

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

BARBADOS

FISHERIES DEVELOPMENT PROJECT

(BA-0020)

LOAN PROPOSAL

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Basic Socioeconomic Data

1. General

Total population (thousands of inhabitants, 1980)	258.0
Rural population (per cent)	53.4
Land area (Km ²)	430.0
Population per Km ²	585.0
Ratio of population to arable land (per Km ²)	958.0
Population growth rate (Av. 1972-81)	0.7
Per capita GDP at 1981 prices (US\$/1981)	3,606
Low Income level per capita (IDB estimate, Dec. 1981, BD\$)	2,092
Life expectancy at birth	68.4
Mortality rate (1980)	8.3
Infant mortality rate (1980)	21.0
Physicians per 10,000 inhabitants (1978)	7.3
Number of hospital beds per 1000 inhabitants (1978)	8.5
Literacy rate	98.0
School enrollment rate (%) ^{a/}	
Primary (7-14 year age-group)	98.0
Secondary (12-15 year age-group)	87.0
Rate of exchange (per US\$)	2.0

Distribution of arable land (Census of Agr. 1971)

<u>Farm Size</u> ●	<u>Number of Holdings</u>	<u>Acreage</u>	
		<u>Number</u>	<u>Per Cent</u>
Under 5 acres	12,468	8,570	11.6
5 - 50	252	2,797	3.8
51 - 500	127	30,768	41.6
Over 500	46	31,860	43.1
<u>Total</u>	<u>12,893</u>	<u>73,995</u>	<u>100.0</u>

Per capita electricity consumption Kwh (1979)

Distribution of employment by sector (1978)

	<u>In thousands</u>	<u>%</u>
Agriculture and Fishing	8.7	9.5
Manufacturing	12.7	13.9
Construction, Mining and Quarrying	5.7	6.2
Trade	21.0	22.9
Electricity, Gas and Water	1.0	1.1
Transportation and Communication	6.2	6.8
Financial Institutions	4.6	5.0
Services (Government and Other)	31.7	34.6
<u>Unemployment (Jan.-Mar. 1980)</u>	<u>14.1</u>	<u>13.7</u>

^{a/} Student enrollment as percentage of the eligible age group.

1. Income Distribution

Income Group	Number of Households	Per cent	Cumulative Per cent
0-99	184	15.3	15.3
100-299	228	19.0	34.3
300-499	241	20.1	54.4
500-699	183	15.2	69.6
700-999	153	12.7	82.3
1,000-1,499	122	10.2	92.5
1,500 +	89	7.5	100.0

2. National Accounts

	Composition (per cent) ^{a/}				Real Annual Growth Rates (per cent) ^{b/}				
	1970	1974	1980	1981	1970-75	1976-78	1979	1980	1981
Expenditures of GDP (Market prices)									
GDP at market prices	100.0	100.0	100.0	100.0	4.6	2.6	3.0	3.3	-3.1
Fixed Investment	27.1	24.1	21.1	23.9	-1.1	7.7	2.1	6.6	13.0
Consumption	101.5	91.2	80.3	83.6	3.4	-7.4	6.4	-0.2	-8.3
Exports	56.3	51.6	68.5	64.0	-0.1	25.7	11.1	8.0	-1.6
Imports	84.9	66.9	71.8	72.5	-2.0	5.9	13.1	6.3	0.9
By Origin (factor cost)									
	100.0	100.0	100.0	100.0	4.3	3.7	3.2	4.7	2.2
Agriculture and Fishing	13.9	10.7	9.6	7.6	-2.1	3.0	7.4	3.5	-21.4
(Sugar)	(9.3)	(7.3)	(5.6)	(3.8)	(-3.6)	(1.0)	(12.8)	(10.7)	(-30.6)
Manufacturing and Mining	9.3	9.9	15.0	14.8	6.7	9.7	1.7	6.0	9.3
Construction	9.1	8.2	7.0	7.9	-2.9	1.6	13.8	4.9	4.5
Wholesale and Retail Trade	29.4	28.5	33.2	34.2	2.2	2.7	9.7	8.0	-3.2
Transport, Communication and Utilities	7.3	8.3	5.8	6.0	5.0	4.4	5.4	10.4	3.6
Government	14.7	15.2	14.6	13.7	5.1	0.8	2.5	-1.7	3.8
Other Services	16.2	19.2	14.8	15.8	11.3	3.8	2.0	1.6	0.1
(Tourism)	(9.2)	(10.0)	(10.6)	(10.1)	(-0.5)	(10.3)	(1.0)	(3.8)	(-9.1)

3. External Trade

	(Millions of SD Dollars)					Growth Rates at Current Prices				
	1970	1974	1979	1980	1981	1970-75	1976-78	1979	1980	1981
Exports of Goods (f.o.b.)										
	62.1	125.6	232.7	337.3	297.0	20.8	1.5	24.8	34.7	-11.0
Sugar, Molasses and Rum	37.7	67.6	67.6	124.8	100.8	22.2	-15.6	13.2	84.6	-19.2
Clothing	3.7	18.5	45.9	49.1	52.2	46.2	14.9	13.1	7.8	6.3
Electrical Components	6.4	8.8	45.1	63.3	77.3	9.1	58.6	19.0	48.4	22.1
Chemicals	2.1	4.9	15.2	21.7	24.2	27.2	18.7	63.4	42.8	11.5
Imports of Goods (c.i.f.)										
	218.0	368.9	779.5	931.8	1,057.0	14.4	11.7	40.7	19.4	13.5
Consumer Products	96.9	156.1	279.8	342.3	372.7	12.4	12.4	22.7	22.3	8.9
Intermediate Products	57.0	120.0	283.9	323.6	269.5	18.0	7.6	71.0	14.0	-16.7
(Fuel)	(5.6)	(31.8)	(92.3)	(108.0)	(143.7)	(39.1)	(-20.9)	(300.0)	(17.8)	(33.1)
Capital Goods and Equipment	57.9	80.7	206.9	267.6	312.0	13.1	16.3	45.6	29.3	16.6

a/ Current prices. b/ Constant 1974 prices.

A. Balance of Payments

	Billions of \$ ¹					Growth Rates at Current Prices		
	1970	1975	1976-78	1979	1980	1970-75	1976-78	1979
Current Account Deficit	-83.7	-98.4	-94.5	-68.9	-54.3	-3.5	-9.0	7.9
Exports (goods)	71.5	138.1	186.0	264.5	363.6	19.5	5.4	37.7
Imports (goods)	255.2	418.9	550.7	830.5	1,050.9	14.6	12.9	32.0
Services	69.2	168.2	239.9	453.2	590.0	19.8	27.7	46.5
Transfers	10.3	14.2	30.3	43.9	43.0	6.4	40.8	31.0
Capital Account	26.5	27.9	56.9	80.0	123.3	15.1	2.4	-83.6
Long-Term	24.5	21.5	35.8	47.4	67.3			
Public	0.6	-7.1	9.5	9.0	53.7			
Private	23.9	28.6	26.3	38.4	13.6			
Short-Term and Other	2.0	6.4	21.1	32.6	56.0			
Errors and Omissions	32.3	78.3	36.3	11.0	-28.9			
Change in Reserves	-24.9	-7.6	1.2	-22.1	-40.1			
(- = Increase)								

(Per Cent)

B. Public Finance

a) Summary	Per cent of GDP					Growth Rates at Current Prices		
	1970	1974	1976-78	1979	1980	1970-75	1976-78	1979
Current Revenue	25.3	21.5	25.6	26.4	26.6	17.9	15.6	17.1
Income Taxes							17.1	24.6
Current Expenditure	23.8	21.8	24.2	23.4	23.8	17.0	14.9	19.1
Current Account Balance	1.5	0.3	1.4	3.0	2.8			
Capital Expenditure	4.4	5.1	7.3	6.5	8.2	28.0	13.9	16.7
Overall Balance	-3.1	-5.5	-6.1	-3.5	-5.4			

Financing

Domestic	2.8	1.1	3.8
External	0.7	4.3	4.5

b) Central Government Expenditure

	Current Expenditure (Per cent)					Capital Expenditure (Per cent)				
	1970	1974	1976-78	1979	1980	1970	1974	1976-78	1979	1980
Commodity and Social Service	78.3	76.5	75.3	73.6	73.5	71.5	57.0	45.8	39.7	54.4
General Public Service	22.8	19.8	16.7	16.1	15.6	14.9	15.1	7.6	12.2	8.1
Education	23.2	23.6	23.6	24.7	23.5	22.4	7.7	8.7	12.5	12.4
Health	18.8	18.5	17.3	15.9	15.6	15.1	3.8	2.0	3.4	18.0
Knowledge/	0.2	1.0	1.9	2.1	2.2	2.4	25.6	23.4	10.0	10.4
Other ²	13.5	13.5	16.3	16.8	16.6	16.7	4.8	4.1	1.6	5.5
Economic services	16.4	14.9	17.0	15.4	16.8	16.7	43.0	54.2	60.2	45.6
Agriculture	7.5	7.4	3.5	7.9	3.0	2.6	8.6	24.8	10.0	9.3
Water	1.0	1.5	1.5	1.3	2.2	1.2	5.8	6.6	5.0	7.6
Transportation	9.6	8.4	10.8	10.2	12.0	11.5	22.9	16.5	35.5	22.1
Trade, Industry and Commerce ³	3.3	2.3	1.2	1.5	1.5	1.5	5.7	6.3	9.7	6.7
Debt Service	3.2	8.6	7.6	7.7	11.6	11.6	-	-	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ Includes other community amenities. ² Mainly sec¹ security and welfare, for current expenditures.
³ Miscellaneous outlays, for current expenditure.

[illegible]

9. IDB Loans^{a/}Millions of dollarsPer centSource

Ordinary Capital
Fund for Special Operations
Venezuela Trust Fund

28.6
27.8
4.0

47.4
46.0
6.6

Destination

Agriculture
Industry
Tourism
Transportation
Energy
Education, Science and Technology
Housing and Urban Welfare
Health and Sanitation

8.7
3.0
7.8
13.5
-
9.9
-
15.5

14.4
4.9
13.0
22.3
-
16.4
-
25.7

Exports

2.0

3.3

TOTAL

60.4

100.0

a/ Adjusted approved loans as of December 31, 1982.

LOAN PROPOSAL
(BA-0020)

I. BASIC INFORMATION

- 1.01 Name of the Project: Bridgetown Fishing Port Project
- 1.02 Date of Application and Priority: The loan request was dated May 18, 1983 and revised on March 26, 1984. The original request highlighted the priority assigned to the project.
- 1.03 Borrower and Executing Agency: The Borrower will be the Government of Barbados. The Executing Agency for the project will be the Ministry of Agriculture, Food and Consumer Affairs (MAFCA). The executing unit will be the Special Assignments Division (SAD) of MAFCA. The executing unit for the parallel technical cooperation will be the Fisheries Division of MAFCA.
- 1.04 Objectives and Description: The overall objective of the project is to contribute to a doubling of the production of locally caught fish and improve the standard of living of the fishing community. To accomplish this objective, the project will consist of (a) a fishing harbour at Cheapside in Bridgetown capable of mooring 150 fishing vessels which will be reached during the peak period of the fishing season; and (b) a fishing terminal in the harbour area at Cheapside with facilities for handling, processing, cold storage and marketing of fish including office space and equipment for ice and fuel supplies. The project will also include a parallel technical cooperation for strengthening the extension services of the Fisheries Division of MAFCA.
- 1.05 Total estimated cost and its financing: The total cost of the project is estimated at the equivalent of US\$12,300,000. Of this amount, the Bank would finance 65% of the total cost or the equivalent of US\$8,000,000. The total financing would consist of two loans: (i) US\$5,000,000 from the Ordinary Capital Resources, and (ii) US\$3,000,000 from the Fund for Special Operations from the Fifth Replenishment. The total cost of the parallel technical cooperation would be the equivalent of US\$580,000 of which the equivalent of US\$480,000 would be financed by the Bank.

II. FRAME OF REFERENCE

- 2.01 Real economic growth of Barbados is expected to resume in 1984 after two years of declining output. The reason for this recovery is directly related to the recovery in North American and European economies which should stimulate increased tourist arrivals and earnings. Another reason for the recovery is the continued growth in output of the

petroleum sector. By the end of 1984 the Barbados National Oil Company expects to be providing almost one-half the island's petroleum requirements, up from 40% at the end of 1983. The authorities in Barbados intend to maintain a policy of fiscal discipline in order to keep the rate of inflation at or below the level of 1983 (5.4%) and to further improve the situation of the external accounts.^{1/} Net international reserves rose by almost US\$8 million in 1983 and it is expected to increase again by about the same amount in 1984.

- 2.02 Over the medium to longer term planned investments in economic diversification should broaden the base for economic development and soften the economy's extreme vulnerability to external shocks. The external debt annual service burden will continue to grow due to both the already contracted loans and the new ones which will be required to finance the public investment program but the burden is unlikely to exceed a modest 10 per cent of export earnings.

III. FISHERIES SECTOR IN THE BARBADOS ECONOMY

A. Sector Contribution

- 3.01 The fisheries sector accounts for less than 1% of the Gross Domestic Product (GDP) of the country but provides employment to about 1,500 persons, about 10% of the labor force engaged in agriculture and fisheries. The industry also provides work for boat builders and repairmen and part-time employment for various groups as fish-cleaners and deboners.
- 3.02 The importance of the fisheries sector in the Barbadian economy is also in terms of its contribution to the national source of protein. Fish forms an important part of the local diet and makes up 20.7% of the total animal protein for the population as compared to 28% for poultry. Flying-fish, which is the main fish specie caught and consumed in Barbados provides 33% of the protein derived from all fish products and 6.9% of the total animal protein for the local population.
- 3.03 In the new Development Plan 1983/84-1987/88, 3% or US\$10 million of the public investment program (US\$362 million) is allocated for the fisheries sector. The specific Government actions stipulated in the new plan includes the proposed fishing complex in the Bridgetown area in addition to landing and marketing facilities at Speightstown and Tent Bay, as well as efforts directed to strengthening of fisheries support services. These services include the provision of credit for upgrading existing vessels as well as constructing new ones, improvement of fishing gear and technology, expansion of ice-making and storage capacity, training programs for fishermen, a promotional program to increase consumption of locally caught fish and legislation to ensure basic safety practices by fishermen.

^{1/} For a macro-economic analysis of the Barbados economy, see Annex II-1 to the Project Report

- 3.04 Private sector interest in the fishing industry has been rising in the last three years. Such interest has revealed itself by (a) increased investment in new ice boats; (b) establishment of new processing facilities; and (c) establishment of ancillary industries such as boat building and ice production.

B. Fish Resources and Current Exploitation

- 3.05 Maritime and fisheries activities in Barbados are governed by the "Marine Boundaries and Jurisdiction Act" of 1979. The exclusive Maritime Economic Zone (EEZ) of Barbados is defined according to the new law of the Sea Treaty and includes the usual extension of 200 nautical miles (NM) from the coastal baseline. Within this EEZ, there are two areas recognized for fishing purposes: (i) "Inshore" fishing area which extends up to 40 NM from the coast and covering some 17,000 Km² and (ii) "Offshore" fishing area extending an additional 85 NM past the inshore area (125 NM from the coast) and covering some 150,000 Km². According to FAO, the basic fertility is approximately 1.2 MT/Km² for the Inshore area and some 0.5 MT/Km² for the Offshore area. The maximum permissible catch that could be exploited without affecting the resources renewal is estimated by FAO to be 0.3 and 0.1 MT/Km²/year for each area respectively with a total of 20,100 MT/year (maximum suitable yield - MSY). The current fish landings are estimated at 5,000 tons per year and this can be expanded gradually to about 10,000 tons by 1994.
- 3.06 The pelagic fishery are the major species in the national catch consisting of flying fish (*Hirundichthys affinis*) which accounts for about 50-60% of the pelagic catch, the dolphin (*Coryphaena hippurus*) accounting for 25%, and other large pelagics including the kingfish, tuna, shark and billfish together accounting for about 15%.
- 3.07 MAFCA would be required to closely monitor annual fish landings and inform the Bank within the first 60 days of each year for five years after the date of the loan contract on the results of the monitoring, including any policies and regulations adopted, to maintain an ecological balance between exploitation and availability of fish resources in order to assure the renewal of the natural stock. ^{1/}

C. Fishing Methods and Fishing Gear

- 3.08 The fishing methods are basically artisanal. The gears used are (a) Gill Drift nets; (b) Hand Lines; and (c) Fishing Lines for Trolling. The Gill nets are used to catch flying fish. The Hand Lines vary in length between 20 and 100 m and of 3 mm in diameter. The longer lines are used mainly to catch shark and big-eye tuna while the shorter monofilament lines are used to catch dolphin, in both cases using flying fish as a bait. The bulk of the catch during trolling is kingfish, but tuna and dolphin are also caught in limited quantities.

^{1/} See Recommendation 8.

D. Shore Facilities

- 3.09 The two main centres for fish landings are Bridgetown and Oistins where the main fish markets are also located, namely, Cheapside and Bay Street in Bridgetown, and Oistins beach. Another large landing site is Speightstown at the Northern end of the west coast. Minor landings are also made on the beach at some 28 locations around the island in 7 of which the MAFCA has built small sheds for receiving and marketing fish. These sheds are located at (i) Half Moon; (ii) Read's Bay; (iii) Paynes Bay; (iv) Pile Bay; (v) Skeete's Bay; (vi) Conset Bay; and (vii) Tent Bay.
- 3.10 In contrast to the modern fishing complex at Oistins, Bridgetown continues to function under antiquated and unhealthy conditions which have evolved over the years without planning.
- 3.11 Landings at Oistins are made at the new fishing complex which started operations in March, 1983. This complex consists of a landing jetty, a building for receiving, inspecting, wholesaling, fish processing, retail vending stalls, fishermen's amenities, yard for boat repair, a fueling station, ice-making, and chill storage facilities. The complex has operated successfully. The only component of this complex not in operation is the boat repair yard due to inadequate boat haul-out equipment.

E. Fish Handling, Processing and Cold Storage

- 3.12 Although the fish processing companies have begun the practice of "deboning" fish in response to a growing demand, the bulk of the flying fish catch is still retailed whole. A portion of the dolphin, kingfish and billfish catch is gutted at sea and subsequently retailed whole. Shark and tuna are gutted onshore and subsequently retailed as steaks. Demersal species are generally sold in the round.

F. Local Distribution

- 3.13 The bulk of the catch landed in Barbados is marketed in the traditional manner as "fresh" or wet fish most of which is sold immediately to consumers in the vicinity of the vessel landing sites. Fish is also distributed beyond the landing sites, mostly by vendors but also by a few large scale buyers who process, freeze and pack fish. In addition a substantial and indeterminate part of the catch bypasses the official recording points and is sold directly to hotels, restaurants and supermarkets. Most of the fish landed finds a ready market in the densely populated coastal areas around Bridgetown and Oistins.
- 3.14 While distribution along the coast is adequate there is virtually no distribution to the inland areas where an unsatisfied market exists. The residents of these areas currently travel once a week to the coastal

towns to do their shopping at which time they buy fish. The increased supply of better quality fish will permit vendors to supply these areas regularly and in this way to stimulate consumption of fish on a daily basis.

G. Fish Prices

- 3.15 The weighted average of retail prices for the years 1981-1983 was US\$1.18/Kg for flying fish and US\$3.18 for dolphin. At this price level flying fish is competitive with imports during the fishing season. As fish processing capacity increases partly as a result of the stimulus to be provided by the proposed project, the prices during the off-season are also expected to fall. The lower prices, strengthened by a strong consumer preference, will make flying fish competitive with imports throughout the year. On the other hand, the price of large fish such as dolphin, is not competitive with imports largely because of the economies of scale enjoyed by the exporters of these species. However, as in the case of flying fish, there is a downward trend in the price of these species and with the facilities to be provided with the proposed project their price would become more competitive with international prices.

H. Sector Development-Supply and Demand Considerations

1. Supply Consideration

- 3.16 Fish landings in Barbados are recorded at the four fish markets and the seven fish sheds around the island. The official records are computed by the recorded landings multiplied by a raising factor of 3. This factor has been traditionally applied in recognition of the fact that the recorded statistics are very unreliable because many vessels circumvent the market and significant landings occur in the late evenings when the markets are not manned. For purposes of this analysis, the landings for 1983 were reviewed taking into account the average catch per boat type and their respective share of the total fleet. This approach to the official records was also followed by FAO in their feasibility study for the proposed project. Based on the results obtained from these reviews, the Bank considers that the official landing records for the period 1970-1982 are reasonable.
- 3.17 A significant number of ice boats began operations in 1983 and since then the landings exceeded the capacity of fish processors. The result was an excess supply on the market which lowered the price of fresh fish to the consumer but reduced the income of boatowners and fishermen. The Barbados Development Bank (BDB) is attempting to address this imbalance with its policy of lending mainly for additional investment in the processing and distribution aspects of the industry. The application of this policy together with the completed Oistins fishing terminal and the pending investments at Speightstown and Tent Bay are expected to result in a 4% annual growth rate or, in absolute terms, an increase of 2,500

tons in national landings by 1994 to bring the national landings to a total of 7,500 tons. The proposed project in Bridgetown is expected to increase national landings by an additional 2,500 tons by 1994, thereby contributing to total landings of 10,000 tons by 1994 or an overall increase of 5,000 tons over present landings.

2. Demand Considerations

- 3.18 The mean per-capita consumption of fish in Barbados is 30.5 Kg/yr., with a range of variation that could go as low as 26.5 Kg/yr and as high as 34.5 Kg/yr. It is considered reasonable to assume that as the industry develops partly as a result of the stimulus of the proposed project, fish prices would be low enough to increase per capita consumption to as high as 40 Kg/year by 1994. Given: (a) this level of projected per capita consumption; (b) Government objective to substitute imports by locally caught fish for domestic consumption; (c) projected tourist demand and (d) projected exports, it is concluded that the projected 10,000 tons of landings by 1994 will be absorbed.

I. Financial Assistance to the Fisheries Sector

- 3.19 In 1980 the Bank approved two global loans (loan 384/OC-BA and loan 39/VF-BA) to the Barbados Development Bank (BDB) for Stage III of its tourism and industrial development program. On September 26, 1983, the Bank approved an expansion to the use of its resources to include the Fisheries Sector. Loan 384/OC-BA for US\$5 million contributes to the financing of capital investments in the program, while loan 39/VF-BA for US\$2 million contributes to the financing of working capital in the program. As of April 30, 1984, the balance available for disbursement from loan 384/OC-BA was US\$1.3 million and from loan 39/VF-BA US\$1 million. The commitment and disbursement periods of these two loans were each extended for one year to January 19, 1985 and 1986 respectively. With the inclusion of fisheries in the program, these loans are expected to be fully disbursed by the end of the disbursement period.
- 3.20 Additional working capital for fishermen is available only from their own resources derived from quick sale of their fish. The commercial banks in Barbados do not lend directly to fishermen.
- 3.21 During the period December 1982 to November 1983, the BDB made 63 loans to the sector for a total of the equivalent of US\$0.95 million. Of that amount, 11 loans were for new ice boats, 8 loans were for new day boats, 36 loans were for repairs, purchase of existing boats, new engines, safety gear and equipment, and 8 loans were for transfer of ownership. BDB lending for the period represented an increase of 12.5% above the amount loaned in the previous 12 month period.

IV. THE PROJECT - OBJECTIVES AND DESCRIPTION

A. Objectives

- 4.01 The project would contribute to achieving the following objectives: (a) increasing fish production and improving the standard of living of the population engaged directly and indirectly in the fishing industry; (b) improving the physical and hygienic conditions at Cheapside in Bridgetown for landing, handling, and marketing of domestic catch of fish; (c) to reduce fish imports and save foreign exchange; (d) to adapt the port infrastructure to efficiently meet the needs of fishermen and fishing fleet; and (e) to facilitate the implementation of the Government's plan to improve the entire waterfront area.

B. Project Goals

- 4.02 The goals of the project are:

- (a) to contribute to the increase in present fish landings at Cheapside in Bridgetown by 3,100 tons over the next few years (1994), that is, from 2,000 tons in 1984 to 5,100 tons by 1994; and
- (b) provide adequate shelter to the fishing fleet in Bridgetown.

C. Description of the Project

- 4.03 To accomplish the objectives specified above, the project will consist of the following components:

1. Physical Investments 1/

- (a) A fishing harbour at Cheapside in Bridgetown protected by a breakwater and capable of mooring 150 fishing vessels which will be reached during the peak period of the fishing season. This harbour will include fish landing wharves, boat mooring piers, a boat servicing dock and boat repair facilities.
- (b) A fishing Terminal in the harbour area at Cheapside in Bridgetown with facilities for handling, processing, cold storage and marketing of fish including adequate office space and equipment for ice and fuel supplies.

- 4.04 The fishing harbour and terminal would be constructed on land owned by the Government of Barbados.

1/ See maps and drawings in Annex III-2, Project Report.

2. Technical Cooperation Parallel to the Loan ^{1/}

- 4.05 The project will also include a parallel non-reimbursable technical cooperation for institutional strengthening of the Fisheries Division of the Executing Agency (MAFCA). The Technical Cooperation would consist of 80 man-months of consultancy services to be provided by three individual consultants in the following areas: (i) fishing gear technology; (ii) fish handling, processing, freezing and storage; and (iii) local marketing and distribution mechanism and a study of potential export markets including a strategy for gaining access to such markets. In addition, overseas training will be provided for three professional staff members of the Fisheries Division of MAFCA. The total cost of this operation is estimated at the equivalent of US\$564,000 of which the Bank will contribute the equivalent of US\$480,000 (85%).

^{1/} See Plan of Operations attached to this Proposal.

V. COST AND FINANCING

- 5.01 The total cost of the proposed project is estimated to be the equivalent of US\$12,300,000 in accordance with the investment categories in the table below:

TABLE I

Total Project Cost and Financing (In equivalent US\$ thousands)						
CATEGORY	I D B		Sub- Total	Barbados Total	Total	%
	OC	FOE				
1. <u>Engineering and Administration</u>	390	315	705	495	1,200	9.8
1.1 Administration	0	0	0	154	154	1.2
1.2 Engin. and Supervision	390	315	705	341	1,046	8.6
2. <u>Direct Costs</u>	3,000	1,865	4,865	2,735	7,600	61.8
2.1 Site Preparation including Utility Service Modifications	100	0	0	40	140	1.1
2.2 Harbour and Breakwaters	1,755	1,130	2,885	1,623	4,508	36.6
2.3 Terminal Facilities	530	340	870	470	1,360	11.2
2.4 Terminal Services	85	55	140	83	223	1.8
2.5 Machinery and Equipment	530	340	870	499	1,369	11.1
3. <u>Concurrent Costs</u>	0	83	83	0	83	0.7
3.1 Technical Cooperation ATC/SF-2235-BA ^{1/}	0	83	83	0	83	0.7
4. <u>Financial Costs</u>	590	77	667	116	783	6.3
4.1 Interest	540	47	587	0	587	4.8
4.2 Credit Commission	0	0	0	116	116	0.9
4.3 IDB Inspection	50	30	80	0	80	0.6
5. <u>Unallocated Costs</u>	1,020	660	1,680	954	2,634	21.4
5.1 Contingency	445	290	735	415	1,150	9.3
5.2 Escalation	575	370	945	539	1,484	12.1
Total	5,000	3,000	8,000	4,300	12,300	100.0
Percentage	40.6	24.4	65.0	35.0	100.0	

^{1/} Amount represents actual expenses incurred and charged to the contingent recovery credit.

5.02 IDB resources would be used to finance the equivalent of up to US\$8,000,000 or 65% of the total project cost, which conforms with the Bank's parameters for agricultural and fishery projects in a Group C member country as set out in document GN-1335 dated December 17, 1979. This contribution of the Bank will consist of the equivalent of up to US\$5,000,000 from the Ordinary Capital Fund and the equivalent of up to US\$3,000,000 from the Fund for Special Operations. This latter amount will be made from the Fifth Replenishment to the Fund for Special Operations.

5.03 The conditions proposed for the Bank loans are as follows:

- (a) Source of Funds: Ordinary Capital and Fund for Special Operations
- (b) Amount of Loan : Up to the equivalent of US\$8,000,000 consisting of (i) US\$5,000,000 from Ordinary Capital; and (ii) US\$3,000,000 from the Fund for Special Operations
- (c) Disbursement Period : 4 years from the date of signature of the loan contracts
- (d) Grace period : Ordinary Capital - 4 years
Fund for Special Operations - 8 years
- (e) Amortization : Ordinary Capital - 20 years
Fund for Special Operations - 35 years
- (f) Interest rate : Ordinary Capital - Variable
Fund for Special Operations - 2%
- (g) IDB Inspection and Supervision: 1% of the loan amount
- (h) Credit Commission: Ordinary Capital - 1-1/4 percent per annum on the undisbursed balance
Fund for Special Operations - 1/2 of 1% per annum on the undisbursed balance

5.04 The counterpart contribution of the Borrower will be for the equivalent of up to US\$4,300,000 or 35% of total project cost, and will be made available by the Government from its general resources through annual budget allocations.

VI. PROJECT EXECUTION

A. Executing Agency

- 6.01 The Executing Agency for the proposed project is the Ministry of Agriculture, Food and Consumer Affairs (MAFCA) through its Special Assignments Division. However, in the execution of the Technical Cooperation, MAFCA will function through its Fisheries Division.

1. Executing Unit

- 6.02 The Special Assignments Division (SAD) is the Executing Unit directly responsible for the implementation of all activities relating to the construction of the fishing harbour and terminal and will represent MAFCA in all acts relating to these activities. Similarly, the Fisheries Division will represent MAFCA in all acts relating to the execution of the Technical Cooperation.
- 6.03 MAFCA will be required, to assign to SAD within 12 months of the signature of the loan contracts a qualified civil/mechanical engineer, an additional accountant and other support personnel. ^{1/} The engineer will be assigned to the proposed project and will be in constant liaison with the consulting firm retained for project supervision and completion of the working drawings for the project. The accountant will supervise all financial and accounting records for the proposed project including the preparation of financial statements for the Bank and the Executing Agency (MAFCA).
- 6.04 The need for the engineering expertise in the Special Assignment Division is justified because the present staff of the Division comprises administrative, financial and secretarial personnel and the nature of the project is such that its execution will call for technical coordination with the engineering consultants. The additional accountant is needed because of the volume of accounting work associated with the number of externally financed projects under execution by the Division and the need to keep separate accounting for the proposed project.

2. Engineering and Technical Supervision

- 6.05 The Bank has received a request dated April 19, 1984 from the Government to continue the services of the consulting firm of Stevenson Hlutchan (Engineering Consultants) to carry out the working drawings and the engineering supervision of the project. This firm has been working with the proposed project since 1981. In 1983, this firm prepared for the Government of Barbados a modification to the design of the proposed project prepared by FAO, including an analysis of the economic feasibility of the modified design. This modification was reviewed by the Government and the Bank. The project submitted to the Bank for

^{1/} See Recommendation 3

analysis was based on the design modifications of Stevenson Hluchan (Engineering Consultants). Further, this firm has also satisfactorily supervised the construction of other Bank financed fishery projects in another country. It is recommended that the request of the Government of Barbados (Borrower) be accepted to continue the services of the firm of Stevenson Hluchan (Engineering Consultants) for the preparation of the working drawings and supervision of the project.

- 6.06 The draft Terms of Reference for the retention of Stevenson-Hluchan (Engineering Consultants) is attached as Annex IV-2 of the Project Report.
- 6.07 The Executing Agency will be required to present to the Bank as a condition prior to first disbursement of the loan evidence that it has contracted a consulting firm to carry out the engineering and supervision works during project execution. ^{1/}

B. Status of Project Preparation

- 6.08 The engineering studies and cost estimates for the proposed project were completed in 1983 by consultants retained by the Government of Barbados and by specialists provided by the Food and Agriculture Organization (FAO). After the preliminary plans were accepted by the Government, the consultants prepared a Design Definition Document which was subsequently reviewed and accepted by the Government and the Bank. This document showed in detail the design elements, costings and construction procedures. With this information, the Consultants prepared a project execution program and construction quantities. The working drawings for execution of the project are still required and it is proposed to utilize the consulting firm recommended to supervise the project to prepare these drawings. Since 5 months will be required to complete preparation of the project site, the preparation of the working drawings will not delay project execution.

C. Bidding and Contracting

- 6.09 All construction work under the project will be carried out by private construction firm or firms whose services will be obtained through international competitive bidding following established procedures agreed upon with the Bank which are presented as an annex to the Project Report.
- 6.10 To facilitate the participation of firms of different economic capacities and to expedite the beginning of project activities, the work will be put out for tender in the following proposals, namely: (a) Site Preparation, including the utility service modifications; (b) Construction of Breakwater; and (c) Construction of Other Facilities

1/ See Resolution 8.C

(terminal). The Government of Barbados will have the option of two contracts for proposals (b) and (c) or combining them into one contract if feasible. The contract under (a) above would be financed entirely with local counterpart resources and tendered among local contractors.

D. Construction Schedules

- 6.11 The breakwater in the harbour will be constructed in 18 months utilizing materials from rock quarries generally located to the North and West of the project site. The terminal building including the landing wharf will be constructed in 15 months on spread footings or where required, on piles to prevent settlement after construction.
- 6.12 The overall construction of the infrastructure, (site preparation, breakwater construction and fish terminal and other associated on-shore facilities) will require a total construction period of 2-1/2 years.

E. Technical Cooperation

- 6.13 The consulting services would be selected and contracted within 180 days from the signature of the parallel technical cooperation agreement in accordance with the attached Plan of Operations.
- 6.14 MAFCA would assign two additional administrative/technical assistants to work in the Fisheries Division in charge of implementing this technical cooperation 1/.

F. Environmental Impact

- 6.15 The constant offshore winds in the area will minimize the impact of any dust or obnoxious odours which may result from the construction operations. In addition the method of fish waste disposal will be effectively controlled to ensure that hygienic conditions prevail. Moreover, the Careenage will be free of environmental contamination as a result of the new method of fish waste disposal and the elimination of effluents from the fishing boats.

G. Investment Schedule

- 6.16 The investment schedule by source of funds is shown in the following table:

1/ See Recommendation 3.

TABLE II

INVESTMENT SCHEDULE BY SOURCE OF FUNDS

	YEAR					
	(1)	(2)	(3)	(4)	TOTAL	%
OC	150	850	2,740	1,260	5,000	40.6
FOE	115	535	1,640	710	3,000	24.4
LOCAL	55	795	2,355	1,095	4,300	35.0
TOTAL	320	2,180	6,735	3,065	12,300	100.0

H. Maintenance and Operation

- 6.17 The overall responsibility for maintenance of the project facilities (civil works, machinery and equipment) financed with resources of the loans will be with the MAFCA through its market division. Routine maintenance will be carried out by the machinery and equipment operators on the permanent staff of the Bridgetown fishing port facility. However, MAFCA will contract-out specific maintenance works to entities in the public or private sector if necessary.
- 6.18 MAFCA will submit an annual maintenance plan^{1/} to the Bank for approval within the first 90 days of each calendar year beginning with the calendar year following that in which the infrastructure facilities are completed and continuing for 10 years thereafter. Each plan will include as a minimum (a) the personnel to be provided; (b) the budgetary resources made available for its implementation; (c) the proposals, if any, for contracting out; and (d) description of the maintenance work proposed for the current year. Each Plan will also include a brief report on the previous year's operation and maintenance and any measures proposed to be adopted to correct any deficiency which may have been found during operation of the facilities. The Bank shall have the right to periodically inspect the project facilities and, if it is determined by such inspection, or by the annual reports, that the maintenance effected is below the agreed standards, the Borrower shall take the necessary corrective action.
- 6.19 The current regulations for the operation of the Oistins fishing terminal were reviewed and found to be adequate for the operation of the proposed project. These regulations will be extended and applied to the project when it is in operation.

^{1/} See Recommendation 2.

- 6.20 In addition to the physical maintenance of the facilities, the Markets Division of MAFCA will be responsible for the overall administration of the project facilities during operations. The main responsibility will be (a) hiring of all personnel, (31 permanent employees projected based on 2 shifts during the fishing season and one shift during the off-season), (b) maintenance of separate accounting and financial records, (c) collecting revenues, (d) inspection, weighing and recording all fish landed at the Complex.

I. Tariffs

- 6.21 According to the existing tariff policy^{1/} and market selling prices in Barbados, the following will be the tariffs and prices when the project facilities come into operation: (i) fish toll US\$20 per ton unloaded; (ii) ice-price US\$75 per ton^{2/}; (iii) freezing fee US\$150 per ton; (iv) cold storage fee US\$87.50 per ton per month; (v) fish sellers rentals US\$0.37 per vendor per day; and (vi) space and fuel pump facilities US\$250 per month. There is no specific charge for mooring but a charge for this purpose is included in the fish toll. These tariffs will be reviewed before the new installations come into operation.^{3/}

J. Advance of Funds

- 6.22 In order to facilitate project execution, an Advance of Funds may, at the request of the Borrower, be established up to the standard amount of 10% of the loan resources. The Special Assignments Division as the executing unit shall use such advance funds to make payments chargeable to the loan resources in a period of 120 days and shall justify such payments against the advance within 180 days from the date of disbursement.

K. Auditing

- 6.23 To ensure proper administrative and accounting control on the use of project funds, the Borrower will be required to submit to the Bank, during the project execution period, financial statements duly certified by a firm of independent public accountants acceptable to the Bank.^{4/}

L. Ex-Post Evaluation

- 6.24 The Executing Agency will be required to submit to the Bank one year after the date of signature of the loan contracts the results and analysis of the initial baseline data in accordance with the Guidelines attached as Appendix IV of this Proposal.

^{1/} GOB policy for market tariffs is to charge fees at a level that will cover all operational and maintenance costs in all markets.

^{2/} Currently, ice is sold at US\$90 per ton.

^{3/} See Recommendation 6.

^{4/} See Recommendation 9.

- 6.25 The Executing Agency will also be required to submit 3-1/2 years after the date of last disbursement of the loan resources an ex-post evaluation report to measure the impact of the project in attaining the stated project objectives and goals. This report shall also be prepared following the guidelines as specified in the Project Report and in accordance with the Bank's ex-post evaluation methodology. ^{1/}

M. Bank Inspection and Supervision

- 6.26 The inspection and supervision of project execution by the Bank would be carried out by its Field Office in Barbados.

VII. JUSTIFICATION OF THE PROJECT

A. Technical Feasibility

- 7.01 All available information indicates that fisheries resources around Barbados are not fully exploited and that there is an opportunity to expand the present catch level. Preliminary estimated bases of projected fish yields per surface area of the Exclusive Economic Zone (EEZ) of Barbados give a maximum value of 20,000 tons per year. The projected catch of 10,000 tons by 1994 is considered conservative for an area the size of the Exclusive Economic Zone of Barbados in which the projected yield will be 0.06 tons/km²/yr., which is relatively low.
- 7.02 Sufficient studies and information are available to define and adequately dimension the harbour and the fishing terminal. Unit costs and quantity volumes have also been verified to determine the total cost of the project. The designs of the project indicate that no major construction problems are foreseen. The type and method of construction of the port and on shore terminal facilities are relatively simple and could be executed utilizing international or local contractors.
- 7.03 The conceptual design of the proposed Fishing Complex in Cheapside is technically justified in all its components and satisfies the needs of fishermen, vendors, processors and the general public. The design of the proposed project at Cheapside was discussed with the beneficiaries and a favourable reaction was received. It also satisfies the long term plans of government to clear the Careenage of all fishing vessels in order that the area can be developed for tourism and business purposes for which there is a prefeasibility study already under discussion.

B. Institutional Feasibility

- 7.04 The Executing Agency, the Ministry of Agriculture, Food and Consumer Affairs (MAFCA), is considered a suitable agency for project execution. It will carry out its responsibility through its Special Assignments Division. This Division has the experience of implementing several

^{1/} See Recommendations 5.

projects with external financing. It is considered that the capability of this Division will be significantly enhanced by the inclusion of a qualified civil mechanical engineer and an additional accountant.

- 7.05 The Markets Division of MAFCA will be the Division in charge of overall maintenance and administration of the infrastructure facilities after completion. This Division is well experienced in the administration of public retail markets, especially fish markets. In general, the Division is limited in the exercise of its functions by a shortage of senior staff. However, the proposed project will not be directly affected because it will be managed by its own personnel. In the area of maintenance, the executing agency, through this Division, will contract-out specific maintenance as necessary to entities in either the public or private sector.
- 7.06 The Fisheries Division of MAFCA will coordinate the execution of the parallel non-reimbursable technical cooperation which is designed to strengthen the capability of this Division to perform its developmental and advisory functions in the fishing sector. The Executing Agency is required to employ two additional administrative/technical assistants for the Fisheries Division to perform the routine administrative functions currently performed by the fisheries officer and other senior staff.

C. Financial Feasibility

- 7.07 The tariff rates to be applied to the project would be sufficient to meet its operating and maintenance costs, including depreciation. Appropriate tariff rates have been legally implemented at the Oistins facilities and these rates will be applicable to the proposed Bridgetown facilities.
- 7.08 The local counterpart funds required on an annual average, for the project would represent approximately 3% of the Government's local counterpart to their public investment program.

D. Economic Feasibility

- 7.09 The aggregate economic rate of return of this project was determined using the following main assumptions: (i) flows of benefits and costs projected over a 50 year period beyond 1987, the year in which the complex is projected to start operating; (ii) incremental value of landings and wholesale prices adjusted by the international border price; (iii) retail prices of domestically produced fish taking into account the retail prices of those imported fish products that consumers would be willing to substitute; (iv) benefits associated with support services and amenities with values based on the rent that operators will be willing to pay; and (v) opportunity cost of unskilled labor being 75% of the minimum wage.

7.10 The economic rate of return of the project for all the quantifiable benefits and costs associated with the project is estimated at 12.1%.

7.11 This result should be interpreted with the following considerations in mind:

- (a) Indirect benefits, particularly of a social and environmental nature are important but nevertheless unquantifiable. Of particular relevance are: (i) the health-related benefits due to handling of fish under proper sanitary conditions; and (ii) social benefits accruing to fishermen and derived from the provision of toilets, bathrooms, lockers, grocery store and recreational facilities.
- (b) Any future development of the Careenage would generate costs as well as benefits and there is no firm basis for assessing the viability of any such future development. Therefore, no benefits or costs can be assigned to the space freed by moving the fishing fleet to moor in the new complex.
- (c) Relatively high investment costs in small infrastructure projects of this kind in the Eastern Caribbean due to the scale of projects and the higher costs of mobilization of engineering staff and transport costs for materials and equipment; and
- (d) Considerations of a sectoral and macro-economic nature applying to the proposed project. Government and private actions are mutually reinforcing in the sector and to this extent, the project has an essential catalytic character and importance that transcends individual project analysis.

Sensitivity Analysis

(a) General

7.12 The project economic rate of return of 12.1% is more sensitive to changes in incremental benefits than to changes in operating and maintenance costs or in investment costs:

<u>Gross Benefits</u>	<u>Sensitivity to Changes in</u>		<u>IRR</u>	<u>IRR-12.1%</u>
	<u>O & M Costs</u>	<u>Inv. Costs</u>		
+ 10%			14.5%	+ 2.4
- 10%			9.6	- 2.5
	- 15		13.9	+ 1.8
	+ 15		10.2	- 1.9
		- 15	14.2	+ 2.1
		- 10	13.4	+ 1.3
		+ 10	11.1	- 1.0
		+ 15	10.6	- 1.5

(b) Selective Sensitivity

7.13 To illustrate the sensitivity of the conclusions to specific assumptions, a selective analysis of various changes in benefits was undertaken as follows:

- (i) Incremental Catch. The net increase in landings at Bridgetown is estimated to be 3.0% (7.0% with the project and 4% without). If this is increased 50%, that is, to 4.5%, the IRR would approximate 13.5%.
- (ii) Boat Efficiency. The analysis assumes that the improvements in fishing technology would increase productivity 10% by the fifth year of the project. If the net value of the landings resulting from the increase in boat efficiency is reduced by half the internal rate of return would fall to 10.5%.
- (iii) Price Level. The efficiency price for the fish catch is based upon the international price of round fish equivalents, adjusted to take into consideration the characteristics of the local catch. A considerable variation in this correction factor between 0.69 and 0.85 varies the IRR from 10.6 to 13.5%.

7.14 The above analysis indicates that the economic IRR is not very sensitive to assumptions on incremental catch and boat efficiency. It is more sensitive to the price level utilized.

(c) Phasing of Investments

7.15 Since the project is highly interdependent with developments in the private sector leading to expansion of fleet, processing facilities and fish landings; careful consideration has been given to project design, scale and the possibilities of phasing the construction of selected project components. This analysis indicated that investment in the portion of the breakwater and other facilities required for mooring is separable and could be deferred. If the investment required for the mooring breakwater in the complex were deferred for five years or more,

the rate of return of the whole project would rise marginally. That is, the rate of return is not very sensitive to the phasing of investment. Besides, there are practical engineering problems in expanding the breakwater/mooring facility at a later date, and some operational inconveniences to fishing boat operators. Furthermore, it should be pointed out that the Government has requested the financing of the fishing complex, including the mooring, because of possible alternative uses of the Careenage in the future.

(d) Conclusion

- 7.16 The proposed project has an economic internal rate of return of 12.1%. This is a project which is economically justified also by considerations of a sectoral and macro-economic nature which clearly indicate that the project has an essential role as a catalyst for private investment initiatives in the further development of the fishing sector in Barbados. There are also benefits of a social and environmental nature which, while non-quantifiable, are important to recognize.

Distributive Analysis

- 7.17 The public and private sectors are considered in this analysis. The public sector consists of the Ministry of Finance and Planning and the Ministry of Agriculture, Food and Consumer Affairs. The private sector consists of the following beneficiaries: (a) boat owners; (b) fishermen crew; (c) unskilled labor employed during construction; (d) processor and market intermediaries; and (e) consumers. To allocate benefits to these 5 groups in the private sector, the Bank's definition of low-income for Barbados (US\$4,743 per family established in July 1982) is used as a reference.
- 7.18 Boat ownership is almost evenly divided among three groups: (a) private investors owning one-third; (b) private investors in partnership with fishermen one-third; and (c) fishermen one-third. With regard to fishermen, about 58% of households whose income is derived directly from fishing activities are below the low-income level. About 50-60 vendors will use the new project marketing facilities, and it is estimated that these have an annual income of about US\$7,000-10,000. About 55% of the consumers are estimated to belong to the low-income group and all processors and market intermediaries (importers, wholesalers) have annual incomes higher than the low-income level.
- 7.19 The net effect of the project on the fish catch is 2,500 tons distributed to net import substitution (1,300 tons) and net consumption (1,200 tons) allocated in terms of producer and consumer surplus. Using this distribution of the incremental catch, the net economic benefits going to low-income groups in the private sector is 37%.

Use of FSO Resources

- 7.20 FSO resources from the Fifth Replenishment is recommended to partially finance the proposed project. This is based on the fact that Barbados is a Group C country and the overall level of benefits of the project accruing to low income groups.

PROPOSED RESOLUTION 1/

BARBADOS. LOAN /OC-BA TO BARBADOS
(Bridgetown Fishing
Port Facility)

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with Barbados, for the purpose of granting it a loan to cooperate in the financing of a fishing port facility in Bridgetown. This financing shall be subject substantially to the following conditions:

1. Amount and Currencies: Up to US\$5,000,000, or the equivalent in other currencies (except that of Barbados) which are part of the ordinary capital resources of the Bank, to pay for goods and services acquired through international competition in the member countries of the Bank and for such other purposes as may be specified in the loan contract. Payments of amortization and interest shall be made in the currency or currencies specified by the Bank, in a quantity equivalent to the corresponding amount owed, calculated in units of account in terms of dollars of the United States of America, in accordance with provisions to be included in the loan contract.
2. Source of Funds: The ordinary capital resources of the Bank.
3. Guarantee: The general responsibility of the Borrower.
4. Credit Fee: 1-1/4% per annum on the undisbursed portion of the financing, commencing to accrue 60 days after the date of the contract and payable in dollars of the United States of America on the same dates as the interest.
5. Amortization: The Borrower shall amortize the loan in a period of 20 years from the date of the contract, by means of semiannual, consecutive and, insofar as possible, equal installments. The first installment shall be paid six months after the date scheduled for the last disbursement of the financing. The Bank may credit the

1/ The provisions contained in this Appendix I and in the following Appendices II, III, IV and V will only be final when the Board of Executive Directors has approved the proposed loan.

amortization installments proportionally to the outstanding balance of each of the portions of the loan which accrue different rates of interest.

6. Interest: The Borrower shall pay interest semianually on the outstanding balances of the loan. The first payment shall be made six months after the date of the loan contract. During the disbursement period, the Bank: (a) shall determine the rate of interest (which shall include the 1% special commission of the Bank) to be applied as of the first day of each January and for the life of the loan to any amount disbursed during the ensuing year; and (b) may modify the interest rate, in accordance with the policy of the Bank, to be applied to disbursements of the loan made during the second half of the year. At the request of the Borrower, resources of the financing may be used to pay interest during the period of disbursement thereof.
7. Disbursement: The term for disbursement of the financing shall expire 4 years after the effective date of the contract.
8. Special Conditions:
 - (a) The resources of the loan shall be utilized in their entirety by the Borrower through the Ministry of Agriculture, Food and Consumer Affairs (MAFCA) and its Special Assignments Division (SAD). If modifications in the legal provisions or the basic regulations concerning the Borrower, MAFCA and/or SAD are approved which, in the opinion of the Bank, may substantially affect the project, the Bank shall have the right to require the Borrower and/or the Executing Agency to provide explanatory and detailed information in order to determine whether such modification or modifications may have an adverse impact on the execution of the project. Only after hearing the Borrower and/or the Executing Agency and assessing their information and clarifications, may the Bank take such measures as it deems appropriate in accordance with provisions to be set forth in the loan contract.
 - (b) The resources of the loan, together with the resources of Loan No. /SF-BA, shall be used to participate in the financing of a project estimated at the equivalent of US\$12,300,000. Consequently, the loan contracts shall contain such provisions as the Bank deems appropriate to ensure that such resources as may be necessary, in addition to the two loans, for the complete execution of the project shall be duly provided, in accordance with a schedule of investments satisfactory to the Bank in an amount estimated at the equivalent of US\$4,300,000.
 - (c) Prior to the first disbursement of the resources of the loan, the Borrower, through MAFCA, shall present to the Bank's satisfaction evidence that it has contracted, in accordance with procedures approved by the Bank, the engineering consulting firm which shall complete the final working drawings and tender documents of the project and supervise its construction.

PROPOSED RESOLUTION

BARBADOS. LOAN /SF-BA TO BARBADOS 2/
(Bridgetown Fishing
Port Facility)

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with Barbados, for the purpose of granting it a loan to cooperate in the financing of a fishing port facility in Bridgetown. This financing shall be subject substantially to the following conditions:

1. Amount and Currencies: Up to US\$3,000,000, or its equivalent in other currencies, except that of Barbados, which are part of the Fund for Special Operations, to pay for goods and services acquired through international competition in the member countries of the Bank and for such other purposes specified in the loan contract. Payments of amortization and interest shall be effected in the respective currencies disbursed.
2. Source of Funds: The Fund for Special Operations.
3. Guarantee: The general responsibility of the Borrower.
4. Credit Fee: 1/2 of 1% per annum on the undisbursed portion of the amount indicated in Clause 1 of this resolution, commencing to accrue 12 months after the date of this resolution. The fee shall be paid in dollars of the United States of America on the same dates as the interest.
5. Amortization: The Borrower shall amortize the loan in a period of 35 years from the date of the contract, by means of consecutive, semiannual, and insofar as possible, equal installments. The first installment shall be paid 8-1/2 years after the date of the contract.

1/ The provisions contained in this Appendix II and in the following Appendices I, III, IV and V will only be final when the Board of Executive Directors has approved the proposed loan.

6. Interest: 2% per annum, payable semiannually on principal amounts outstanding. The first payment shall be made 6 months after the date of the contract. At the request of the Borrower the loan resources may be used to pay interest on the loan during the disbursement period thereof.
7. Disbursement: The term for disbursement of the loan shall expire 4 years after the effective date of the contract.
8. Special Conditions:
 - (a) The resources of the loan shall be utilized in their entirety by the Borrower, through the Ministry of Agriculture, Food and Consumer Affairs (MAFCA) and its Special Assignment Division (SAD). If modifications in the legal provisions or the basic regulations concerning the Borrower MAFCA and/or SAD are approved which, in the opinion of the Bank, may substantially affect the project, the Bank shall have the right to require the Borrower and/or the executing agency to provide explanatory and detailed information in order to determine whether such modification or modifications may have an adverse impact on the execution of the project. Only after hearing the Borrower and/or the executing agency and assessing their information and clarifications, may the Bank take such measures as it deems appropriate in accordance with provisions to be set forth in the loan contract.
 - (b) The resources of the loan, together with those of Loan /OC-BA, shall be used to participate in the execution of a project estimated at the equivalent of US\$12,300,000. Consequently, the loan contracts shall contain such provisions as the Bank deems appropriate to ensure that such resources as may be necessary, in addition to the two loans, for the complete execution of the project shall be duly provided, in accordance with a schedule of investments satisfactory to the Bank, in an amount estimated in the equivalent of US\$4,300,000.
 - (c) Prior to the first disbursement of the resources of the loan, the Borrower, through MAFCA, shall present to the Bank's satisfaction evidence that it has contracted, in accordance with procedures approved by the Bank, the engineering consulting firm which shall complete the final working drawings and tender documents of the project and supervise its construction.
 - (d) In the acquisition of machinery, equipment and other materials for the project, and in the awarding of construction contracts, the system of public bids shall be followed in each case in which the value of such acquisitions or contracts exceeds the equivalent of US\$100,000. The bidding shall be subject to the procedures to be attached as an annex to the loan contract.

- (d) In the acquisition of machinery, equipment and other materials for the project, and in the awarding of construction contracts, the system of public bids shall be followed in each case in which the value of such acquisitions or contracts exceeds the equivalent of US\$100,000. The bidding shall be subject to the procedures to be appended as an annex to the loan contract.
- (e) The Bank shall establish such inspection procedures as it deems necessary to assure the satisfactory execution of the project, and the Borrower shall extend all cooperation which is required for the most effective accomplishment of this purpose. From the amount of the financing the sum of US\$50,000 shall be allocated for credit to the income accounts of the Bank to meet expenses of general inspection and supervision.

RECOMMENDATIONS

- A. It is recommended that the following conditions, to be fulfilled to the Bank's satisfaction, be included in the loan contracts in addition to the conditions set forth in the proposed resolution:
1. Prior to any call for bids or initiation of works, the Borrower, through the Executing Agency, shall present to the Bank: (i) the general plan and specifications, budget, specific bases for the bidding, and such other documents as may be necessary for issuing the call for bids; and (ii) proof of being in legal possession of the lands, easements, or rights of way needed for the execution of the corresponding works.
 2. The Borrower, through the Executing Agency, shall undertake:
 - (i) to maintain all civil works, machinery and equipment financed with resources of the loan for the duration of their projected useful life, according to generally accepted technical standards; and
 - (ii) to prepare yearly maintenance plans as specified in paragraph VI of Appendix IV of this document. The Executing Agency shall submit to the Bank within the first sixty days of each fiscal year, starting with the first year after completion of the project and for the next 10 years, a report containing the current year's maintenance plan and budgetary allocation as well as information on compliance with the previous year's maintenance plan.
 3. Within 12 months from the date of the contract, the Borrower, through the Executing Agency, shall demonstrate that it has assigned a qualified civil mechanical engineer and an additional administrative/accounts officer to work in the Special Assignments Division and two administrative/technical assistants to work in the Fisheries Division.
 4. Within 12 months from the effective date of the Loan Contract, the Borrower, through the Executing Agency, shall submit to the Bank the base line data referred to in Section VII of Appendix IV (Annex A of the Loan Contract) together with the description of the system to be used for gathering, processing and comparing the data which shall be used in the evaluations.

5. At the end of 3-1/2 years following the date of the last disbursement of the financing, the Executing Agency shall submit an ex-post evaluation of the economic and social effects of the Project in accordance with the methodology appearing in Section VII of Appendix IV (Annex A of the loan contract).
 6. Within 36 months from the date of the loan contract, the Borrower shall take appropriate measures acceptable to the Bank in order that the rates for the use of the project facilities: (i) produce revenues at least sufficient to cover all operating expenses of the Terminal, including those related to administration, operation, maintenance and, to the extent possible, depreciation; and (ii) if the flow of funds available from the foregoing is not sufficient to cover the operating costs, as specified above, the government shall cover such deficit from government revenues.
 7. In carrying out its obligations under Recommendation No. 6 above, the Borrower, through the Executing Agency, shall undertake to submit to the Bank, within the first 60 days of each fiscal year, starting with the first year after completion of the project, and for the next five years thereafter, a report on the revenues and expenditures of the Facility.
 8. The Borrower, through the Executing Agency, shall closely monitor annual fish landings and shall inform the Bank within the first 60 days of each year and during the five years following the date of the contract, on the results of the monitoring, including any policies adopted and regulations enacted to maintain an ecological balance between exploitation and availability of this renewable natural resource.
 9. During the execution of the project, and beginning with the fiscal year ending March 31, 1985, the annual financial statements of the project shall be presented to the Bank, certified by an independent firm of public accountants acceptable to the Bank.
- B. The loan contract shall include an annex similar in content to Appendix IV (Annex A to the Loan Contract).
- C. The Technical Cooperation Agreement ATN /SF-BA shall be signed simultaneously with the Loan Contract.

- (e) The Bank shall establish such inspection procedures as it deems necessary to assure the satisfactory execution of the project, and the Borrower and the guarantor shall extend all cooperation which is required for the most effective accomplishment of this purpose. From the financing, the sum of US\$30,000, shall be allocated for credit to the income accounts of the Bank to meet expenses of general inspection and supervision.

PROJECT DESCRIPTION
(Annex A to the Loan Contract)

I. Objectives of the Project

- 1.01 The objectives of the project are: (a) to increase fish production and to contribute to the improvement of the standard of living of the population engaged directly and indirectly in the fishing industry; (b) to significantly improve the physical and hygienic conditions of Cheapside in Bridgetown for landing and marketing of fish; (c) to reduce fish imports and save foreign exchange; (d) to adapt the port infrastructure to efficiently meet the needs of fishermen and the fishing fleet; and (e) to facilitate implementation of the Government's plans to improve the entire waterfront area.

II. Description of the Project

- 2.01 The project consists of the following components:
- (a) A fishing harbour at Cheapside in Bridgetown protected by a breakwater and capable of mooring 150 fishing vessels, which number will be reached during the peak period of the fishing season. This harbour will include fish landing wharves, boat mooring piers, a boat servicing dock and boat repair facilities.
 - (b) A fishing terminal in the harbour area at Cheapside in Bridgetown with facilities for handling, processing, cold storage and marketing of fish including adequate office space and equipment for ice and fuel supplies.

III. Cost and financing

- 3.01 The total cost of the project is estimated to be the equivalent of US\$12,300,000. The distribution of this total cost by categories of investment is shown in the following table:

FINANCING TABLE

(In equivalent US\$ thousands)

CATEGORY	I D B		Sub- Total	Barbados Total	Total	%
	OC	FSO				
1. <u>Engineering and Administration</u>	390	315	705	495	1,200	9.8
1.1 Administration	0	0	0	154	154	1.2
1.2 Engin. and Supervision	390	315	705	341	1,046	8.6
2. <u>Direct Costs</u>	3,000	1,865	4,865	2,735	7,600	61.8
2.1 Site Preparation including Utility Service Modifications	100	100	0	40	140	1.1
2.2 Harbour and Breakwaters	1,755	1,130	2,885	1,623	4,508	36.6
2.3 Terminal Facilities	530	340	870	470	1,360	11.2
2.4 Terminal Services	85	55	140	83	223	1.8
2.5 Machinery and Equipment	530	340	870	499	1,369	11.1
3. <u>Concurrent Costs</u>	0	83	83	0	83	0.7
3.1 Technical Cooperation ATC/SF-2235-BA ^{1/}	0	83	83	0	83	0.7
4. <u>Financial Costs</u>	590	77	667	116	783	6.3
4.1 Interest	540	47	587	0	587	4.8
4.2 Credit Commission	0	0	0	116	116	0.9
4.3 IDB Inspection	50	30	80	0	80	0.6
5. <u>Unallocated Costs</u>	1,020	660	1,680	954	2,634	21.4
5.1 Contingency	445	290	735	415	1,150	9.3
5.2 Escalation	575	370	945	539	1,484	12.1
Total	5,000	3,000	8,000	4,300	12,300	100.0
Percentage	40.6	24.4	65.0	35.0	100.0	

^{1/} Amount represents actual expenses incurred and charged to the contingent recovery credit.

IV. Bidding

- 4.01 If goods to be procured or services are to be contracted and financed in whole or in part with the foreign exchange proceeds of the loan, the procedures and specific bidding requirements of the invitation for bids or any other form of procurement or contracting shall permit the unrestricted participation of goods and/or services originating in member countries of the Bank. Therefore, no conditions which would preclude or restrict the offering of goods or the participation of contractors from such countries shall be imposed, in keeping with the relevant IDB policies reflected in the respective loan contract.

V. Selection and Contracting of Consulting Services

- 5.01 In the selection and contracting of consulting services to be financed in whole or in part with foreign exchange proceeds of the loan, no provisions or stipulations may be set which would restrict or preclude the participation of consulting firms or consultants from member countries of the Bank.
- 5.02 The procedures to be used shall be in conformity with the relevant policies and rules of the IDB and be described in detail in an annex to the loan contract.

VI. Maintenance of Port facilities financed under the Project

- 6.01 Maintenance shall be defined as keeping all the facilities financed under the project in substantially the same conditions as it was when originally constructed.
- 6.02 Each annual plan submitted to the Bank pursuant to Recommendation No. 2 of Appendix III, will include, as a minimum, (a) the unit responsible for maintenance and the personnel to be provided; (b) the budgetary resources made available for its implementation; (c) the proposals, if any, for contracting-out; and (d) description of the maintenance work proposed for the current year. Each plan will also include a brief report on the previous year's operation and maintenance and any measures proposed to be adopted to correct any deficiency which may have been found during operation of the facilities.
- 6.03 The Bank shall have the right to periodically inspect the project facilities and, if it is determined by such inspection, or by the annual reports, that the maintenance effected is below the agreed standards, the Borrower shall take the necessary corrective action.

VII. Ex-Post Evaluation

- 7.01 The Executing Agency shall submit to the Bank one year after signature of the loan contract the results and analysis of the initial baseline information. This information shall include:
- (a) Resources management policy.
 - (b) Size and composition of existing fleet.

- (c) Production, import and export levels of each type of fish production to be affected by the project.
- (d) Employment by speciality and skill level.
- (e) Prices received for each type of fish at each stage in the marketing chain.
- (f) Operating-costs and utilization levels for boat operators, port and storage facilities, processing plant and marketing facilities.
- (g) Gross and net revenues earned for each of the intermediaries based on the above described price and quantity information.
- (h) Socio-economic characteristics of the beneficiaries (income, employment, etc.).

7.02 The Executing Agency shall also submit, 3 1/2 years after the date of last disbursement of the loan resources, an ex-post evaluation report. This report shall be used to measure the impact of the project in attaining stated project targets and shall include:

- (a) Actual costs of the physical works financed under the project;
- (b) The changes in the baseline indicators relative to the project; and
- (c) Estimated levels of baseline indicators without the project.

7.03 The above data will be collected on a representative sample basis and will be analyzed in accordance with the Bank's ex-post project evaluation methodology.

PROPOSED RESOLUTION

BARBADOS. NON-REIMBURSABLE TECHNICAL COOPERATION TO BARBADOS
FOR THE FISHING PORT FACILITY AT BRIDGETOWN

The Board of Executive Directors

RESOLVES:

1. That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such agreements as may be necessary and to adopt such other measures as may be pertinent for the execution of the plan of operations referred to in Document PR-1367 with respect to technical cooperation with Barbados for institutional strengthening of the Fisheries Division of the Ministry of Agriculture, Food and Consumer Affairs (MAFCA).
2. That up to the sum of US\$480,000 or its equivalent, is authorized for the purposes of this resolution, chargeable to the net income of the Fund for Special Operations.
3. That the above-mentioned sum is to be provided on a nonreimbursable basis.

W30950

TECHNICAL COOPERATION PLAN OF OPERATIONS
BARBADOS
(TC-83-01-47-6)

Institutional Strengthening of the Fisheries Division
of the Ministry of Agriculture, Food and Consumer Affairs (MAFCA)

I. BACKGROUND

A. Application

- 1.01 On May 18, 1983 the Government, through the Ministry of Finance and Planning, formally requested technical cooperation to strengthen the institutional capabilities of the Fisheries Division of the Ministry of Agriculture, Food and Consumer Affairs (MAFCA) in conjunction with a proposed loan for fisheries development.
- 1.02 An updated request for this technical cooperation and the loan was submitted on March 26, 1984 and, in respect of the technical cooperation, covered the following four areas: (a) fishing gear technology; (b) fish handling, processing, freezing and storage; (c) marketing and distribution including export marketing; and (d) overseas training.

B. Institution

- 1.03 The executing agency for this project is the Ministry of Agriculture, Food and Consumer Affairs (MAFCA). Within this Ministry are three specialized operational divisions: (a) the Special Assignments Division; (b) the Fisheries Division; and (c) the Markets Division. The Special Assignments Division is responsible for the day-to-day execution of major agricultural and fisheries development projects with external financing. The Fisheries Division has a broad range of administrative, regulatory and developmental responsibilities that are normally associated with the control, support and development of a national fishing industry. In practice, the effort which this Division is able to deploy in advisory and developmental activities is limited by a shortage of suitably qualified staff, a general lack of facilities and an obligation to provide a range of traditionally established fishing industry support services. The Markets Division supervises the public markets providing facilities for the sale of fish in addition to other commodities.
- 1.04 The structural organization of the Fisheries Division consists of a fisheries Officer as Division head, a marine biologist and a technical assistant. There are also 23 part-time staff members, seven of whom are

fish landing shed attendants and 8 are marine mechanics. In 1982/83 the budget of this division amounted to US\$212,000 over 50% of which was earmarked for salaries and wages, grants (subsidies) to individuals and maintenance of property.

II. PROJECT OBJECTIVES

- 2.01 The purpose of the requested Bank contribution is to cooperate in the financing of a program of institutional strengthening to the Fisheries Division of the Ministry of Agriculture, Food and Consumer Affairs (MAFCA) in order that this Division could be more effective in its advisory and developmental activities in the fishing sector.
- 2.02 The specific objectives are to (a) improve the fishing techniques in the industry through the application of better fishing gear technology; (b) improve fish handling, processing, freezing and storage practices in the industry; (c) improve the local marketing and distribution mechanism and undertake a study of potential export markets including a strategy for gaining access to such markets; and (d) develop the capabilities of the Fisheries Division in the above areas by short-term training abroad of part of its staff. The overall objective will be to increase total sales of locally produced fish and fish products.

III. PROJECT DESCRIPTION

- 3.01 To accomplish the above-mentioned objectives, the project will provide 80 man-months of individual consultant services in the following areas:

1. Individual Consultants

- (a) Fishing gear technology (36 man/months)

- 3.02 A fishing gear technologist with practical experience in a tropical, small-scale marine fishery similar to that in Barbados. The direct result of this component will be on-the-job training to fishermen and the local Fisheries Division counterpart staff in the use, maintenance and/or building of new and improved types of fishing gear, application of improved fishing techniques and the conduct of experimental/ demonstration fishing operations.

- (b) Fish handling, processing, freezing and storage (36 man/months)

- 3.03 This expert will be required to have practical experience in fish handling, processing, freezing and storage in a tropical small-scale marine fishery. The direct result of this component will be on-the-job training of local fishing personnel, written reports on the actions required of Government to improve these practices to an internationally acceptable standard. To accomplish these results, the expert will begin by identifying the existing problems and deficiencies and conduct

training programs by demonstration and practical advice both on-shore and at sea when necessary.

(c) Fish marketing and distribution (8 man/months)

- 3.04 This expert will be required to have practical experience in fish marketing and distribution in a tropical small-scale marine fishery. This component will include (i) a study of local marketing and distribution mechanisms; and (ii) a study of potential export markets for Barbadian fish and fish products. A report containing specific recommendations including appropriate marketing strategies for increasing sales in these markets will be the final product of this component.
- 3.05 The fishing gear consultant will work primarily with commercial fishermen on their vessels demonstrating new and improved fishing gear owned by the Fisheries Division which would be financed through the proposed technical cooperation.^{1/} The fishermen would gain hands-on experience in both pelagic and demersal fishing which would permit them to receive advice on the most appropriate fishing gear and best working lay out of their vessels.^{2/} The consultant will also collaborate with the Fisheries Division to make his services available for the Division's research vessel ^{3/} when necessary. The Executing Agency (MAFCA) will be required to assign at least one counterpart gear technologist within 3 months of contracting the fishing gear consultant. This counterpart will be selected after consultation with the consultant as to his suitability for further training.
- 3.06 The fish handling, processing, freezing and storage expert will implement his activities by training a counterpart technical assistant on the staff of the Fisheries Division as well as fishermen, vendors and other fishing personnel employed at the Oistins and Cheapside fishing terminals through extension work including processors, supermarket and other retail sales personnel.^{4/} The counterpart will understudy the consultant so that skillful supervision and advice on fish handling, processing, freezing and storage practices could continue after the consultancy ends. This locally trained counterpart will monitor the implementation of the recommendations of the consultant for Government action on these practices since such actions will provide the necessary support for ensuring acceptable high standards in matters related to fish handling and processing.

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- ^{1/} The fishing gear will be selected by the consultant
- ^{2/} The internal lay-out of traditional day-boats in Barbados is inefficient for fishing
- ^{3/} The Government of Barbados is presently negotiating the donation of a vessel with the Pan American Foundation
- ^{4/} Fish processors claim that about 90% of their fish loss was due to dehydration itself due to bad handling of fresh fish

- 3.07 The consultancy services will be carried out over a period of 3 years from the signature of the contract between the Government of Barbados and the selected consultants. All administrative and logistic support (secretarial help, office space and supplies, telephones, etc.) necessary for project execution will be provided by the Government through the Fisheries Division of MAFCA.
- 3.08 The consultants will be selected and contracted directly by the Executing Agency (MAFCA) within a period of 180 days from the signature of the Technical Cooperation Agreement, and in accordance with Bank policies. Each consultant will perform the functions in accordance with the Terms of Reference attached.

2. Overseas Training

- 3.09 To strengthen the institutional capability of the Fisheries Division, the project will provide overseas training for three professional/technical staff members of this Division in the fields of (a) fishing gear technology and fishing methods; (b) fishing research vessel operation and research methodology; (c) fish handling, processing, freezing and storage; (d) fisheries management including fisheries statistics and data processing, fishing cooperatives and fishing vessel design and outfitting. These three professionals will be trained in a member country of the Bank for a short-term period of up to 3 months each.
- 3.10 To implement the overseas training component, the Executing Agency will be required to (a) submit for Bank approval within six months of the signing of the Technical Cooperation Agreement the names and professional/technical background of the selected candidates, the name of the training institution they will attend, the period of training and the detailed training program for each of the candidates; and (b) initiate the training approved by the Bank at (a) above within 12 months of the signing of the Technical Cooperation Agreement.

IV. TOTAL COST AND FINANCING

- 4.01 The total estimated cost of this project is the equivalent of US\$564,000 of which the equivalent of US\$480,000 is proposed for Bank financing as per the following table.

Total Project Cost and Financial Plan

(In equivalent US dollars)

<u>Project A</u>	<u>IDB</u>	<u>Local</u>	<u>Total</u>
2. <u>Individual Consultants</u> 80/man/months x \$3,500 Includes accrued leave	<u>374,400</u> 297,500	<u>12,000</u> -	<u>386,400</u> 297,500
2.3 <u>Recruitment, Appointment and and Registration</u> Includes tickets (3), dependents, transportation of household goods, storage and excess baggage	16,400	-	16,400
2.4 <u>Other Compensation and Benefits</u> Includes installation and insurance	36,000	-	36,000
2.5 <u>Business Travel</u> Includes tickets, per diem and local travel	24,500	12,000	36,500
6. <u>General Support</u> Includes furnishings, equipment (fishing gear)	<u>24,000</u>	<u>64,000</u>	<u>88,000</u>
<u>Project B</u>			
3. <u>Fellowships and Participants</u> 3.3 Business travel	<u>42,000</u>	-	<u>42,000</u>
98. Contingencies (10%)	<u>39,600</u>	<u>8,000</u>	<u>47,600</u>
Totals	<u>480,000</u>	<u>84,000</u>	<u>564,000</u>
Percentage	85.0	15.0	100.0

V. PROJECT EXECUTION

1. Execution Schedule

- 5.01 The total execution time for this project is 36 months from the date of signature of the agreement between the Government of Barbados and the consultants. A total of 80 man/months is programmed to carry-out this project.

2. Supervision

- 5.02 Direct inspection and supervision of the project will be the responsibility of the Ministry of Agriculture, Food and Consumer Affairs (MAFCA) through its Fisheries Division. The Bank will establish its corresponding procedures for inspection and supervision through the Representation in Barbados.

3. Reports

- 5.03 Each consultant will be required to submit the following reports to the Ministry of Agriculture, Food and Consumer Affairs through its Fisheries Division with at least 5 copies to the Bank.

- (i) A detailed schedule of work (work plan) within 30 days from the commencement of work. This plan will be based on the terms of reference attached to this document. Moreover, the work-plan of each consultant will include a breakdown of the activities to be undertaken in order to accomplish his task;
- (ii) Progress reports. Within 14 days of the end of each quarter outlining the progress of work;
- (iii) Final report. Within 60 days of the end of the assignment outlining the activities and accomplishments.

- 5.04 The executing agency (MAFCA) will submit annual audited financial statements within 120 days from the end of the fiscal year of the Borrower. These statements will account for the expenses charged to the Bank's contribution as well as to the local contribution.

VI. JUSTIFICATION

- 6.01 The growth of the fishing industry of Barbados was inhibited by inefficient marketing and distribution systems, outdated fishing gear and fishing techniques and poor handling methods for fish both offshore and onshore. The proposed project will make a direct contribution to making these needs and stimulate increased exploitation of the available marine resource with higher levels of income for the fishing community.

- 6.02 The Bank's contribution is needed to assist in the execution of the proposed project because of the inability of the country to generate the required training and marketing studies locally. Moreover, given the

development strategy of a joint-effort between the public and private sectors as enunciated in the Development Plan 1983-1988, this project will be fully consistent with the role of the public sector for infrastructure development.

VII. EVALUATION

- 7.01 An evaluation of project execution including an evaluation of the results of the technical cooperation and the extent to which its objectives were accomplished will be prepared and submitted to the Bank the Borrower within 90 days of the receipt of the final report of the consultants.

Technical Assistance - Fishing Gear Technology

Requirements

- (1) At least five (5) years practical experience working with a tropical, small-scale, marine fishery in a developing country as, or in a capacity similar to, a gear technologist;
- (2) Practical experience specifically in the area of gear technology;
- (3) Good spoken and written knowledge of English language.

Duration

Three (3) years.

Reports

The following reports will be submitted to the Fisheries Division:

- (1) A detailed Work Plan within 30 days from the commencement of work;
- (2) Progress reports - within 14 days of the end of each quarter outlining the progress of work; and
- (3) Final Report - within 60 days of the end of the assignment.

Terms of Reference

- (1) Design and execution of a comprehensive experimental/demonstration fishing program utilizing a variety of fishing gear and operational techniques suitable for both local pelagic and demersal fisheries;
- (2) Modification and optimisation of appropriate introduced or existing gear and techniques to improve their efficiency in relation to local conditions;
- (3) Demonstration of improved fishing techniques to commercial fishermen primarily aboard privately owned boats or the Fisheries Division vessel;
- (4) Provision of practical advice and assistance for the adaptation of improved fishing gear to local commercial fishing vessels including minor boat design changes necessary to optimise use of improved gear;
- (5) Assistance in the selection of local Fisheries Division counterpart technicians and the provision of comprehensive training to the local counterparts in a wide range of fishing techniques and operations;

- (6) Assistance in the selection and acquisition of all fishing gear to be used by the Fisheries Division for experimental and demonstrational purposes;
- (7) Assistance in the acquisition or outfitting of a Fisheries Division experimental/demonstration fishing vessel if necessary; and
- (8) Undertake the above in such a manner that improvement in fishing methods or operations can be seen at the termination of the assignment, and that a local counterpart is trained to a standard suitable for directing the continuation of the program of improvement.

Technical Assistance - Expert in Fish Handling, Processing, Freezing and Storage

Requirements

- (1) At least five (5) years practical experience in fish handling, processing, freezing and storage in a tropical, small-scale, marine fishery in a developing country;
- (2) Good working knowledge of both practices and equipment involved in fish handling, processing, freezing and storage; and
- (3) Good spoken and written knowledge of English language.

Duration

Three (3) years.

Reports

The following reports will be submitted to the Fisheries Division:

- (1) A detailed Work Plan within 30 days from the commencement of work;
- (2) Progress reports - within 14 days of the end of each quarter outlining the progress of work; and
- (3) Final Report - within 60 days of the end of the assignment.

Terms of Reference

- (1) Identify problems and deficiencies in present practices of fish handling, processing, freezing and storage in Barbados with recommendations as to how these can be corrected;
- (2) Advise Government as to what standards, codes of practices, etc. legislative or otherwise are needed to improve present practices to an internationally acceptable standard in all aspects of handling, processing, freezing and storage;
- (3) Assist all sectors of the fishing industry, Government institutions and departments to improve practices by advising, demonstrating and training personnel both on shore and at sea where necessary;
- (4) Provide comprehensive training to local counterpart(s) in all aspects of fish handling, processing, freezing and storage relevant to the Barbados fishing industry; and

- (5) Undertake the above in such a manner that improvement in fish handling, processing, freezing and storage can be seen at the termination of the assignment, and that a local counterpart(s) is trained to a standard suitable for directing the continuation of the program of improvement.

Technical Assistance - Fish Marketing and Distribution Specialist

Requirements

- (1) At least five (5) years practical experience in fish marketing and distribution in a tropical, small-scale, marine fishery in a developing country;
- (2) Experience specifically in the standards in product type and packaging required by overseas markets, and the development of overseas markets for export; and
- (3) Good spoken and written knowledge of English language.

Duration

Eight (8) years.

Reports

The following reports will be submitted to the Fisheries Division:

- (1) A detailed Work Plan within 30 days from the commencement of work;
- (2) A progress report outlining the progress of work at the mid point of the consultants contract;
- (3) A final report within 60 days of the end of the assignment. The final report will include the export market report.

Terms of Reference

- (1) Identify problems and deficiencies in present practices of fish marketing and distribution in Barbados with recommendations as to how these can be corrected;
- (2) Design and execute an export market study for flying fish;
- (3) Assist all sectors of the fishing industry, Government institutions and departments to improve marketing and distribution by advising, demonstrating and training personnel where necessary;
- (4) Pay special attention to the design of schemes and mechanisms that would collectively assist in increasing local fish consumption, decrease fish importation and develop export markets for local fish products;
- (5) Provide comprehensive training to a local counterpart in all aspects of fish marketing and distribution relevant to the Barbados fishing industry; and

- (6) Undertake the above in such a manner that improvement in fish marketing and distribution can be seen at the termination of the assignment, and that a local counterpart is trained to a standard suitable for directing the continuation of the program of improvement.