi) The creation of a new central agency in charge of the fishery sector was a success because it was arranged prior to Board presentation, and because the local authorities were convinced of the need for institutional change.

Follow-up on Lessons Learnt

8.02 The medium-term agricultural adjustment program (1987-91), which the Government of Tunisia agreed to implement in connection with the first Agricultural Sector Adjustment Loan, contains an action plan of measures designed to achieve major reforms in the credit systems. In July 1987 the Bank approved the BNT4 Project in support of this adjustment program, with a view to promoting the development of a sound rural credit system. Under the BNT4 project, lending to fishermen is now highly selective, strictly limited (no new fleet financing), and targeted to private fishermen who have a demonstrated record of fishing performance and a credit recovery rate of at least 90%.

TUNISIA: SECOND FISHERIES PROJECT (CR. 1746-TUN)

Recalculated Economic Rate of Return

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993-2001	2002-2010
Project Benefits															
A. Fish catch (MTON) 1/															
By 11.25 boats						592	1,672	2,784	3,120	3,150	3,200	3,300	3,400	3,400	3,400
13.80 boats						196	863	943	1,053	1,075	1,100	1,150	1,200	1,200	1,200
Existing fleet				500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
Total				500	1,500	2,288	3,735	5,227	5,673	5,725	5,800	5,950	6,100	6,100	6,100
B. Average fish price D/kg 2/				1.90	2.11	2.33	2.43	2.54	2.65	2.77	2.90	3.03	3.16	3.50	4.00
C. Total Benefits (D,000)				950	3,150	5,319	9,076	13,276	15,033	15,858	16,820	18,028	19,276	21,350	24,400
Project Costs															
D. Investment Costs															
Studies						603									
Harbors 3/	2,000	5,000	6,000	6,000	2,500	2,500	2,921	730							
Boats 4/			100	300	400	2,000	4,474	4,000	980						
E. Total	2,000	5,000	6,783	6,300	2,900	5,500	7,395	4,730	980						
F. Inflation Adjusted 5/ Investment Costs	1,153	3,170	4,687	4,946	2,481	5,102	7,921	5,004	1,097						
G. Operating Costs															
Harbors 6/						184	388	484	730	432	432	432	432	600	600
Boats 7/						888	1,657	2,762	3,694	3,094	3,094	3,094	3,094	3,294	3,494
H. Total						769	2,045	3,246	3,824	3,526	3,526	3,526	3,526	3,894	4,094
I. Total Costs (F+H)	1,153	3,170	4,687	4,946	2,481	5,871	9,440	8,250	4,903	3,526	3,526	3,526	3,526	3,894	4,094
J. Net Benefits (C-I)	(1,153)	(3,170)	(4,687)	(3,996)	669	(552)	(364)	5,017	10,130	12,329	13,294	14,502	22,802	17,456	20,306
ERR															30%

- 1/ Based on catch of 8 ton per year for 11.25 m boat, and 12 ton for 13.80 m boat. Incremental production existing fleet is 1,500 ton/year.
 2/ Prices based on 1986 actual prices of white fish = D 2.00/kg and shrimp/lobster = D 8.50/kg. It is assumed 5% of catch is shrimp/lobster. Real prices are increased by 4.5% annually until 1992, and 3.6% thereafter, as in appraisal report.
 3/ Total investment costs allocated according to disbursement data.
 4/ Total investment costs allocated according to boat building schedule.
 5/ Total investment costs adjusted to 1986 prices.
 6/ Appraisal estimates times inflation factor, data for 1993-2010 include replacement of equipment.
 7/ Appraisal estimates times inflation factor, data for 1993-2010 include replacement costs for engines.

TUNISIA: SECOND FISHERIES PROJECT (LOAN 1746-TUN)

Disbursement Status

<u>Category</u>	<u>Description</u>	<u>September 30, 1988</u>	
		<u>Balance</u>	<u>Undisbursed</u>
	Loan/Credit Total US\$	0.00	23,815,944.94
Cancel		4,684,055.06	0.00
Note	2nd Fisheries 051480	0.00	0.00
Note-A	Disb. up to 123186 El-Rifai Tlx 043086	0.00	0.00
Note-Clo	OK to disb. until 063087	0.00	0.00
1	Civil Works 35% T	0.00	0,659,918.34
2	Supervision of Construction 100F/80L	0.00	669,973.81
3-A	Equip/Vehicles (No Boats) PT.A 100F/55L	0.00	2,057,883.72
3-B	Equip/Vehicles (No Boats) PT.C 100F/55L	0.00	803,296.09
4	Boats (See Shedule 1)	0.00	8,997,740.61
5-A	Cons. Svcs. & Fellowships PT.D.1 100F	0.00	130,033.34
5-B	Cons. Svcs. & Fellowships (C.2,D.2,3) 100F	0.00	148,437.82
6	Refunding of Advance	0.00	348,661.21

AF Last Disbursement: July 29, 1987

89E0643 April 19, 1989
French (Tunisia)
OEDD1 JCB:mec

Translation of incoming telex

From: Banque Nationale de Tunisie
To: IBRD, Washington
Telex #13539SM
April 18, 1989

Mr. Graham Donaldson
Chief, Agriculture, Infrastructure
and Human Resources Division
OED

Following your letter of March 1, 1989, we give below our comments on the PCR on the Tunisia Second Fisheries Project (1746 TUN).

(1) Most of the problems noted relate to the First Fisheries Project (IDA 270 TUN), while the real difficulties with the Second Project have not been analyzed sufficiently. The report minimizes the repercussions of the inadequacies in terms of project design and appraisal and basically stresses recovery problems. The Bank's role as regards repetition of the errors of the First Project, which are likely to produce the same results, in particular where recovery is concerned [*sic*].

(2) The problem of recovery mentioned in the report basically concerns the First Project, which took place under very particular conditions.

With respect to the Second Project's low [recovery] rate, this is due to the lack of coordination between the date fixed for the first installment and the entry into production of the vessels. This time lag, sometimes over two years, is not taken into consideration at the loan management level.

In view of the specific aspects of the fisheries sector, certain appropriate, though hard-to-apply, measures could improve the recovery rate.

(3) Choice of fishermen. Only dossiers containing full documentation of the applicants' qualifications and no-risk status have been selected by BNT and CGP.

(4) Choice of vessel. The imposition of vessel designs resulted, as with the First Project, in bitter failure. In the case of the Second Project, the outcome was that the Tunisians asked for modifications, which led to longer vessel construction periods and delivery delays, with the consequent increases in vessel costs.

In addition, the vessel builders were imposed on the fishermen in accordance with the procedures adopted by CGP.

The contracting conditions set out in the loan agreements led to the same disadvantages as under the First Project.

The successive cost increases have led to real difficulties in terms of payment of the supplementary self-financing amounts.

(5) The project cost given in the report is underestimated. Some of the equipment was financed by us out of our own resources.

Regards,

Atallahmokhtar and Alichaghal

Attention: Mr. Graham Donaldson, World Bank.

We acknowledge receipt of the PCR (Loan 1746-TUN), and wish to make the following corrections:

1. Production: 1985: 88,895 tons (pages v and 1)
1987: 99,184 tons (page 1)
2. Additional landings are 33 [percent] higher than the appraisal estimates (pages viii and 11).
3. Table 5.1:
Under "actual figures," the total for 1987 [1985] should be 9,606 instead of 9,906 tons.

For Salakta port, the actual figure in 1987 should be 568 instead of 968 tons, making the total 9,815 tons instead of 10,115 tons.

Regards,

Hassen Akrouf
Commissaire Général à la Pêche
CGP Tunis

