

**ASIAN DEVELOPMENT BANK**

**PCR: SRI 24121**

**PROJECT COMPLETION REPORT**

**ON THE**

**FISHERIES SECTOR PROJECT  
(Loan 1201-SRI[SF])**

**IN**

**SRI LANKA**

**November 2003**

## CURRENCY EQUIVALENTS

Currency Unit – Sri Lanka rupee/s (SLRs)

		<b>At Appraisal</b> (30 June 1992)	<b>At Project Completion</b> (30 April 2001)
SLRe1.00	=	\$0.0233	\$0.0111
\$1.00	=	SLRs42.85	SLRs89.75

## ABBREVIATIONS

ADB	–	Asian Development Bank
BME	–	benefit monitoring and evaluation
CCD	–	Coast Conservation Department
CFC	–	Ceylon Fisheries Corporation
CFHC	–	Ceylon Fishery Harbor Corporation
CRMP	–	Coastal Resource Management Project
DOF	–	Department of Fisheries
EA	–	Executing Agency
EIRR	–	economic internal rate of return
FIRR	–	financial internal rate of return
GDP	–	gross domestic product
MFAR	–	Ministry of Fisheries and Aquatic Resources
NARA	–	National Aquatic Resources Research and Development Agency
NDB	–	National Development Bank of Sri Lanka
NFDP	–	National Fisheries Development Plan
O&M	–	operations and maintenance
PCI	–	participating credit institution
PIA	–	project implementing agency
PIU	–	project implementation unit
PMO	–	project management office
SDR	–	special drawing rights
TA	–	technical assistance

## NOTE

In this report, "\$" refers to US dollars.

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## BASIC DATA

### A. Loan Identification

1.	Country	Sri Lanka
2.	Loan Number	1201
3.	Project Title	Fisheries Sector Project
4.	Borrower	Democratic Socialist Republic of Sri Lanka
5.	Executing Agency	Ministry of Fisheries and Aquatic Resources Development
6.	Amount of Loan	
	Original	SDR18,493,000
	Revised Amount (Net of Cancellation of Savings)	SDR18,004,806 (\$25.4 million equivalent)
7.	Project Completion Report Number	PCR:SRI 773

### B. Loan Data

1.	Appraisal	
	– Date Started	30 June 1992
	– Date Completed	16 July 1992
2.	Loan Negotiations	
	– Date Started	02 November 1992
	– Date Completed	04 November 1992
3.	Date of Board Approval	01 December 1992
4.	Date of Loan Agreement	11 January 1993
5.	Date of Loan Effectiveness	
	– In Loan Agreement	April 1993
	– Actual	18 May 1993
	– Number of Extensions	no extension
6.	Closing Date	
	– In Loan Agreement	31 December 1999
	– Actual	12 September 2001
	– Number of Extensions	2
7.	Terms of Loan	
	– Service Charge	1%
	– Maturity (no. of years)	30
	– Grace Period (no. of years)	10
9.	Disbursements	
	a. Dates	

<b>Initial Disbursement</b>	<b>Final Disbursement</b>	<b>Time Interval</b>
20 July 1993	12 September 2001	97.5 months
<b>Effective Date</b>	<b>Original Closing Date</b>	<b>Time Interval</b>
18 May 1993	31 December 1999	79 months

## b. Amount (SDR)

Category	Original Allocation	Cumulative Disbursements	Undisbursed Balance Cancelled <sup>a</sup>
01 Civil Works: Harbors/Anchorages	4,544,000	10,895,833	(1,011,783)
01 Civil Works: Fishing Commercial Development	509,000	1,209,470	400,529
02 Vehicles, Materials, Equipment	464,000	582,780	16,719
03 Research and Surveys	899,000	442,327	217,672
04 Training	225,000	333,164	186,835
05 Consulting Services	684,000	2,008,906	466,293
06 Credit	711,000	1,870,914	63,585
07 Recurrent Costs	299,000	210,495	10,005
08 Local Currency Expenditure	9,424,000	26,912	3,587
09 Service Charge	424,000	424,000	0
10 Unallocated	300,000	0	134,750
<b>Total</b>	<b>18,493,000</b>	<b>18,004,806</b>	<b>488,194</b>

SDR = special drawing rights.

<sup>a</sup> Undisbursed funds (SDR488,194) were cancelled on the loan closing date.

**Actual**

10. Local Costs (ADB-Financed)	
– Amount (million)	\$5.4 million
– Percent of Local Costs	47%
– Percent of Total Cost	17%

**C. Project Data**

## 1. Project Cost (\$ million)

Cost	Appraisal Estimate		Actual	
	Amount	%	Amount	%
Foreign Exchange Cost	13.0	39	19.9	64
Local Currency Cost	20.0	61	11.4	36
<b>Total</b>	<b>33.0</b>	<b>100</b>	<b>31.3</b>	<b>100</b>

## 2. Financing Plan (\$ million)

Item	Appraisal Estimate			Actual		
	Foreign	Local	Total	Foreign	Local	Total
Implementation Costs:						
Borrower-Financed	0.0	4.1	4.1	0.0	5.4	5.4
ADB-Financed	12.7	13.3	26.0	19.9	5.4	25.3
Participating Credit Institutions	0.0	0.5	0.5	0.0	0.3	0.3
Sub-borrowers	0.0	2.4	2.4	0.0	0.3	0.3
<b>Total</b>	<b>12.7</b>	<b>20.3</b>	<b>33.0</b>	<b>19.9</b>	<b>11.4</b>	<b>31.3</b>

ADB = Asian Development Bank.

## 3. Cost Breakdown by Project Component (\$ '000)

Component	Appraisal Estimate			Actual		
	Foreign	Local	Total	Foreign	Local	Total
<b>A. Harbor and Anchorage Rehabilitation</b>	6,389	10,940	17,329	15,338	4,026	19,364
<b>B. Fishing Community Development</b>						
1. Coastal Protection/ Conservation Works	716	1,673	2,389	679	1,435	2,114
2. Credit Support	1,000	4,000	5,000	659	2,433	3,092
<b>C. Research &amp; Institutional Support</b>						
1. Research & Survey	1,264	402	1,666	482	174	656
2. Consultancies	961	575	1,536	987	2,058	3,045
3. Training	317	402	719	184	290	474
4. Project Management	420	1,429	1,849	233	757	990
5. Vehicles & Equipment	653	206	859	804	207	1,011
<b>Base Cost</b>	<b>11,720</b>	<b>19,627</b>	<b>31,347</b>	<b>19,366</b>	<b>11,380</b>	<b>30,746</b>
Contingencies	432	625	1,057	0	0	0
Service Charges	596	0	596	587	0	587
<b>Total Project Cost</b>	<b>12,748</b>	<b>20,252</b>	<b>33,000</b>	<b>19,953</b>	<b>11,380</b>	<b>31,333</b>

## 4. Project Schedule

Item	Appraisal Estimate	Actual
<b>A. Consulting Services</b>		
<b>1. Loan-Funded</b>		
– Start of Services	FY1993	November 1993
– Completion of Services	FY1998	January 2001
<b>2. ADTA Funded</b>		
– Start of Services	FY1993	October 1995
– Completion of Services		December 1997
<b>B. Civil Works Contract</b>		
<b>1. Harbors and Anchorages</b>		
– Date Started	FY1993	September 1993
– Completion of Works	FY1998	February 2001
<b>C. Vehicles and Equipment</b>		
1. First Procurement	FY1993/94	January 1994
2. Last Procurement	FY1993/94	March 1996

Item	Appraisal Estimate	Actual
<b>D. Research and Surveys</b>		
1. Date Started	FY1993	November 1995
2. Date of Completion	FY1996	March 1998
<b>E. Other Milestones</b>		
First Reallocation of Loan Proceeds		26 September 1996
First Extension of Loan Closing Date		31 December 2000
Second Extension of Loan Closing Date		30 April 2001
First Partial Cancellation (SDR488,193.92)		12 September 2001

ADTA = advisory technical assistance, FY = fiscal year, SDR = special drawing rights.

#### 5. Project Performance Report Ratings

<b>Project Administration Committee (PAC) Notes</b>		
<b>Implementation Period</b>	<b>Project Classification</b>	
	<b>Last</b>	<b>Current</b>
31 March 1993	A	A
22 December 1993	AAA	AAA
17 November 1994	AAA	BAA
21 December 1995	BAA	AAA
03 June 1996	AAA	AAA
26 September 1996	AAA	AAA
24 July 1997	AAA	AAA
18 December 1997	AAA	AAA

A = satisfactory, AAA = satisfactory, BAA = partly satisfactory.

#### **Project Performance Report (PPR)**

<b>Implementation Period</b>	<b>Ratings</b>	
	<b>Development Objectives</b>	<b>Implementation Progress</b>
31 August 1998	Satisfactory	Satisfactory
22 September 1991	Satisfactory	Satisfactory
11 December 2000	Satisfactory	Satisfactory
30 June 2001	Satisfactory	Satisfactory

#### **D. Data on Asian Development Bank Missions**

<b>Name of Mission</b>	<b>Date</b>	<b>Persons (no.)</b>	<b>Person-Days (no.)</b>	<b>Specialization of Members<sup>a</sup></b>
Loan Fact Finding	25 November–12 December 1991	3	18	a, f, g
Appraisal Mission	30 June–16 July 1992	7	107	a, b, c, d, e, f, g

Name of Mission	Date	Persons (no.)	Person-Days (no.)	Specialization of Members <sup>a</sup>
Inception Mission	17–24 March 1993	2	16	a, h
Special Project Administration <sup>b</sup>	23 June–05 July 1993	2	5	a, i
Review Mission 1	1–8 December 1993	8	16	a, h
Review Mission 2	24 October–15 November 1994	3	39	c, f, g
Special Project Administration 2	8–13 May 1995	1	6	c
Midterm Review	30 November–15 December 1995	2	22	c, j
Review Mission 3 <sup>c</sup>	29 April–21 May 1996	2	33	k, c
Special Project Administration 3	28 August–5 September 1996	2	13	k, l
Review Mission 4	7–15 July 1997	1	8	k
Review Mission 5	5–13 December 1997	2	14	k, m
Review Mission 6	15–23 September 1998	3	27	n, o, p
Review Mission 7	9–15 September 1999	1	7	n
Review Mission 8	11–19 December 2000	2	18	n, q
Special Project Administration 4	2–6 July 2001	2	10	n, p
Project Completion Review <sup>d</sup>	25 October–8 November 2002	3	30	r, s, t

<sup>a</sup> a = senior financial analyst, b = senior programs officer, c = project economist, d = counsel, e = young professional, f = fisheries specialist (consultant), g = fisheries port engineer (consultant), h = senior clerk, l = rural development specialist, j = manager, Forestry and Natural Resources Division (West), k = fisheries specialist, l = Project Administration Unit (PAU) head, m = financial analyst, n = project specialist, o = senior project specialist, p = associate project analyst, q = engineer (consultant), r = senior project economist, s = assistant project analyst, t = institutional/financial analyst (consultant).

<sup>b</sup> The mission was in conjunction with a detailed review of Loan No. 1128-SRI: *Southern Province Rural Development Project*.

<sup>c</sup> The mission coincided with a tripartite meeting for TA No. 1795-SRI: *Rationalization of Fishery Harbor and Other Charges*.

<sup>d</sup> The Project Completion Review Mission comprised Snimer K. Sahni, senior project economist (mission leader); Ma. Dolores Tejada, assistant project analyst; and Ramola Bhuyan, institutional/financial analyst (staff consultant).





## I. PROJECT DESCRIPTION

1. Sri Lanka has rich fishery resources whose potential has not been optimally utilized. In 1991, the fisheries sector contributed about 2% of the gross domestic product (GDP). The sector employed about 120,000 persons directly, and another 15,000 persons indirectly in fishery-related activities. Today, the fisheries sector contributes only 2.7% to the GDP, with about 200,000 fishers.<sup>1</sup> Fish provides a large part of the animal protein in the Sri Lankan diet; all income groups consume fish. From 1988 to 1991, fish production stagnated at about 200,000 tons, leading to a growing gap between domestic fish supply and demand. This led to rising domestic fish prices and a growing drain on the country's foreign exchange reserves because of increased imports. More important, the sector's poor performance adversely impacted the quality of life of the fishing communities, which are among the country's poorest.

2. The Asian Development Bank (ADB) provided a technical assistance (TA) grant in 1987 to conduct a comprehensive study of the fisheries sector, to assess its constraints and recommend a strategy for its development.<sup>2</sup> The study, completed in 1988, confirmed that past plans for sector development were based on overly optimistic estimates of Sri Lanka's exploitable coastal marine resources, and focused on increasing production, rather than managing the resources. The study recommended (i) intensified development of the offshore fisheries, partly to reduce pressure on coastal fisheries; (ii) a strategic shift of public sector investment from providing fishing vessels and gear to more crucial areas, including (a) construction and rehabilitation of the sector's infrastructure, (b) coastal conservation and environmental protection, and (c) support for fishing community development; and (iii) implementation of institutional reforms in public sector institutions complemented by market-based policy measures. To implement the sector strategy, the Government adopted a 5-year National Fisheries Development Plan (NFDP) for 1990–1994, followed by a proposed NFDP for 1995–1999. ADB provided a further TA grant in 1990 for a feasibility study for investment in the fisheries sector.<sup>3</sup> The feasibility study was completed by the Food and Agriculture Organization Investment Center in 1991. The Government sought ADB financing for the proposed investment, and the Fisheries Sector Project was appraised in June–July 1992. ADB subsequently approved a loan of \$26 million equivalent on 1 December 1992.

3. The Project was designed as a sector loan in line with the Government's overall reform program, and contributing to the investments required to implement NFDP. The project objectives were to (i) increase fish production and fishers' earnings, (ii) improve resource use while ensuring sustainability, and (iii) strengthen the institutions that support and serve the fishing industry. With these objectives in mind, the Project was organized in three parts:

- (i) **Part A: Harbor and Anchorage Rehabilitation Subprojects.** These included (i) detailed coastal engineering studies and environmental impact assessments to be conducted at 3 sites (Chilaw, Negombo, and Puranawella) and preliminary studies at 10 smaller anchorages, to be followed by further detailed studies and environmental assessments at as many as 5 of these anchorages; and (ii) rehabilitation of 5 selected fishery harbors and anchorages (Beruwala, Chilaw, Mirissa, Negombo, and Puranawella) that were identified as requiring rehabilitation urgently, and as many as 5 smaller anchorages in the project area.

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<sup>1</sup> Ministry of Fisheries and Ocean Resources. 2002. *The Fisheries and Ocean Resources Sector National Policy and the Development Plan*. Sri Lanka.

<sup>2</sup> ADB. 1987. *Technical Assistance to Sri Lanka for Fisheries Sector Study*. Manila.

<sup>3</sup> ADB. 1990. *Technical Assistance to Sri Lanka for Fisheries Sector Project*. Manila.

- (ii) **Part B: Fishing Community Development Subprojects.** These included (i) coastal conservation and protection measures through (a) pilot studies at six selected coastal sites to improve understanding of the processes of coastal erosion and accretion, (b) five aerial surveys during the first 3 years to identify coastal trends, (c) base mapping of about 44 km of coastline, and (d) establishment of appropriate coastal protection and conservation measures (such as groynes,<sup>4</sup> revetments, and sand bypassing systems); and (ii) social infrastructure support through (a) construction of village facilities for about 60 fishing communities, (b) provision of microcredit to initiate income-generating and self-employment generating activities for the very poor, (c) provision of motorcycles to selected field staff of the Department of Fisheries (DOF)<sup>5</sup> to facilitate their coordinating activities under this component, and (d) provision of services of a sociologist/microcredit specialist.
- (iii) **Part C: Research and Institutional Support.** Activities under this part included (i) exploratory fishing and a resource survey to obtain data as a basis for sustainable development of fishery resources through (a) charter of commercial vessels for 2 years, (b) recruiting a team of international and domestic consultants to carry out the surveys, assist National Aquatic Resources Research and Development Agency (NARA) to formulate and implement a research program, and provide training; and (ii) institutional support for specialist services, training, and project management.

## II. EVALUATION OF DESIGN AND IMPLEMENTATION

### A. Relevance of Design and Formulation

4. The Project was consistent with the Government's development objectives and strategy, and ADB's country operational strategy at the time of appraisal. The relevance of the Project is affirmed by the continuation of some project activities under Loan 1716-SRI: *Coastal Resource Management Project* (CRMP), consistent with Government and ADB country strategies at the time of project completion. At the time of project formulation, investment in fishery infrastructure, both economic and social, was an important need that was incorporated in NFDP, to which the Project contributed. The Fisheries Development Program, 1999–2004, continued the Government's emphasis on coast conservation, environmental protection, and poverty reduction. The Project's support to private sector participation through policy and institutional reform remains relevant with the current government focus on increasing the private sector's role (footnote 1). The Government's fisheries sector policy, 2002, reiterates its role to facilitate, promote, and regulate private investment in the sector. Overall, the project appraisal correctly identified key sector issues, and the project interventions were appropriate to address these issues.

5. The project design took into account lessons learned from the implementation of three earlier fisheries projects in Sri Lanka. A process of beneficiary consultation was built into the project design, recognizing lessons drawn from earlier projects on the desirability of allowing targeted beneficiaries to exercise free choice over the selection of fishing assets. The sector project approach provided the flexibility to make changes in formulation and scope in response to beneficiary needs, keeping in mind the selection criteria for subprojects. Thus, although the

<sup>4</sup> A groyne is a breakwater running seaward from land, constructed to stop erosion, or the flow of beach material.

<sup>5</sup> Now known as Department of Fisheries and Aquatic Resources.

project design envisaged only rehabilitation of harbors and anchorages, new harbor construction was done at certain sites, resulting in increased time and cost. Although consultations were held with beneficiaries during project preparation, these may not have been adequate to obtain a cross section of views, especially at Negombo where local opposition prohibited the development of planned infrastructure.<sup>6</sup> It was noted during the benefit monitoring and evaluation (BME) interim evaluation that awareness was inadequate among potential beneficiaries of the proposed developments.

6. A logical framework was not a requirement at the time of project formulation, so the formulation suffers from an inadequacy of monitorable performance indicators and targets. The need for benchmark surveys as a basis for BME was not sufficiently emphasized, so the Executing Agency (EA) did not give them due importance. The BME interim evaluation also noted the lack of monitorable indicators for evaluation of project outputs and outcomes. The scope of the project preparatory TA also did not explicitly provide for beneficiary consultations. This was observed as a weakness in the project formulation (footnote 6).

## **B. Project Outputs**

7. The Project was generally implemented as envisaged at appraisal. Because this was designed as a sector project, not all project outputs were predefined. Appendix 1 gives a comparison of actual physical works completed and those envisaged at appraisal. Under Part A of the Project, coastal engineering studies were carried out for Puranawella harbor, Chilaw anchorage, and four provisionally selected anchorages: Dikowita, Hikkaduwa, Kudawella, and Panadura. Subsequently, Hikkaduwa, Kudawella, Panadura, and Puranawella were rehabilitated through the Project.

8. Port engineering studies were also carried out for developing the Hikkaduwa, Kudawella, and Panadura anchorages as fishery harbors. This was in response to the requirements of the beneficiaries of the facilities. This had an impact on project schedules and costs, because subproject investments were considerably more than originally estimated (at appraisal, the upgrading of existing infrastructures—not construction of large new infrastructures—was considered. For Kudawella, erosion of the breakwater surface was reported. The Project Completion Review (PCR) Mission could not ascertain what action had been taken to remedy this problem. Shore facilities at Kudawella were also designed on a larger scale than envisaged at appraisal, and remain incomplete.

9. Dikowita is being considered for development, with private participation, for foreign and joint venture deep sea fleets, based on the coastal engineering study carried out under the Project. Further development of Chilaw harbor is being implemented under CRMP. Thus, all of the coastal engineering studies have led to further development of the project sites, or their consideration for development through other projects.

10. Although Panadura presented technical difficulties, it was taken up for development as a harbor. It was given priority because of the threatened closure of Mutwal harbor because of a planned expansion of Colombo port. However, this has not yet materialized, and Mutwal harbor continues to operate. As a result of this change in assumption and cost constraints, only the first phase of Panadura was developed. This did not make Panadura an all-weather harbor, nor did

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<sup>6</sup> Major objections came from small-scale fishers who feared (i) loss of land and homes, (ii) loss of resources because larger vessels from elsewhere would use the site, and (iii) possible adverse effects on the lagoon system on which they depended for their livelihoods. The complexity of the issues required preliminary consultations before the site was selected for detailed appraisal.

it make it safe enough to attract boats away from other nearby harbors. Consequently, even the few users are unwilling to pay any charges for what they consider incomplete facilities. The subproject appraisal assumes that one benefit will be an increased number of fishing days during the monsoon. The financial internal rate of return (FIRR) for this harbor was negative, unless it was assumed that the commission on fish sales was doubled. The economic internal rate of return (EIRR) was found to be acceptable assuming that all 75 boats of local fishing communities that were then using other harbors would return to Panadura after development. But Panadura requires significant additional investment in marine structures before it can function as an alternative harbor for multiday boats. The underlying assumptions for the subproject feasibility analysis do not appear to have been adequately assessed or reviewed. A more careful sensitivity analysis was warranted to test the robustness of the assumptions.

11. Table 1 summarizes the capacity and utilization of the project harbors, and the status of harbor management. The capacity utilization ranges from 32% to 87%, the lowest utilization being at the two newest harbors, Hikkaduwa and Kudawella. This is attributed to the fact that, although the Hikkaduwa subproject is completed as designed, further dredging is needed in a part of the harbor to better utilize the entire harbor by making it available to multiday boats. Beruwala and Mirissa harbors are the only two project-financed harbors that charge berthing fees. At Beruwala, the fee ranges from SLRs450 to SLRs1,410 per month, depending on the vessel size, and at Mirissa, from SLRs225 to SLRs1,125 per month. According to the monthly income and expenditure statement of Beruwala harbor, the cumulative excess of income over expenditure from January through September 2002 was SLRs1.4 million, before depreciation.

**Table 1: Data on Project Harbors**

Harbor	Multiday Boat Capacity (no.)	Multiday Boats Using Harbor (no.)	Capacity Utilization (%)	Harbor Manager in Place Since
Beruwala	350	290	83	1998
Hikkaduwa	220	130	59	June 2001
Kudawella	375	120	32	July 2001
Mirissa	150	130	87	December 1996
Puranawella	320	249	78	January 1997

Source: Review missions of the Asian Development Bank and the Ceylon Fisheries Harbors Corporation.

12. In Part B of the Project, five aerial surveys were planned, to map about 44 km of the coastline. But only two surveys could be completed, because of breakdown of Survey Department aircraft. Cost considerations and security restrictions were cited as reasons that the aircraft remained out of order. The outputs of the surveys, though limited, were of value and are currently being used in CRMP. Base mapping was completed at four of the identified sites; two were dropped because maps were already available. Thus, less than 44 km was mapped, which cut costs. Coastal protection studies were completed at the three identified sites by mid-1996.

13. Coastal protection works were delayed, partly by consultations with beneficiaries on the type of construction. The total length of revetments built at four sites was 2,100 meters (m). Sand nourishment programs were implemented and groynes were constructed at two sites. The sites and methods selected for coastal protection works were driven by an urgent need to save stretches of highway, rail tracks, land, and houses threatened by erosion. These were preventive measures, which often shift the threat of erosion to other sites. Under CRMP, coastal stabilization measures are being implemented that will both protect and nourish the coastline on a larger scale.

14. During project appraisal, a need was identified for facilities to improve the village environment in coastal fishing villages, including access roads, drinking water, electricity, and sanitation. The Project provided financing for the cost of inputs and materials needed for facilities identified by villagers in 60 fishing villages in the project area, with the beneficiaries being required to contribute labor or provide equivalent wage cost of construction. The original design was changed to the extent that 63 village clusters, comprising 383 fishing villages, were instead targeted with the purpose of widening the benefits. Requirements were identified in village-level meetings. The proposals went through the divisional secretariats to ensure that there were no overlaps with existing government initiatives. The Project provided 90% of the cost of inputs and materials for the facilities.

15. On completion, the facilities were handed over to local organizations. The PCR Mission noted that the beneficiaries were generally satisfied with the facilities. But provisions for maintaining the facilities vary, as the PCR Mission observed during a field visit. Many village-level organizations were reported unable to provide funds to maintain the facilities. No assessment of the beneficiaries' capacity and willingness to pay for maintenance was done at appraisal, nor during implementation. Without proper periodic maintenance, facilities are unlikely to give long-term benefits.

16. For integrated development of the project area, subloans through participating credit institutions (PCIs) were planned for poor fishing families to initiate income- and self employment-generating activities. The objectives of this subcomponent were to divert poor fishing families to other income-generating activities, benefit women, and generate employment. The National Development Bank of Sri Lanka (NDB) implemented this subcomponent. NDB had completed 1,276 loan approvals for SLRs175.0 million by the end of 1998, and had disbursed the project credit target of SLRs153.3 million.

17. The eligibility criterion that NDB used for granting refinancing loans was that the onshore commercial activity upgrade or diversify the livelihood of the fishery communities. Thus, poverty alleviation was not the driving force in appraising loan applications. An analysis of information on loan approvals and limited interaction with beneficiaries showed that (i) loans were provided for boat manufacture, fish processing and transportation, animal husbandry, and a variety of industry sectors including food processing, textiles, garments, metal products, construction materials and contracting, chemicals, and paper; (ii) 36% of the loans were for new enterprises while the rest were for expansion of existing enterprises; (iii) women comprised 36% of the sub-borrowers; (iv) the total employment generated was 1,590 jobs; (v) loans were granted against collateral, even though it was envisaged at appraisal that sub-borrowers would provide security based on personal integrity, or a group system of security that the concerned PCIs would determine; and (vi) in a few cases, the collateral was sold to recover the loan amount. NDB observed that this provision of credit was a cost-effective way to generate employment.

18. At appraisal, it was estimated that about 17,000 jobs would be created through the credit subprojects, including 8,500 from medium- and small-scale subloans, and 8,250 through micro loans. A medium-scale subloan amount of SLRs500,000 was expected to employ 10 persons for a year; a small-scale subloan of SLRs40,000, 5 persons; and a micro loan of SLRs10,000, 1 person for every 8 such loans. The Project disbursed 1,276 loans and created 1,590 jobs. Table 2 summarizes the loan disbursement and the expected number of jobs created. Applying appraisal norms to the disbursements, the actual job creation was only 47% of that expected. While disbursement targets and commercial terms were met, poverty alleviation through

employment generation and targeting women beneficiaries was not given sufficient attention during implementation.

**Table 2: Loan Disbursements**

Loan Amount (SLRs)	Category	Loans (no.)	Total Value (SLRs '000)	Jobs Expected (no.)
1,800–40,000	Micro	674	10,806	84
40,500–500,000	Medium- and small-scale	542	83,831	2,710
More than 500,000	Large-scale	60	58,674	600
<b>Total</b>		<b>1,276</b>	<b>153,311</b>	<b>3,394</b>

Source: National Development Bank of Sri Lanka

19. Costs of chartering two foreign vessels for the research surveys were prohibitive, so the contract was retendered to hire three local boats for 2 years, starting in September 1995.<sup>7</sup> These vessels were fitted with equipment for gillnetting and tuna longlining, but were smaller than foreign vessels and could not carry the range of equipment envisaged at appraisal for other studies. The survey results were published in quarterly newsletters that were distributed at fishery harbors. The findings were consolidated in a stock assessment report in February 1998. The information was useful as baseline data, but lost its utility with time because there were no follow-up surveys and validations. Thus, the benefits could not be sustained over time. But certain information continues to be useful, including the recommended number of fishing vessels, seasonal migration of fish stock, and potential yields from different fishing methods. The vessel tracking device procured through the subproject was handed over to the Ceylon Fisheries Harbors Corporation (CFHC) and the bathythermographs, to NARA. The bathythermographs are not being used. The fishing logbooks introduced under the subproject were discontinued because NARA lacked staff to carry on the activity. Based on the surveys that were completed, however, it was recommended that subsidies for construction of offshore gillnet vessels be discontinued, and the size of the tuna longline fleet be limited to 160 vessels.

20. Part C of the Project provided for 38 person-months of overseas training and 512 person-months of local training, as well as training material and equipment. The training was completed and, according to trainees contacted by the PCR Mission, was relevant and useful. Most of the trained personnel from the EA and implementing agencies continue working in their departments; some are seconded to the CRMP project office. Local training involved awareness programs for credit schemes and income-generating activities, as well as training for women, management of fishery cooperatives, and fishers.

### C. Project Costs

21. The total project cost estimated at appraisal was \$33.0 million equivalent, including taxes and duties (\$0.6 million), recurrent costs (\$1.4 million), and service charges during construction (\$0.6 million). The foreign exchange cost was estimated to be \$12.7 million (38% of project cost) and the local currency cost, \$20.3 million equivalent (62% of project cost). The ADB loan was \$26.0 million (79% of project cost), to cover the entire foreign exchange cost and \$13.3 million equivalent of the local currency cost.

<sup>7</sup> At appraisal, it was provided that the boats would be procured through international shopping because of the specialized nature of the resource survey. It appears, however, that the costs were not adequately assessed.

22. At project completion, total project cost was \$31.3 million, comprising \$19.9 million (64% of project cost) in foreign exchange and \$11.4 million in local currency (36% of project cost). At the Midterm Review, it was noted that the unit costs for dredging and stone for coastal protection works were considerably higher than estimated at appraisal. Other costs at that time were less than the estimated costs. Nonutilized funds and savings in some components were used to accommodate increased costs in the harbor and anchorage rehabilitation component. The reallocation of loan proceeds affected the foreign and local percentages of costs. The ADB and Government financing shares within project components also varied (for example, for consulting services and construction for Kudawella and Hikkaduwa, and civil works per cluster for village infrastructure).

#### **D. Disbursements**

23. Retroactive financing was approved from 16 July 1992, but the first disbursement was on 20 July 1993. An initial disbursement of \$1.0 million was made to the imprest account in July 1993. This was increased to \$2.0 million in August 1995. The imprest account has been replenished regularly. Total disbursements under the ADB loan were \$25.3 million. In September 2001, \$628,906 of the loan was canceled. Appendix 2 gives details of cumulative disbursements.

24. In the first 2 years, disbursements were low, accounting for only 15% of the loan, due to studies that were required before contracts for physical construction could be awarded. The tendering process for construction contracts also took more time than anticipated. Disbursements were further delayed by the slow progress of two civil works contracts, at Panadura and Hikkaduwa (awarded in December 1997), and the delayed award of a civil works contract for Kudawella harbor. The lack of a full-time project accountant due to serious illness from October 1995 to June 1996 also adversely affected disbursements. The appraisal disbursement schedule would have been realistic, had these unforeseen delays not occurred during project implementation.

#### **E. Project Schedule**

25. The loan became effective in May 1993 with a planned implementation of 6 years, and a loan closing date of 31 December 1999. Loan effectiveness was delayed by 1 month to meet loan effectiveness conditions. In 1999, the loan period was extended by 12 months, to 31 December 2000, because of delays in construction of civil works and shore facilities at three sites: Panadura, Hikkaduwa, and Kudawella. In October 2000, the Government requested an additional 4-month extension, to 30 April 2001, to complete all project-funded civil works. The extension and additional works were necessary to make the harbors fully operational. The loan account was closed in September 2001. Appendix 3 gives the project implementation schedule.

26. The individual harbor and anchorage rehabilitation subprojects suffered unforeseen, but significant, delays. Recruitment of consultants and the preparation, evaluation, and award of tenders took more time than planned at appraisal. Coastal engineering studies were awarded to a single local firm, because no other local firm could qualify. The firm had limited capacity, so the studies took longer than anticipated to complete, which in turn delayed construction. Also, port engineering studies were carried out to develop anchorages into harbors, which was not in the original project scope. Shore facilities such as auction halls were added to the original scope of work at harbors such as Beruwala and Mirissa, to support marketing. This further increased the time needed to complete the works. Construction of these facilities should have started simultaneously, and should not have awaited completion of harbor construction.



27. There were initial delays in the coastal conservation and protection subprojects. Consultation with beneficiaries regarding the types of structure took longer than planned. Contracts had to be retendered at Kottegoda and Edandawella because the prices exceeded the budgets.

28. Implementation of the microcredit component was delayed because of the lack of experience and outreach of the PCIs identified at appraisal. Utilization of credit improved with addition of rural branch networks of the Bank of Ceylon and the People's Bank.

29. There were also significant delays in the resource survey subprojects. The proposal to charter foreign survey vessels proved to be overly expensive, so local vessels were substituted. Retendering took time, and the survey began in September 1995.

## **F. Implementation Arrangements**

30. The implementation arrangements were generally satisfactory, and worked effectively as envisaged at appraisal. An interministerial project coordination committee was established and met 15 times, providing overall coordination and guidance during the Project. The project director said that the committee's size made it unwieldy, but it served its purpose. Divisional coordination committees were also established to coordinate activities under Part B of the Project, and these met regularly (238 meetings).

31. A project management office (PMO), headed by a project director, was soon established, but the project director and staff were changed in January 1996, after a change in government. The lack of continuity had a temporary adverse impact on project implementation. The project implementation units (PIUs) were staffed by full-time staff of the implementing agencies. But the Coast Conservation Department and NDB did not establish separate PIUs as envisaged at appraisal, although the earmarked staff worked on project activities under the guidance of these implementing agencies. The absence of a properly implemented project management information system was noted as a weakness in the flow of information between PMO and the PIUs. The PIUs for harbor and anchorage subprojects, and for resource surveys, functioned under the PMO, but did not always integrate with the normal working of the implementing agencies. This caused some coordination problems, and reflects on the PMO's overall project management.

## **G. Conditions and Covenants**

32. The loan was declared effective on 18 May 1993, about 4 months after its signing. There was no significant delay in complying with the conditions of effectiveness. Appendix 4 gives details of compliance with loan covenants.

33. The Government and the EA generally complied with the major loan covenants. But some conditions were not fully met:

- (i) The Loan Agreement stipulated that the Government would divest its shareholding in the Ceylon Fisheries Corporation (CFC), and transfer certain CFC commercial activities to the private sector. The intention was to support the Government's stated reform program to place greater reliance on the private sector for all commercial production, processing, and marketing of fish and fish products. This could be ensured by the Government disengaging its agencies from all commercial activities, and reorienting the agencies'

functions to be regulatory and service-oriented. The Government attempted twice to divest its shareholdings, but the private sector showed no interest. The policy environment was not conducive to complete divestment so, to that extent, the loan covenant was unrealistic. A more realistic assessment of the viability of the units proposed for divestment was needed. Since 1999, the Government has made no grants to CFC, and CFC is expected to operate as a viable commercial entity. But this does not fulfill the intention of the covenant. The Government observed that CFC, with only 1% market share, is not impeding private sector development, but plays a role in maintaining price stability. This may lead to market distortions.

- (ii) The Government was also required to review the performance of the subsidy scheme for fishery cooperatives, and the feasibility of further reduction and eventual complete elimination of the subsidy scheme for multiday fishing boats. This condition has been partly complied with, in that a committee was appointed in 1993–1994 to review the issue, and subsidies are gradually being phased out. During appraisal of CRMP, the Government agreed to reduce subsidies by 15% annually for coastal and offshore boats, and restrict the subsidy to offshore vessels after 2002.
- (iii) The Government was required to (a) prepare a detailed BME program within 12 months of loan effectiveness, (b) carry out a postevaluation survey of Loan 648-SRI: *Aquaculture Development Project*, and (c) complete benchmark surveys at selected project sites. This was partly complied with, in that a postevaluation survey was completed. But the benchmark surveys were only partially completed, and a BME program was not implemented as required for monitoring overall project implementation and for evaluating project benefits. Timely recruitment of a BME consultant was initiated, but recruitment was canceled because of a change in government in 1993. As a result, at the ADB Midterm Review, it was decided that the Government would finance BME consultants. But this reduced the funding available for the BME. Subsequently, an ADB Review Mission agreed that the Government draft revised terms of reference for the BME, in view of the time elapsed since the Project began. The BME consultants prepared an interim evaluation report in November 1997, which did not identify measurable indicators as required, and was constrained by the lack of benchmark surveys. The BME consultants have not yet prepared a post-evaluation report, which was required within 1 year of project completion. The BME process has not been institutionalized.

## H. Related Technical Assistance

34. A TA attached to the loan was approved to help the Government formulate and implement its cost recovery and management policy for the fishery harbors.<sup>8</sup> The TA supported institutional capacity building of CFHC, one of the project implementing agencies. The scope of the TA was to (i) review current policies and practices regarding user charges, and examine the feasibility of introducing a system of user charges for access to marine resources and landing facilities; (ii) design and implement a pilot scheme in selected locations, if user charges appear financially and organizationally feasible; and (iii) train local personnel in methodologies for planning and managing modern fisheries harbors, in fisheries quality control, and in pollution control.

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<sup>8</sup> ADB. 1992. *Technical Assistance to Sri Lanka for Rationalization of Fishery Harbor and Other Charges*. Manila.

35. The TA was in two phases and was successfully completed with submission of the final report in March 1998. Harbor managers have been recruited for six harbors, and training was completed under the TA. User charges have so far been introduced at five harbors. The Government has not yet introduced charges at other harbors, pending completion of shore facilities. The TA was completed ahead of project completion, because of implementation delays. As a result, the Government seems to have lost sight of the TA outputs and recommendations that were to be implemented within 1 year of TA completion. Nevertheless, the TA design was relevant to the reforms being implemented.

36. Of the 12 main TA recommendations 8 were to be implemented by CFHC. These were partially implemented. Harbors have not yet been devolved responsibility as autonomous self-accounting management units; a plan should be developed to implement this recommendation over an extended period. The recommendations to increase harbor charges through annual user fees, and to continuously review access (gate pass) fees and service provider charges, have not been fully implemented. User fees, levied monthly, have been revised, but the revisions have not yet been implemented. Nor has CFHC prepared a schedule for their implementation. CFHC also observed that harbor managers lack the technical capacity to implement recommendations on monthly assessment of siltation, and direct supervision of dredging operations. These activities are managed centrally, with assistance from the harbor managers. DOF confirmed that the recommendation on vessel inspection at the time of annual registration has been implemented, but could not confirm implementation of the standards that the TA recommended. NARA has implemented the recommended sampling and recording of fish landings. NARA has also held three workshops to inform fishers of the outcome of the tuna fisheries survey and the potential for longline fishing. The recommendation regarding follow-up action on the workshops is yet to be implemented. Appendix 5 is the TA completion report.

#### **I. Consultant Recruitment and Procurement**

37. The Project engaged international and domestic consultants in accordance with ADB's *Guidelines on the Use of Consultants*. The consultants were recruited to (i) assist in project implementation (financed by the Project), and (ii) advise on the rationalization of fishery harbor fees and other charges (financed by an associated TA on a grant basis). Sixty-two international and 318 domestic person-months were estimated for project implementation at appraisal; actual utilization was 62 international and 368 domestic person-months. The TA financed 15 person-months of international and 24 person-months of domestic consultants.

38. To avoid duplication and overlap, two proposed 10 person-month positions for international consultants—a coastal geomorphologist and a physical oceanographer—were combined into one 12-month position of coastal processes expert. There were delays in recruiting two key consultants: a port design and engineering consultant (19 months) and a coastal processes expert (23 months). The stock assessment specialist did not perform to requirements, so was replaced after 12 months. The domestic position of fisheries economist was advertised twice, but no suitable candidate was found. In addition to the domestic consulting services, the Project provided for engagement of a local engineering consulting firm to supervise construction of harbor and anchorage subprojects, equivalent to 360 person-months. Tenders were invited, but the prices quoted exceeded the budgeted amount by 100%. With ADB's concurrence, individual consultants were recruited, rather than engaging a firm, to supervise construction. The recruitment procedure for the BME consultants was not acceptable to ADB, so the Government financed these consultants with no change in the scope of work. But the work scope was subsequently modified, with ADB's concurrence.

39. Goods and services under the Project were procured in accordance with the procedures set out in the Loan Agreement. Civil works such as breakwaters were carried out by prequalified contractors selected through local competitive bidding procedures that were satisfactory to ADB. International shopping procedures were used to contract dredging, the charter of a resource survey vessel and experts to run it, as well as vehicles, equipment, and materials.

#### **J. Performance of Consultants, Contractors, and Suppliers**

40. International and domestic consultants provided necessary assistance in project implementation with one exception: the BME specialists. This was mainly because of recruitment delays that were beyond the EA's control. The consultants appointed as BME specialists by the Ministry of Plan Implementation partially fulfilled the terms of reference (para. 33). The Government expressed a need for an effective system to evaluate consultants' performance during implementation, and for timely replacement for poor performance. Recommendations of the financial management consultants, who were appointed in mid-1996, could not be fully implemented. The contractors for coastal engineering and construction of harbors and anchorages performed according to requirements. Some constraints were noted in the capacity of local contractors, which may have contributed to delays in completion of works.

#### **K. Performance of the Borrower and the Executing Agency**

41. The Ministry of Fisheries and Aquatic Resources (MFAR)<sup>9</sup> was the EA for the Project, responsible for overall coordination and execution, through the PMO. The EA's overall performance was satisfactory, but a major weakness was its failure to implement benchmark surveys, as per project design. Consequently, quantitative analysis of project benefits has been limited.

#### **L. Performance of ADB**

42. ADB's performance was satisfactory, with at least one review mission fielded yearly to monitor, supervise, and administer the Project. The Government observed that supervision in the early years of project implementation was not intensive, but that supervision received more attention after the December 1995 Midterm Review. The Government also noted that a more thorough review at that time could have helped improve the progress in loan utilization and implementation. There were no significant delays by ADB in granting concurrence to subprojects. The PMO encountered no problems in following ADB guidelines and procedures.

### **III. EVALUATION OF PERFORMANCE**

#### **A. Relevance**

43. The Project is rated as highly relevant in its consistency with the Government's development objectives for the fisheries sector. Project objectives remained relevant throughout implementation, and were validated at the Midterm Review. The Project contributed to improvement in sector performance (para. 44). Its objectives were also consistent with ADB's Fisheries' Policy of 1997, but the need for a more participatory approach in project design was not recognized in 1990, at project formulation.

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<sup>9</sup> Now known as Ministry of Fisheries and Ocean Resources.

## **B. Efficacy in Achievement of Purpose**

44. The Project was efficacious. It met its objective of enabling fishing fleets to increase fishing efforts and improve economic efficiency by providing proper harbor infrastructure. The fisheries sector's contribution to GDP rose from SLRs7,567 million in 1991 to SLRs22,960 million in 1999. The offshore and deep-sea catches increased significantly, from about 15,000 tons at appraisal to 87,000 tons (provisional) in 2001. The share of fish production in the project area rose from 32% in 1991 to 48% in 2001. Stretches of coastline in the project area have been protected from erosion, thus saving land, houses, and infrastructure such as roads and railways. Village amenities and microcredit provided under the Project have improved village environments and income generation from nonfishing activities for fishers. A survey carried out for the Government's PCR found that the average monthly income of fishers in the project area ranged from SLRs3,000 to SLRs10,000 per month, with about 65% of the sample earning more than SLRs5,000. This compares favorably with results of a 1989 survey in selected districts of the project area, which found that about 45% of the sample earned less than SLRs2,400 per month. The Government's PCR also estimated that direct employment in the fisheries sector had increased by about 30,000 jobs over the project duration. Fourteen PCIs were involved in credit disbursement activities. A certification system ensured that the beneficiaries belonged to the fishing community. After a slow start in 1995, the demand for loans picked up in 1997 and 1998 and the allocated funds were quickly exhausted. The commitments exceeded allocated funds, and other sources were used for additional credit requirements. Research and surveys have provided the basis for effective planning and management of fishery resources (para. 19). Workshops have enabled target beneficiary groups, through greater awareness and knowledge, to utilize opportunities for economic benefits. The project objectives in policy and institutional reforms were not fully met, because some related loan covenants were only partly accomplished.

## **C. Efficiency in Achievement of Outputs and Purpose**

45. The Project was partly efficient. The harbors and anchorages subprojects were delayed by about 20 months. At appraisal, economic and financial evaluations were carried out for fishery harbor and anchorage subprojects; economic evaluations were conducted for coastal protection works; and financial evaluation was conducted for a multiday fishing vessel. No data were available to reassess the coastal conservation subprojects. DOF provided provisional data for reevaluating the internal rates of return for a multiday fishing vessel and for Beruwala harbor. An indicative reevaluation was done, based on those data (Appendix 6).

46. The FIRR for a multiday boat operating out of the project rehabilitated harbors has been reassessed at 31% versus an appraisal estimate of 28%. At appraisal, the total fishing months was expected to increase from 6 to 8 per year. The assumption now, however, is that fishing can be a year-round activity in these harbors, and 11 fishing months a year are assumed. The FIRR drops to 12% on the assumption of 8 months' operation per year.

47. Assessment of the EIRR for Beruwala harbor, following the same methodology as at appraisal, is 22% versus 20% estimated at appraisal. At appraisal it was assumed that benefits will accrue from year 5, and the harbor will be operational for 8 months a year. The EIRR was sensitive to delays in benefits accrual. The harbor rehabilitation was delayed, and benefits accrued from year 8, with 11 months' operation. This increase in fishing days has contributed to an improved EIRR. The EIRR drops to 15% if benefits decrease by 10%. Reduction in fishing days by 1 month leads to an EIRR of 16%.

48. At appraisal, harbor charges were assumed to be levied at 10% of the value of landed fish. This was not implemented. Therefore, FIRR for Beruwala harbor has not been recalculated. Annual berthing charges, access charges, and other service fees are being recovered. These contribute to meeting harbor operating costs.

#### **D. Preliminary Assessment of Sustainability**

49. The Project is likely to be sustainable. Two of the six harbors that were built or rehabilitated under the Project have introduced user charges, based on boat size, access, and use of facilities. At Beruwala, these charges are sufficient to meet operating expenses, but will not likely cover maintenance dredging costs. Certain facilities, such as cold storage and the ice plant, are leased to private parties, at low rates on long lease. Some facilities built through the social infrastructure subprojects cannot be sustained without providing adequate maintenance funds (para. 15). The Project did not establish a revolving fund for the credit component, so this facility could not be sustained beyond the project period.

#### **E. Environmental, Sociocultural, and Other Impacts**

50. The Project contributed positively to the Government's efforts to develop, conserve, and protect its coastal districts through selected infrastructure and conservation measures. These, together with training and awareness programs, have helped institutionalize more systematic methods of resolving conflicts over coastal uses, as well as loss and degradation of coastal and environmental resources. Also, the Project fostered sustainable development of Sri Lanka's coastal, offshore, and deep sea fisheries through a fish resource assessment survey and exploratory fishing in coastal and offshore waters to provide data as a basis for more rational exploitation of fisheries resources. Environmental assessments were an integral element of Part A of the Project, and ensured that adverse impacts of infrastructure developments were minimized and mitigated.

51. The Project included rehabilitation of both economic and social infrastructure. The provision of basic amenities and credit support improved the quality of life of fishing communities in the project area. Credit disbursements under the Project financed 1,276 loans for a variety of enterprises. These loans, accompanied by social mobilization, skills training, and awareness creation, helped the borrowers engage in largely nonfishery-related activities to generate additional income. More than 50% of the loans were used by the lower income segments for microenterprises. The Government estimated that incremental incomes resulting from the availability of credit ranged from SLRs1,000 to SLRs12,000 per month. The project design also incorporated measures to benefit women in the project area, through microcredit and by including women as social mobilizers. Women comprised about 36% (465 versus 17,000 anticipated) of the sub-borrowers under the credit component, although few women from the project area could be recruited as social mobilizers. Loan recovery was reported to be almost 99% of the total loan amounts (Appendix 1).

52. Institutional development, an important project objective, was addressed through Part C of the Project and associated TA. The TA supported institutional development of CFHC and NARA, but its recommendations have not yet been fully implemented, partly because of delays in completing infrastructure constructed under the Project. Also, loan covenants relating to reorientation of CFC activities could not be fully complied with (para. 33). Thus, this project objective's achievements are rated as modest.

## **IV. OVERALL ASSESSMENT AND RECOMMENDATIONS**

### **A. Overall Assessment**

53. Overall, the Project substantially achieved its objectives (para. 3) and is rated as partly successful. The Project was highly relevant, efficacious, and partly efficient. Project sustainability is likely, but institutional development and other impacts were modest.

### **B. Lessons Learned**

54. Lessons learned from project implementation include the following.

- (i) One reason for the delay in implementing harbor and anchorage subprojects was the appointment of a single local consulting firm to conduct the coastal engineering studies (para. 26). During project preparation and at appraisal, local capacity should be realistically assessed before fixing the procurement mode (which, in this case, was local competitive bidding). Alternatively, recognizing the limitations in local capacity, implementation schedules should be more realistic.
- (ii) The Panadura site was initially rejected on technical grounds, but was later included in the Project in response to local fishers' demands, as well as demands from fishers in Mutwal harbor who were expected to be displaced because of the proposed expansion of Colombo port. The planned expansion did not take place, and, without further investment to make it an all-weather harbor, Panadura harbor is not considered an attractive alternative to other nearby harbors. The BME interim evaluation noted that the site was not suitable technically, and that political considerations played a major role in the site selection. Although subproject selection is demand-driven, technical and financial or economic viability should be the overriding consideration in investment decisions. Also, an adequate analysis should be made of risks and the robustness of assumptions (para. 10).
- (iii) Some facilities built through the social infrastructure subproject are not maintained well, because funding is inadequate. To ensure the sustainability of such assets, beneficiary consultation should include (a) providing awareness to the beneficiaries of the need for periodic maintenance, and (b) obtaining the user community's commitment to the funding of operating and maintenance (O&M) costs. Selection and design of such facilities should be within the communities' capacities.
- (iv) The financial management consultants were appointed in mid-1996—almost 38 months into the Project. The systems that the consultants recommended were not implemented properly. Project data were not readily available. Data retrieval took time and effort, and was often incomplete. Project information systems should be set up within 6 months of implementation for efficient recording and dissemination of basic information.

### **C. Recommendations**

#### **1. Project-Related**

55. The following recommendations are made for the Government (and specifically the Ministry of Fisheries and Ocean Resources) to maximize project benefits:

- (i) Efforts to disengage government agencies from commercial activities and to reorient their functions to be regulatory and service-oriented should continue by encouraging greater ongoing private sector participation.
- (ii) CFHC should implement harbor charges, and management should be implemented at all harbors as recommended in TA 1795-SRI: *Rationalization of Fishery Harbor and Other Charges*. Assets should be leased to the private sector at market rates, and existing lease arrangements should be reviewed and revised in this context. The Government should draw up a time-bound action plan to implement the rationalization of harbor charges as recommended for each harbor, as the infrastructure is completed. The harbor committees should help mobilize and create public awareness among users, to implement the charges within 12 months.
- (iii) Drawing on project research outputs, NARA should develop, within 6 months, programs to continuously update and disseminate information on the marine resource base, and information used for resource management.
- (iv) Initiatives should be taken to enable village communities to raise resources to operate and maintain structures and facilities, supported by continuous programs of social mobilization and awareness.

## **2. General**

56. The institutional capacities of executing and implementing agencies, and of local contractors, should be assessed more carefully at appraisal in the design of future projects. For example, the design of the resource assessment surveys apparently failed to consider the capacity of the implementing agencies to continue these activities after the project interventions (para. 19). Similarly, the fact that only one local contractor could qualify for coastal engineering studies delayed implementation significantly (para. 26). Such factors should be assessed at appraisal, and reflected in project design.

57. For the EA to use consultants effectively, the project design should also consider incorporating a system to evaluate consultant performance during implementation, and timely replacement if performance is poor (para. 40).



## COMPARISON OF WORKS PROPOSED AT APPRAISAL WITH ACTUAL WORKS EXECUTED

### Part A: Individual Harbor and Anchorage Rehabilitation Subprojects

1. The rehabilitation of individual harbor and anchorage subprojects was necessary because systematic coastal engineering studies were not carried out during construction of most of the fishery harbors and anchorages, and the facilities suffered from lack of proper maintenance. The proposed project outputs, and the actual performances, follow.

Proposed Project Outputs	Actual Project Performance
Detailed coastal engineering study at the existing fishery harbor at Puranawella, followed by rehabilitation work	<p>Detailed coastal engineering study and initial environmental examination were carried out for Puranawella harbor, followed by construction and rehabilitation works. These works included: secondary breakwater, 290 m; extension to the main breakwater, 80 m; rehabilitation of the existing breakwater, 325 m; and quay wall, 161 m. Dredging was carried out and shore facilities were constructed. Shore facilities included an auction shed, net mending shed, and landscaping. Further development of shore facilities is provided under the Coastal Resource Management Project (CRMP).</p> <p>The harbor now has a capacity of 320 multiday boats versus 152 before rehabilitation.</p>
Detailed coastal engineering studies at the existing fishery anchorages at Negombo and Chilaw, followed by rehabilitation work	<p>The Negombo subproject was dropped because of opposition by local inhabitants.</p> <p>A coastal engineering study was conducted for Chilaw. Further development of the anchorage is provided under CRMP.</p>
Rehabilitation works at existing fishery harbors at Mirissa and Beruwala	<p>At Mirissa harbor: dredging, construction of quay walls, and repairs to the existing breakwater were carried out. Among shore facilities, a fish receiving station and net mending shed were constructed. Further development of shore facilities is provided under CRMP. The harbor has a capacity of 150 multiday boats versus 122 before rehabilitation.</p> <p>At Beruwala harbor: substantial dredging was carried out. The existing breakwater was rehabilitated to 110 m, and quay walls to 100 m, were constructed. Shore facilities constructed included a fish receiving station, surfacing of the parking area, lighting, and a net mending shed. The relocation of the canteen was provided under CRMP. The harbor now has a capacity of 350 multiday boats versus 246 before rehabilitation.</p>

Proposed Project Outputs	Actual Project Performance
<p>Preliminary coastal engineering studies at 10 smaller fishery anchorages at Ambalagonda, Hikkaduwa, Dodanduwa, Kapparatota, Gandara, Kottegoda, Kudawella, Panadura, Hambantota, and Dikowita.</p> <p>Depending on the outcome of the studies, further detailed studies and environmental impact assessments were to be carried out in as many as five fishery anchorages, followed by appropriate rehabilitation work.</p>	<p>After all sites were screened, coastal and port engineering studies and environmental assessments were carried out to develop the following three smaller anchorages into harbors: Panadura, Hikkaduwa, and Kudawella.</p> <p>At Panadura, the following were completed: dredging, soft material, 27,422 m<sup>3</sup> and hard material, 546 m<sup>3</sup>; rehabilitation of existing breakwater, 160 m; construction of revetments, northern breakwater, 190 m, southern breakwater 42 m, groyne 50 m, quay wall 50 m, and retaining wall 45 m. Shore facilities constructed were a net mending shed, auction hall, administration building, harbor road, and parking area. The harbor requires further investments in marine structures to become operational. The harbor has been built to accommodate 70 multiday boats, compared to a nominal 5 multiday boats using the previous anchorage.</p> <p>At Hikkaduwa, the following were completed: dredging, soft material 60,013 m<sup>3</sup> and hard material 14.565 m<sup>3</sup>), rehabilitation of existing breakwater 328 m, and construction of northern breakwater 335 m, outer breakwater 140m, inner breakwater 43m, revetments, groyne 65m, quay walls 80m and 55 m, were completed. Shore facilities constructed were internal roads, public toilets, lighting and auction shed. A fish effluent treatment facility is provided under CRMP. The harbor has a capacity of 220 multiday boats, against 12 before construction.</p> <p>At Kudawella, dredging (soft material 95,272 m<sup>3</sup> and hard material 24.83 m<sup>3</sup>), construction of breakwaters 655 m, groyne 108 m, quay wall 200 m and revetments were completed. Shore facilities constructed were internal roads, drainage and administrative building. Extension of shore facilities including fish receiving station, net mending shed, canteen, lighting, fish effluent treatment facility and public toilets are provided under CRMP. The harbor has a capacity of 375 multiday boats, compared with 140 before construction.</p>
<p>Detailed coastal engineering study at the existing fishery harbor at Puranawella followed by rehabilitation work</p>	<p>Detailed coastal engineering study and initial environmental examination were carried out for Puranawella harbor followed by construction and rehabilitation work. These included secondary breakwater 290 m; extension to main breakwater 80m; rehabilitation of existing breakwater 325 m and quay</p>

Proposed Project Outputs	Actual Project Performance
	<p>wall 161 m. Dredging was carried out and shore facilities were constructed. Shore facilities included an auction shed, net mending shed and landscaping. Further development of shore facilities is provided under CRMP.</p> <p>The harbor has a capacity of 320 multiday boats, as against 152 before rehabilitation.</p>
<p>Detailed coastal engineering studies at the existing fishery anchorages at Negombo and Chilaw followed by rehabilitation work</p>	<p>Negombo subproject was dropped in the face of opposition of the local inhabitants.</p> <p>Coastal engineering study was carried out for Chilaw. Further development of the anchorage is provided under CRMP.</p>
<p>Rehabilitation works at existing fishery harbors at Mirissa and Beruwala</p>	<p>At Mirissa harbor, dredging, construction of quay wall and repairs to the existing breakwater were carried out. Among shore facilities, fish receiving station and net mending shed were constructed. Further development of shore facilities is provided under CRMP. The harbor has a capacity of 150 multiday boats, compared to 122 before rehabilitation.</p> <p>At Beruwala harbor, substantial dredging was carried out. The existing breakwater was rehabilitated and quay walls—110 m and 100 m respectively—were constructed. Among shore facilities, fish receiving station, surfacing of parking area, lighting and net mending shed were constructed. The relocation of canteen is provided under CRMP. The harbor has a capacity of 350 multiday boats, as against 246 before rehabilitation.</p>
<p>Preliminary coastal engineering studies at 10 smaller fishery anchorages at Ambalagonda, Hikkaduwa, Dodanduwa, Kapparatota, Gandara, Kottegoda, Kudawella, Panadura, Hambantota and Dikowita.</p> <p>Depending on the outcome of the studies, further detailed studies and environmental impact assessments were to be carried out in up to 5 fishery anchorages followed by appropriate rehabilitation work.</p>	<p>After necessary screening of the sites, coastal and port engineering studies and environmental assessments were carried out to develop 3 smaller anchorages into harbors. These were Panadura, Hikkaduwa and Kudawella.</p> <p>At Panadura, dredging (soft material 27,422 m<sup>3</sup> and hard material 546.14 m<sup>3</sup>), rehabilitation of existing breakwater 160 m, and construction of revetments, northern breakwater 190 m, southern breakwater 42m, groyne 50 m, quay wall 50 m and retaining wall 45 m were completed. Shore facilities constructed were net mending shed, auction hall, administration building, harbor road and parking area. The harbor requires further investments in marine structures to become operational. The harbor has been built to accommodate 70 multiday boats, compared to a nominal 5 using the anchorage earlier.</p>

Proposed Project Outputs	Actual Project Performance
	<p>At Hikkaduwa, dredging (soft material 60,013 m<sup>3</sup> and hard material 14.565 m<sup>3</sup>), rehabilitation of existing breakwater 328 m, and construction of northern breakwater 335 m, outer breakwater 140m, inner breakwater 43 m, revetments, groyne 65m, quay walls 80m and 55 m, were completed. Shore facilities constructed were internal roads, public toilets, lighting and auction shed. A fish effluent treatment facility is provided under CRMP. The harbor has a capacity of 220 multiday boats, against 12 before construction.</p> <p>At Kudawella, dredging (soft material 95,272 m<sup>3</sup> and hard material 24.83 m<sup>3</sup>), construction of breakwaters 655 m, groyne 108 m, quay wall 200 m and revetments were completed. Shore facilities constructed were internal roads, drainage and administrative building. Extension of shore facilities including fish receiving station, net mending shed, canteen, lighting, fish effluent treatment facility and public toilets are provided under CRMP. The harbor has a capacity of 375 multiday boats, compared to 140 before construction.</p>

Sources: ADB review missions, project performance reports.

## Part B: Fishing Community Development Subprojects

2. The subprojects were necessary to eliminate significant gaps in the social and economic infrastructures of selected fishing communities in the project area that were threatened by serious coastal erosion; inadequate basic amenities such as drinking water, sanitation and housing; and high levels of poverty. A comparison of the proposed and actual outputs follows.

Proposed Project Outputs	Actual Project Performance
Aerial surveys of the northwestern, western, and southern coasts during different seasons and five surveys to identify coastline trends	Aerial surveys were conducted in 1993 and 1994. Further work stopped because the Survey Department's aircraft broke down. The aerial photographs are being used for the Coastal Resource Management Project (CRMP).
Base mapping of about 44 km of coastline in the vicinity of Kandakuliya, Wellamankara, Paiyagala, Mirissa, Kottegoda, and Tangalle as record for future reference	Base mapping was completed of Paiyagala, 5 km; Wellamankara, 20 km; Tangalle, 6 km; and Mirissa, 5 km. Base maps were already available of Kandakuliya, 4 km; and Kottegoda, 6 km.
Pilot studies at six selected coastal sites to improve basic understanding of coastal erosion and accretion before undertaking coastal protection measures such as groynes, revetments, and sand bypassing systems. Such measures were	Kandakuliya, Ambakandawila, and Paiyagala were selected for coastal studies under the Project. Designs for coast conservation and protection works for Kottegoda, Edandawella, and Mirissa had already been prepared by the Coast Conservation Department (CCD).

Proposed Project Outputs	Actual Project Performance
<p>expected to save a large number of fishing communities, village houses, and other structures from coastal erosion.</p>	<p>At Kandakuliya, a sand nourishment program and construction of three groynes were completed.            At Ambakandawila, four groynes were completed.            At Paiyagala, two revetments, 350 m and 400 m in length, were constructed.            At Kottegoda, a revetment 790 m in length was constructed.            At Edandawella, a 290 m revetment was constructed.            At Mirissa, a 270 m revetment was constructed.</p> <p>The coastal protection works saved infrastructure such as highways, railroads, land, and houses from erosion.</p>
<p>Provide cost inputs (other than labor) and material needed to build facilities to improve the village environment. Organized village groups in 60 fishing communities in the project area were to identify the facilities, such as rural access roads, culverts, drinking water facilities, latrines, health facilities, education facilities, and storage facilities.</p>	<p>The fishing villages in the project area were divided into 63 clusters that included 383 villages spread over 7 districts. They identified, through beneficiary participation, 835 facilities that were constructed.</p> <p>The breakdown of facilities by type is:            access roads, drains, culverts: 302;            electricity supply: 173;            water supply: 92;            community centers: 89;            schools, libraries, mini labs, playgrounds: 84;            toilets: 37;            others: 58.</p> <p>On completion, the facilities were handed over to village organizations. Financial constraints have been reported to have adversely affected maintenance of some facilities.</p>
<p>Provide training and credit to help poor fishers in the Project area diversify into onshore activities that generate income and self-employment. The subproject would particularly benefit women.</p>	<p>The National Development Bank of Sri Lanka (NDB) was the lead institution for the credit. Fourteen participating credit institutions (PCIs) , including NDB, participated in the distribution of credit in the project area. The 1,276 loans disbursed totaled SLRs153.3 million.</p> <p>The loans were provided on commercial terms: at 16% interest to the sub-borrower and 8% interest to the PCI. NDB refinanced 90% of the loans disbursed by the PCIs to the sub-borrowers. At the time of the project completion review, recovery by NDB was SLRs151.5 million. Up-to-date information on PCI recovery from sub-borrowers was not available.</p> <p>The loan sizes ranged from SLRs1,800 to SLRs3.6 million. About 75 project types were supported, including boat manufacture; prawn culture; transportation; trading; fish, meat, and food processing; services; animal husbandry; garments,</p>

Proposed Project Outputs	Actual Project Performance
	<p>toddy tapping; petroleum products; metal products; catering; light engineering; tobacco products; construction; chemicals; and paper.</p> <p>Nonfishery-based enterprises accounted for 927 of the loans, and undertaking new schemes, 461. There were 465 female borrowers. The subproject generated 1,590 jobs.</p>
<p>Aerial surveys of the northwestern, western and southern coasts during different seasons and on 5 separate occasions to identify coastline trends.</p>	<p>Aerial surveys were carried out on 2 separate occasions in 1993 and 1994. Further work stopped due to breakdown of survey department's aircraft. The aerial photographs are being used for CRMP.</p>
<p>Base mapping of about 44 km of coastline in the vicinity of Kandakuliya, Wellamankara, Paiyagala, Mirissa, Kottegoda and Tangalle as record for future reference.</p>	<p>Base mapping of Paiyagala 5 km, Wellamankara 20 km, Tangalle 6 km and Mirissa 5 km were completed under the Project. Base maps of Kandakuliya 4 km and Kottegoda 6 km were already available.</p>
<p>Pilot studies at 6 selected coastal sites to improve the basic understanding of the process of coastal erosion and accretion prior to undertaking coastal protection measures such as groynes, revetments, sand bypassing systems etc. Such measures were expected to save a large number of fishing communities, village houses and other structures from coastal erosion.</p>	<p>Kandakuliya, Ambakandawila and Paiyagala were selected for coastal studies under the Project while designs for coast conservation and protection works for Kottegoda, Edandawella and Mirissa were already prepared by CCD.</p> <p>At Kandakuliya, a sand nourishment program and construction of 3 groynes were completed. At Ambakandawila, 4 groynes were completed. At Paiyagala, 2 revetments of 350 meters (m) and 400 meters in length were constructed. At Kottegoda, a revetment of 790 m in length was constructed. At Edandawella, a 290 m long revetment was constructed. At Mirissa, a 270 m long revetment was constructed.</p> <p>As a result of the coastal protection works infrastructure including highways, railroads, land and houses were saved from erosion.</p>
<p>Provide cost inputs (other than labor) and material needed to construct facilities for improving village environment. The facilities such as rural access roads, culverts, drinking water facilities, latrines, health and education facilities, storage facilities etc were to be identified by organized village groups in 60 fishing communities in the Project area.</p>	<p>The fishing villages in the project area were divided into 63 clusters covering 383 villages spread over 7 districts. 835 facilities were constructed that were identified through beneficiary participation.</p> <p>The breakdown of facilities by type is as follows:  Access roads/drains/culverts – 302  Electricity supply – 173  Water supply – 92  Community centers – 89</p>

Proposed Project Outputs	Actual Project Performance
	<p>Schools/ libraries/ mini labs/ playgrounds – 84 Toilets – 37 Others – 58</p> <p>On completion, the facilities were handed over to village organizations. Maintenance of some of the facilities is reportedly adversely affected by financial constraints.</p>
<p>Provide training and credit to help the poor fisher folk in the Project area to diversify into income/self-employment generating on-shore activities. The subproject would particularly benefit women and generate employment.</p>	<p>NDB acted as the apex institution for the credit. 14 participating credit institutions (PCIs, including NDB) participated in the distribution of credit in the project area. The number of loans disbursed was 1,276 totaling SLRs153.3 million.</p> <p>The loans were provided on commercial terms – at 16% interest to the subborrower and at 8% interest to the PCI. NDB refinanced 90% of the loans disbursed by the PCIs to the subborrowers. At the time of the project completion review, recovery by NDB was SLRs151.5 million. Up to date information on recovery by PCIs from subborrowers was not available.</p> <p>The loan size ranged from SLRs1,800 to SLRs3.6 million. Around 75 different project types were supported, including manufacture of boats, prawn culture, transportation, trading, fish/meat/food processing, services, animal husbandry, garments, toddy tapping, petroleum products, metal products, catering, light engineering, tobacco products, construction, chemicals, paper.</p> <p>Out of the total number of loans, 927 were for non-fishery based enterprises and 461 were for undertaking new schemes. There were 465 female borrowers and the subproject was able to generate 1,590 jobs.</p>

Sources: Asian Development Bank review missions, project performance reports.

### Part C: Research and Institutional Support

3. The Project proposed to establish a basis for the sustainable development of fishery resources, and provide institutional support for successful project implementation. The proposed outputs and support, and the actual performances follow.

Proposed Project Outputs	Actual Project Performance
<p>Charter of two specialized vessels for 2 years, with facilities and experts to carry out exploratory fishing and resource surveys of Sri Lanka's coastal and offshore fishery</p>	<p>Use of an international survey vessel proved to be too expensive for the Project. Instead, with concurrence of the Asian Development Bank (ADB), three local multiday vessels were chartered for 2 years to carry out the survey. The vessels were rigged for gillnetting</p>

Proposed Project Outputs	Actual Project Performance
<p>resources. The purpose would be to provide a basis for more systematic exploitation and monitoring.</p>	<p>and tuna longlining, but were too small to accommodate the array of equipment for the full range of studies envisaged.</p> <p>The survey recorded more than 1,032 fishing days during 1995–1997. Two workshops were held for officials and fishers to discuss the survey results. The subproject yielded useful information, but there was no further followup or validation of data.</p> <p>Fishing log books, introduced during the subproject as a collaborative effort, have been discontinued.</p>
<p>Provision for international and local consultant services to assist in the implementation of subprojects, benefit monitoring and evaluation (BME), and project management</p> <p>The following 62 person-months of international consultant services were proposed:</p> <ul style="list-style-type: none"> <li>(i) ports management engineer (30 mo.),</li> <li>(ii) physical oceanographer (10 mo.),</li> <li>(iii) coastal geomorphologist (10 mo.), and</li> <li>(iv) stock management specialist (12 mo.).</li> </ul> <p>In addition, the following 318 person-months of local consultant services were proposed:</p> <ul style="list-style-type: none"> <li>(i) project director (72 mo.),</li> <li>(ii) ports consulting engineers (48 mo.),</li> <li>(iii) resource survey specialist (36 mo.),</li> <li>(iv) resource survey biologist (36 mo.),</li> <li>(v) research advisor (24 mo.),</li> <li>(vi) fishing technology adviser (24 mo.)</li> <li>(vii) economist (12 mo.),</li> <li>(viii) financial management consultants (24 mo.),</li> <li>(ix) sociologist/micro credit specialist (12 mo.), and</li> <li>(x) BME specialist (30 mo.).</li> </ul>	<p>The Project used services of foreign and local consultants as envisaged, with a few exceptions or variations.</p> <p>In foreign consultant services, a coastal processes expert was appointed to fill the combined requirements of physical oceanographer and coastal geomorphologist positions. Thus, rather than using the 20 person-months envisaged, a new position for 12 person-months was created and utilized.</p> <p>The local consultant position of economist could not be filled because no suitable person could be found.</p> <p>The BME program was not fully implemented per project requirements. A contract was awarded to the Ministry of Plan Implementation in 1997 to carry out a midterm evaluation, which was completed in April 1998. The contract covered post-implementation evaluation, which is yet to be taken up. The Government funded this component.</p> <p>The delay in appointment of financial management consultants affected maintenance of the project management information.</p> <p>Because of cost constraints, individual consultants—rather than a firm, as planned at appraisal—supervised construction in the harbor and anchorage subprojects. The supervision team comprised one senior engineer (two were hired, but one left) and four junior engineers</p>



Proposed Project Outputs	Actual Project Performance
<p>Another 360 person-months of local engineering consulting firm services to supervise construction of harbor and anchorage subprojects were proposed.</p> <p>The provision for overseas and local training was:</p> <p><i>38 person-months of overseas training for</i></p> <ul style="list-style-type: none"> <li>(i) CFHC on port management/ engineering (6 mo.),</li> <li>(ii) CCD on coastal environment/ economics (6 mo.),</li> <li>(iii) fisheries cooperative societies on cooperative organization and management (10 mo.),</li> <li>(iv) project staff on environmental impact assessments and consultations (CFHC, DOF, PMO) (10 mo.), and</li> <li>(v) DOF, NIFT on rural industry, methodology, and practice (6 mo.).</li> </ul> <p><i>474 person-months of local training for</i></p> <ul style="list-style-type: none"> <li>(i) fisheries cooperative societies for cooperative group formation, financial management, and nonfisheries activities (78 mo.),</li> <li>(ii) fishers, skippers, and crew on deep sea multiday fishing skills (300 mo.),</li> <li>(iii) village-level NGOs on social mobilization (20 mo.), and</li> <li>(iv) district extension officers on data collection and processing; and fishing technology, extension, and monitoring (76 mo.).</li> </ul>	<p>of Ceylon Fishery Harbor Corporation (CFHC). This arrangement was partly successful.</p> <p>Training was held in accordance with the training program indicated at appraisal, and was judged useful.</p> <p>The completed foreign training programs covered training methods, environmental impact assessment, coastal environment and economics, coastal zone management, management and maintenance of fishery harbors, gear and fishing technology, micro credit, and financial management. The relevant executing and implementing agencies participated in the training programs for a cumulative 33 person-months. The countries were US, UK, Netherlands, Australia, Philippines, Thailand, Malaysia, Singapore, Vietnam, India, and Bangladesh. These programs included a study tour on harbor management for harbor managers, fishers, etc. (21 persons, 1 week duration) in Vietnam, as well as a visit to ICLARM (2 persons, 1 mo. duration) in the Philippines.</p> <p>Many local training programs were held in accordance with the training program. The total person-months of training could not be determined because the data were lacking.</p> <p>More than 3,100 local training programs were held. The completed local training programs for the credit subproject at the divisional secretariat level follow:</p> <ul style="list-style-type: none"> <li>(i) 73 programs for district extension office staff, representatives of fisheries cooperative societies, PCI staff and officers, and those involved in project implementation;</li> <li>(ii) 779 programs for village level awareness;</li> <li>(iii) 5 programs on entrepreneurship development; and</li> <li>(iv) 5 staff training programs on project management, entrepreneurship and social mobilization.</li> </ul> <p>Other local training included:</p> <ul style="list-style-type: none"> <li>(i) 145 programs on cooperative society management for cooperative societies;</li> <li>(ii) 230 programs on multiday fishing craft for fishers and skippers;</li> <li>(iii) 200 field activity orientation programs for field officials;</li> </ul>

Proposed Project Outputs	Actual Project Performance
	(iv) 1,290 programs for members of fishing households on income-generating activities, fund management, savings, and village development; (v) 140 programs for women; (vi) 192 technical programs on motorboat operations, engine technology, electronic equipment, management, diving, etc.; and (vii) (vii) 50 programs on ornamental fish breeding methods and brackishwater fish culture.
Provision for: (i) 50 motorcycles for field staff of DOF for the social infrastructure component; (ii) material and equipment for the training component; (iii) dedicated and competent staff to strengthen the PMO, including a project accountant, an administration/ procurement officer, and suitable support staff; (iv) vehicles, shore-based communication equipment, and various facilities for the project director, staff, and consultants.	The Project procured and utilized necessary equipment. DOF field staff used motorcycles for coordination of social infrastructure and credit subprojects. Training equipment was procured to strengthen NIFT.  The staff required for PMO (a project accountant and administration and procurement officer, and support staff) were appointed. Vehicles, equipment, and facilities that the PMO needed were procured and used.  A detailed inventory of items procured was maintained.

DOF = Department of Fisheries; ICLARM = International Center for Living Aquatic Resources Management; NGO = nongovernment organization; NIFT = National Institute of Fisheries Training; PCI = participating credit institution; PMO = project management office.

Sources: ADB review missions, project performance reports.

## ANNUAL DISBURSEMENT OF LOAN PROCEEDS BY COMPONENT (\$)

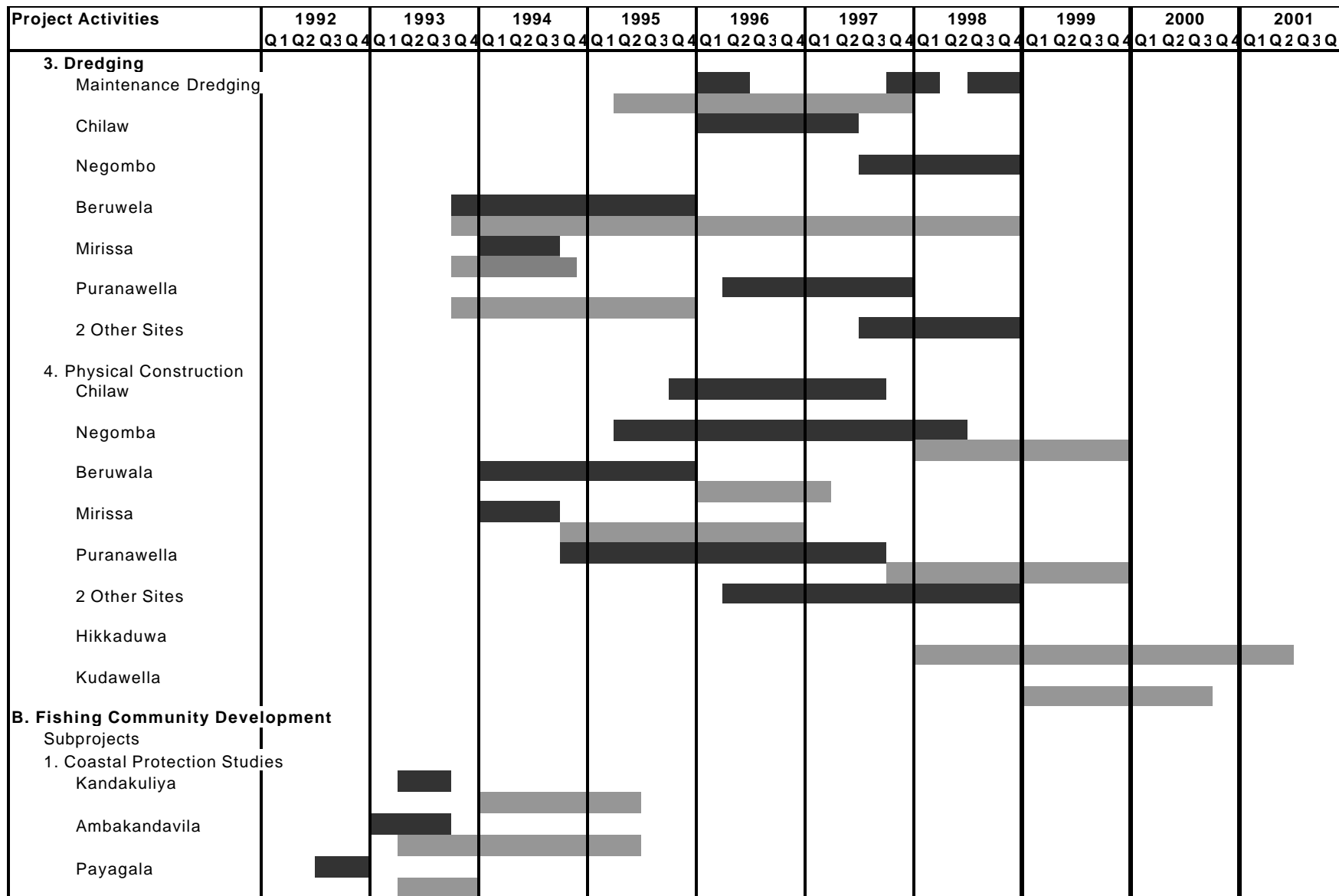
Loan Category	1993	1994	1995	1996	1997	1998	1999	2000	2001	Total
Harbors and Anchorages	811,826	1,879,261	2,677,571	1,564,005	2,534,772	2,420,905	1,900,027	1,330,075	219,226	15,337,668
Fishing Community Development		112,717	375,910	451,128	370,504	281,101	130,261	-	-	1,721,621
Vehicles, Materials and Equipment	225	331,931	174,438	132,737	168,102	4,947	20,946	3,675	-	837,001
Research and Surveys	-	-	19,553	325,225	251,878	28,214	-	-	-	624,870
Training	5,295	91,427	90,539	62,424	72,974	55,518	85,075	7,545	-	470,797
Consulting Services	94,866	355,482	809,190	482,738	737,960	248,711	120,016	23,586	7,634	2,880,183
Credit	-	-	-	597,235	1,416,434	502,433	69,867	-	-	2,585,969
Recurrent Costs	1,454	29,898	47,448	70,026	60,295	57,818	16,894	8,692	4,581	297,106
Local Currency Expenditures	339	5,720	4,993	9,877	8,874	5,365	1,502	805	538	38,013
Service Charge	-	13,797	41,643	78,216	110,191	147,882	195,480	-	-	587,209
Unallocated	-	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	<b>914,005</b>	<b>2,820,223</b>	<b>4,241,285</b>	<b>3,773,611</b>	<b>5,731,984</b>	<b>3,752,894</b>	<b>2,540,068</b>	<b>1,374,378</b>	<b>231,979</b>	<b>25,380,437</b>
<b>Actual (%)</b>	<b>4.0</b>	<b>11.0</b>	<b>17.0</b>	<b>15.0</b>	<b>22.5</b>	<b>15.0</b>	<b>10.0</b>	<b>5.4</b>	<b>0.9</b>	
<b>Appraisal (%)</b>	<b>7.0</b>	<b>14.7</b>	<b>18.6</b>	<b>25.3</b>	<b>19.3</b>	<b>15.2</b>				
<b>Cumulative (%)</b>										
<b>Actual</b>	<b>4.0</b>	<b>15.0</b>	<b>32.0</b>	<b>47.0</b>	<b>69.5</b>	<b>84.5</b>	<b>94.5</b>	<b>99.9</b>	<b>100.0</b>	
<b>Appraisal</b>	<b>7.0</b>	<b>21.7</b>	<b>40.3</b>	<b>65.6</b>	<b>94.8</b>	<b>100.0</b>				

Source: Asian Development Bank Project Completion Review Mission.

## IMPLEMENTATION SCHEDULE

Project Activities	1992				1993				1994				1995				1996				1997				1998				1999				2000				2001																															
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4																																
<b>A. Harbour &amp; Anchorage</b>																																																																				
<b>Rehabilitaion Subprojects</b>																																																																				
<b>1. Coastal Engineering</b>																																																																				
Chilaw																																																																				
Negombo																																																																				
Morawalla																																																																				
Puranawella																																																																				
10 Other Sites																																																																				
Dickowita																																																																				
Panadura																																																																				
Hikkaduwa																																																																				
Kudawella																																																																				
Mathematical Modelling																																																																				
<b>2. Construction Permit</b>																																																																				
Chilaw EIA																																																																				
Negombo EIA																																																																				
Beruwela IEE																																																																				
Mirissa IEE																																																																				
Puranawella IEE																																																																				
2 Other Sites EIA																																																																				
Hikkaduwa																																																																				
Panadura																																																																				
Kudawella																																																																				

EIA = environmental impact assessment, IEE = initial environmental examination.  
 Legend:  Appraisal  Actual



Legend:  Appraisal  Actual

Project Activities	1992				1993				1994				1995				1996				1997				1998				1999				2000				2001							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
<b>2. Coastal Protection Works</b>																																												
Kandakuliya																																												
Ambakandavila																																												
Payagala																																												
Mirissa																																												
Kottegoda																																												
Edandawella																																												
Payagala II																																												
<b>3. Aerial Surveys</b>																																												
<b>4. Base Mapping</b>																																												
Kandakuliya																																												
Wellamankara																																												
Payagala																																												
Mirissa																																												
Kottegoda																																												
Tangalle																																												
<b>5. Microcredit Support</b>																																												
Village																																												
Microcredit Support																																												

Legend:  Appraisal  Actual

Project Activities	1992				1993				1994				1995				1996				1997				1998				1999				2000				2001											
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4								
<b>C. Research and Institutional Reform</b>																																																
<b>1. Research and Surveys</b>																																																
Research Vessel									■				■				■				■																											
Stock Assessment Specialist					■				■				■				■																															
Resource Survey Specialist	■				■				■				■				■				■																											
Resource Survey Biologist	■				■				■				■				■				■																											
<b>2. Consultancy and Training</b>																																																
<b>Harbours and Anchorages</b>																																																
Ports Management Engineer	■				■				■				■				■				■				■				■				■				■				■				■			
Physical Oceanographer	■				■				■				■				■				■				■				■				■				■				■				■			
Coastal Geomorphologist	■				■				■				■				■				■				■				■				■				■				■				■			
Ports Consulting Engineer					■				■				■				■				■				■																							
Supervision Consultants					■				■				■				■				■				■				■				■				■				■				■			
<b>NARA</b>																																																
Research Advisor	■				■				■				■				■				■				■				■				■				■				■				■			
Fisheries Tech. Advisor	■				■				■				■				■				■				■				■				■				■				■				■			
<b>MFAR</b>																																																
BME Specialist					■				■				■				■				■				■				■				■				■				■				■			
<b>DOF</b>																																																
Microcredit Specialist					■				■				■				■				■				■				■				■				■				■				■			

BME = benefit monitoring and evaluation, DOF = Department of Fisheries, MFARD = Ministry of Fisheries and Aquatic Resources Development, NARA = National Aqua

Legend: ■ Appraisal    ■ Actual

Project Activities	1992				1993				1994				1995				1996				1997				1998				1999				2000				2001			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
<b>Foreign Training</b>																																								
Short Term Fellowship																																								
CFHC																																								
CCD																																								
EIA Studies																																								
Cooperatives																																								
Rural Industries																																								
<b>Local Training</b>																																								
Fishing Coop Members																																								
Fisherfolk																																								
NGOs																																								
Staff																																								
Extension Equipment																																								
<b>Project Management</b>																																								
Project Director																																								
Accountant																																								
Adm/ Procurement Officer																																								
Financial/ Management Specialist																																								
Economist																																								
Office Support Staff (10)																																								

BME = benefits monitoring and evaluation, EIA = environment impact assessment.

■ Appraisal    ■ Actual



## STATUS OF COMPLIANCE WITH LOAN COVENANTS

Reference	Covenant	Status
Section 4.05(a)	The Borrower will make arrangements satisfactory to the Asian Development Bank (ADB) for insurance of the Project facilities to such extent and against such risks and in such amounts as shall be consistent with sound practice.	Complied with
Section 4.05(b)	Without limiting the generality of the foregoing, the Borrower will insure, or cause to be insured, goods imported for the Project, and goods financed from the loan proceeds, against hazards incident to the acquisition, transportation, and delivery to the place of use or installation. Any indemnity for such insurance shall be payable in a currency freely usable to replace or repair such goods.	Complied with
Sec. 4.06 (b)	The Borrower shall (i) maintain, or cause Ministry of Fisheries and Aquatic Resources (MFAR) and each project implementing agency (PIA) to maintain separate accounts for their respective parts of the Project; (ii) have such accounts and related financial statements audited annually; (iii) send to ADB certified copies of audited accounts and financial statements, and the auditor's reports, in English, no later than 9 months after the end of each fiscal year. The Borrower shall also submit, in English, unaudited copies of such statements, audited copies of such accounts and financial statements, not later than 6 months after each fiscal year,	Complied with. Audited Financial Statements for FY1999 were submitted. Financial statements for FY2000 were also submitted.
Sec. 4.07 (b)	Furnish to ADB quarterly reports on the carrying out of the Project, and on the operation and management of Project facilities.	Complied with. The latest progress report that ADB received covered the first quarter of 2001.
Sec. 4.07 (c)	Promptly after physical completion of the Project, but no later than 3 months afterward, or such later date as agreed on, the Borrower shall prepare and furnish to ADB a report on the execution and initial operation of the Project, including its cost, the Borrower's performance of obligations under the Loan Agreement, and accomplishment of the loan's purposes.	Complied with
Sched. 6, para. 1	MFAR shall be the Executing Agency responsible for the Project's overall coordination and execution, and direct implementation through PMO of Part C (ii) of the Project.	Complied with
Sched. 6, para. 2	Before the effective date, MFAR shall establish a PMO and appoint a fulltime project director (PD) acceptable to ADB. The PD shall be a local consultant assisted by a project accountant, an administration/procurement office, and local support staff.	Complied with. The project director was recruited as a local consultant on 1 Jan 1993; the project accountant as contractual staff on 22 Jun 1993, and the

Reference	Covenant	Status
		administrative/ procurement officer as contractual staff on 1 Sep 1994. A new project director was appointed effective 1 January 1996.
Sched. 6, para. 4 (a)	Before the effective date, the Borrower shall invest PD with sufficient administrative and financial powers, including the authority to (i) participate in the selection of key PMO and PIA staff, (ii) shift staff of the PMO and PIAs, (iii) appoint officials at certain levels in PMO, and (iv) approve procurement and award of contract that do not exceed \$100,000 equivalent.	Complied with. PD was invested with these powers and authority by the contract dated 28 Sep 1993.
Sched. 6, para. 5	A project implementation unit (PIU) shall be established within each of the following PIAs under the overall guidance of the PMO:	PIUs were set up from February 1993, pending appointment of permanent PIU staff.
	<u>Part A:</u> CFHC headed on a fulltime basis by a project manager (PM) who shall be a qualified project engineer, with rank no lower than deputy director	The superintending engineer, CFHC, was appointed as project manager, PIU/CFHC.
	<u>Part B(i):</u> CCD headed by a fulltime PM who shall have a rank no lower than deputy director.	The senior engineer, CCD, was overseeing the Project, supported by CCD staff.
	<u>Part B(ii)(a):</u> DOF headed by a fulltime PM who shall have a rank no lower than deputy director.	The project manager was appointed, supported by DOF field staff.
	<u>Part B(ii)(b):</u> The existing Small and Medium Industry Unit in NSDBL shall function as PIU in collaboration with DOF.	Complied with
	<u>Part C:</u> NARA will be headed by a fulltime PM.	The project manager was appointed on 1 May 1995. Functions of NARA/PIU ceased with the completion of the Resources Survey.
Sched. 6, para. 5	The Borrower, in consultation with ADB, shall within 3 years of the effective date, undertake a comprehensive midterm review of the Project's design and implementation.	Complied with. A midterm review mission was fielded from 30 Nov to 15 Dec 1995.
Sched. 6, para. 6 & 7	Before the effective date, the Borrower shall establish a project coordinating committee (PCC) at the national level to (i) coordinate PIA activities, (ii) resolve policy issues that affect the Project, and; (iii) monitor project implementation. PCC shall meet quarterly, or as often as required.	Complied with. PCC was established in Dec 1992, and the membership enlarged as per provisions of the Loan Agreement in Jan 1993. Fifteen meetings were held.

Reference	Covenant	Status
Sched. 6, para. 8	MFAR shall establish, through a PMO, a subcommittee within the existing divisional coordination committee (DCC), chaired by an AGA at each concerned division or village level responsible in the area under its jurisdiction.	Complied with. DCCs were set up in Gampaha, Galle, Puttalam Matara, Hambantota, and Kalutara districts. DCCs held regular meetings (238 in all).
Sched. 6, para. 10 (a)	Ensure the active participation of beneficiaries in the project activities under Part B of the Project through appropriate social mobilization measures. Among other things, those measures shall include selecting and using social mobilizers.	Complied with. Thirty-three social mobilizers were appointed. A series of meetings has been held at divisional secretary and at national levels with beneficiaries and their representatives. Social mobilizers ceased to function in Jan 1999 with completion of the subproject.
Sched. 6, para. 10 (b)	Concerned PCIs of the credit subprojects shall encourage and motivate the selected social mobilizers, and institute suitable saving schemes among project beneficiaries.	Complied with. Prospective borrowers were trained with NDB participation. Fisheries officers were trained in credit aspects.
Sched. 6, para. 11	For each subproject under Parts A and B(i), the concerned PIA shall conduct a feasibility study, which shall include, among other things and where appropriate, a coastal engineering study and an environmental impact assessment study.	Complied with. Feasibility and coastal engineering studies were prepared for each subproject.
Sched. 6, para. 12	Except for subprojects mentioned in para. 13, approval of all harbor and anchorage subprojects under Part A, and the first five subprojects under Part B, shall be subject to ADB's concurrence. This is regardless of estimated cost, and includes any subproject estimated to cost more than \$0.5 million	Complied with
Sched. 6, para. 13	The following subprojects shall be implemented under Part A, a large dredging work at the existing Beruwala fishing port; and under Part B, coastal conservation and protection works at Kottegoda, Edandawella, and Mirissa.	Complied with
Sched. 6, para. 14	CFHC will undertake, or subcontract the undertaking to consultants, feasibility studies for each proposed harbor and anchorage subproject.	Complied with. Coastal engineering studies were completed at Dickowita Panadura, Hikkaduwa, and Kudawella.
Sched. 6, para. 15	PMO shall appraise each proposed harbor and anchorage subproject.	Complied with
Sched. 6, para. 16	MFAR and PMO shall be responsible, subject to the provisions of para. 12 of this schedule, for approval of the harbor and anchorage subprojects in accordance with criteria in para. 17.	Complied with

Reference	Covenant	Status
Sched. 6, para. 17	Except as ADB may otherwise agree, the final selection and approval of a harbor and anchorage subproject shall be based on the following criteria (i) The investment cost (including capital dredging) per subproject shall not exceed \$4 million equivalent; (ii) There shall be an adequate number of large boats (at least 28 feet, or 8.5 meters, long) that use, or will use, the harbors and anchorages to be included in a subproject either as a permanent base or a temporary base for migrant boats operating on a seasonal basis; (iii) The number of fishers, and the volume of fish catch and landings, shall be adequate to justify the rehabilitation or construction works under the subproject; (iv) Established private sector entrepreneurs, companies, fishery cooperatives, or village groups shall be identified at the subproject site that will contribute to part of the investment cost for the rehabilitation or construction works and/or part or all of its operation and maintenance costs after subproject completion; (v) Satisfactory coastal engineering and environmental impact assessment studies shall be completed, as well as subsequent estimates of investment and recurrent costs; (vi) The subproject shall have no or minimal adverse effects on natural ecosystems and the environment; and (vii) The subproject shall have an economic internal rate of return of at least 12%.	Complied with. These criteria are used in the appraisal of each facility. Capital costs of dredging the basic rehabilitation works and operating facilities such as quay walls have exceeded the criteria, but have been justified in cost-benefit assessments.
Sched. 6, para. 18	PMO will undertake appraisal for each fishing community development subproject	Complied with. PMO appraised projects based on agreed criteria.
Sched. 6, para. 19	PMO shall be responsible for approval of the fishing community development subprojects.	Complied with
Sched. 6, para. 20	DOF, through the PIU, shall be responsible for selecting, in consultation with CCD, the fishing community development subprojects.	Complied with
Sched. 6, para. 21	The fishing community development subprojects shall be initially implemented on a pilot basis, and adjusted or expanded as appropriate, depending on recommendation of the midterm review.	Complied with. ADB approved an increased ceiling for a cluster from SLRs900,000 to SLRs1,260,000.
Sched. 6, para. 22	Except as ADB may otherwise agree, the final selection and approval of a fishing community development subproject shall be made on the following criteria: (i) The site of the subproject shall be located within the project area; (ii) Priority will be given to subprojects where the villages to be benefited have a sizable population consisting primarily of fishers and lack one or more basic infrastructures; (iii) The subprojects shall provide rural access roads, drinking water facilities (mainly dug wells), latrines, health and education facilities, and other basic infrastructure facilities; (iv) Villages proposed for subprojects, or that will benefit from subprojects, shall	Complied with

Reference	Covenant	Status
Sched. 6, para. 23	<p>have adequate or potential organizational capability to carry out the subproject activities through indigenous groups organized by social mobilizers, NGOs, and fishery cooperatives; (v) Villagers at the subproject site, or who will benefit from the subproject, shall be willing to contribute labor or the equivalent wage cost on an equitable basis for the civil works to be constructed; (vi) Consideration will be given to those fishing communities where other project components, including coastal protection, conservation measures, and credit, are to be provided concurrently; and (vii) The subproject shall be environmentally sound.</p> <p>The Borrower shall, soon after the effective date, enter into an administrative agreement with the National Development Bank of Sri Lanka (NDB) to ensure efficient implementation of the credit subprojects by NDB and the PCIs acting as the PIAs, under the guidance and coordination of MFAR.</p>	Complied with
Sched. 6, para. 24	<p>NDB shall relend a portion of the loan proceeds to carry out Part B(ii) (b) of the Project to eligible PCIs selected in accordance with the criteria provided in para. 31 of Sched. 6 on the basis of PCI subsidiary loan agreements (SLA), incorporating terms and conditions acceptable to ADB. Except as the Borrower, ADB, and NDB shall otherwise agree, a PCI SLA shall include the following terms and conditions: (i) an interest rate of 8% per annum, and (ii) a repayment period as long as 10 years, including a grace period of no more than 2 years.</p>	Complied with. ADB approved the subsidiary loan agreement. The credit component was completed, and the respective banks handle recoveries.
Sched. 6, para. 25	<p>PCIs are to finance at least 10% of the total cost of each credit subproject from their own resources, and are to onlend the relevant loan proceeds as subloans to eligible sub-borrowers in accordance with the following terms and conditions: (i) The concerned PCI will set the annual interest rate based on market conditions, but it will be at least 16%; (ii) Each subloan exceeding SLRs500,000 will have a repayment period of no more than 10 years, including a grace period of no more than 2 years. The equity contribution by the sub-borrower will be at least 25% of the total subproject cost, and security will be reasonable and acceptable to the concerned PCI; and (iii) For each subloan of less than SLRs500,000, the repayment period will be no more than 5 years, including a grace period of no more than 1 year. The sub-borrower's equity contribution will be at least 10% of the total cost of the subproject. Security will be provided based on the sub-borrower's personal integrity, or a group system of security as determined by the concerned PCI.</p>	Complied with. All the provisions have been reflected in the subsidiary loan agreement, and NDB has issued operating instructions to PCIs.

Reference	Covenant	Status
Sched. 6, para. 26	The Borrower and ADB shall review the relending and onlending terms specified in para. 24 and 25 on a semiannual basis and, if deemed appropriate, shall revise the terms to provide the PCIs an adequate spread that reflects their costs, profit margins, and perceptions of risk.	Complied with. NDB has done this.
Sched. 6, para. 27	Except as ADB may otherwise agree, during the first three years of Project implementation, (i) up to 50% of the loan proceeds allocated for credit subprojects shall be reserved for relending to the eligible PCIs such as Regional Rural Development Banks, Thrift and Credit Cooperative Societies (TCCSs) and fisheries cooperatives; (ii) the amount to be relent to NDB when it acts as a PCI shall not exceed 10 percent of the loan proceeds allocated for credit subprojects; and (iii) the remaining loan proceeds for credit subprojects shall be available for relending to other eligible PCIs on a first-come-first-served basis. All the remaining loan proceeds allocated for credit subprojects shall be available for relending to all eligible PCIs on a first-come-first-served basis after the first three years of implementation.	Complied with
Sched. 6, para. 28	Except as ADB may otherwise agree, the Borrower shall reimburse to NDB an annual fee of 1.5% of the amount disbursed for the PCI subsidiary loans, except for PCI subsidiary loans made to NDB itself.	Complied with. Administration fee paid to NDB
Sched. 6, para. 29	NDB shall be responsible for: (i) screening and selecting PCIs to participate in the Project; (ii) reviewing and approving refinancing applications from eligible PCIs; (iii) supervising PCI credit activities and compiling and evaluating data on the progress and operation of each credit subproject; (iv) providing or arranging training in small to microcredit operations for selected PCI staff; (v) ensuring PCIs' compliance with MOF guidelines; and (vi) coordinating with CBSL, the PCC, and ADB for effective project implementation.	Complied with. These items have been included in the administrative agreement, the loan subsidiary agreement, and the operating instructions.
Sched. 6, para. 31	NDB shall select the PCIs by the following criteria: (i) The PCI shall have at least 2 years' experience in lending to the target sub-borrowers; (ii) The loan recovery rate of the PCI during the 2 years preceding the subloan shall be at least 70% percent of the loans that are due; (iii) The PCI shall operate according to sound financial, banking, and management practices. Appropriate debt:equity ratios will be maintained, and adequate provision will be made for bad debts in accordance with CBSL's general guidelines and, for TCCSs and fishery cooperatives, the general guidelines of the Cooperative Department (CD) of the Borrower; (iv) The PCI shall establish an accounting and financial reporting system and credit monitoring procedures acceptable to NDB and CD, and agree to have accounts audited annually by an independent auditor; and (v) The PCI shall, where	Complied with. Regional rural development banks and TCCSs such as <i>SANASA</i> and <i>Sarvodaya</i> were selected on this basis.

Reference	Covenant	Status
Sched. 6, para. 33	<p>relevant, use a group lending approach for its sub-borrowers through the microcredit and self-employment credit schemes under each credit subproject. The PCI shall operate a savings program for the duration of each subloan, and rely primarily on character reference, rather than on collaterals, in evaluating credit applications.</p> <p>To be eligible for subloans, sub-borrowers must meet the following selection criteria: (i) be a privately owned micro, or small- or medium-scale enterprise with fixed assets of no more than SLRs8 million or, for an individual sub-borrower, be a member of a self-help group; (ii) preferably be a resident of the project area; (iii) have participated in training or social mobilization activities provided through the Project for at least 3 months before the subloan; (iv) agree to participate in a mutual support group composed of other project beneficiaries in order to share experiences and jointly obtain access to credit; and (v) agree to participate in a savings program operated by a concerned PCI for the duration of the subloan.</p>	Complied with. An information brochure was printed and distributed to prospective borrowers, social mobilizers, etc. Beneficiaries were informed through workshops and meetings.
Sched. 6, para. 35	The Borrower shall, by 1 January 1994, establish a system to comprehensively monitor the fisheries catch and fishing activities in its coastal and offshore waters.	Complied with. Offshore catches were monitored, using logbooks, on the basis of a sample survey conducted in collaboration with the UNDP Fishery Management Program. Three hundred and fifty logbooks have been distributed. Information gathered includes location, species, cost per trip, total catch, duration of trip, and number of fishing days.
Sched. 6, para. 36	The Borrower shall, by 30 June 1993, establish a legal framework by introducing enactment for implementation of fishing boat regulations and licensing systems.	Complied with. Registration of fishing boats had been in practice for a long time. Licensing started in 1996. A legal framework for registration and licensing is provided under the new Fisheries Act.
Sched. 6, para. 37	The Borrower shall carry out an interministerial review on the performance of the subsidy scheme for fishery cooperatives. The feasibility to further reduce and eventually eliminate the subsidy schemes for multiday fishing boats should be examined. A copy of the review results will be provided to ADB for review by 31 December 1993.	Partly complied with. Subsidies to cooperative societies have been fully withdrawn. Vessel subsidies for day boats and traditional craft have been phased out. Subsidies to multiday boats have remained constant for the past 5 years.
Sched. 6, para. 38	The Borrower shall (i) require the beneficiaries of the harbor and anchorage subprojects to contribute for operations and maintenance (O&M) of project facilities as required in para. 17 (iv); (ii) arrange, if applicable, for subcontracting or long-term leasing of the harbors or	Partly complied with. A user charge system is operating at Beruwala, Kirinda, Galle, Mirissa, and Tangalle. Long-term leasing or renting of assets is underway

Reference	Covenant	Status
Sched. 6, para. 39	anchorages to suitable private entrepreneurs or fishery cooperatives for management and O&M; (iii) discuss with ADB recommendations on licensing fees, harbor charges, and resource fees that consultants are to submit to be engaged under the TA; and (iv) implement the recommendations agreed on by the Borrower and ADB within 1 year of completion of the TA.	at Galle, Mirissa, Beruwala, Tangalle, Chilaw, Negombo, Kalpitiya, and Kalmunai. The Government has agreed to prepare an action plan to introduce user charges at the remaining harbors.
Sched. 6, para. 40	The Borrower shall, by 30 June 1994, (i) establish a Benefits Monitoring and Evaluation (BME) unit within the MFAR planning division that is responsible for BME activities of all projects in the marine and inland fisheries sector of the Borrower, including ADB-assisted projects; and (ii) provide the BME unit adequate and qualified support staff, including statisticians and an economist/BME specialist.	Complied with. The Ministry's Planning and Development Division was reorganized, and is now known as Planning and Monitoring Division. Special emphasis is placed on progress and monitoring. Additional staff were recruited. A statistical unit was established in the new division.
Sched. 6, para. 41	The Borrower shall ensure that, by 30 June 1993, the position of legal officer and all vacant DOF positions of district fisheries extension officers (DFEOs) are filled with qualified personnel.	Complied with. A legal officer has been recruited. Vacant DFEO posts have been filled internally.
Sched. 6, para. 42	The Borrower shall, by 30 June 1993, cause NARA to (i) formulate and implement a coherent fisheries research program linked with upgrading of fish stock assessments, statistics, data processing systems, and budgetary practices; (ii) recruit necessary staff, including an internal auditor, an accountant, and two statistical officers; (iii) establish a fisheries technology unit, and separate the National Hydrographic Office from its organizational structure; and (iv) grant more autonomy to NARA in preparing its budget to enable it to conduct research or other activities more efficiently to serve needs of the Borrower's fishing sector.	Complied with. The research advisor conducted a comprehensive study, and a workshop was held to discuss the findings. NARA has acknowledged changes in the research policy. A shift toward applied research was established. All prescribed appointments have been made. A fisheries technology unit was established. The activities of the National Hydrology Office have come under NARA jurisdiction, with amendments made under the NARA Act.
Sched. 6, para. 42	The Borrower shall, by 30 June 1994, divest its shareholdings in the Ceylon Fisheries Corporation (CFC) to the private sector, in accordance with the following arrangements: (i) transfer of at least 51% of the total shareholdings of the cold stores assets of CFC to the private sector and/or CFC employees with the management retained by the public co-owner of CFC; (ii) transfer of the CFC trading center in Colombo to a suitable regional fish marketing cooperative in the private sector; and (iii) sale or lease to the private sector or CFC employees of all other CFC commercial facilities and activities.	Partly complied with. All facilities have been provided for private participation. Publicity has been generated, and information provided to prospective investors. The public sector has undertaken no new commercial activities. Ice plants, cold rooms, and slipways have already been transferred to private sector and cooperative societies.



Reference	Covenant	Status
Sched. 6, para. 43	The Borrower shall, by 30 June 1993, cause CFHC to divest its commercial facilities and reorient its activities from carrying out commercial activities to providing basic harbor and anchorage services, including services for design, dredging, and maintenance of harbors and anchorages.	Complied with. No commercial grants
Sched. 6, para. 44	The Borrower shall, within 6 months of the effective date, encourage private investment in commercial complementary fishing and fish product processing, and market facilities, by (i) increasing credit arrangements from financial institutions for private investment in the commercial complementary fishing, and fish product processing and market, facilities; (ii) leasing land to private enterprises at reasonable rates within, or adjacent to, the harbors and anchorages rehabilitated under the Project; (iii) refraining from activities that compete with the private sector; (iv) refraining from selling or leasing to private firms or financially viable plants, boatyards, cold stores, and slipways at the harbor and anchorage subproject sites, and other publicly owned or controlled commercial assets at the inland fisheries stations.	Complied with. Most facilities have been provided for private participation. Publicity has been generated, and information provided to prospective investors. The public sector has undertaken no new commercial activities. Ice plants, cold rooms, and slipways have already been transferred to private sector and cooperative societies.
Sched. 6, para. 45	MFAR shall, after consulting with the PIAs and NIFT, submit to ADB for approval, proposals for training programs including criteria for trainee selection, duration, and proposed training institutions. Submissions will be within 12 months of the effective date.	Complied with. The final project training plan was formulated with ADB concurrence. Most, but not all, training programs have been completed.
Sched. 6, para. 46	Each PIA shall prepare and maintain an account for the project component or subprojects that it implements. The PMO will consolidate the accounts received from the PIAs and submit them to MFAR.	Complied with
Sched. 6, para. 47	MFAR will submit a detailed BME program to ADB for its concurrence within 12 months of the effective date. The BME program shall include (i) procedures, staffing, locations, and recommendations for establishing or strengthening the BME units within MFAR, CFHC, DOF, NARA, and NIFT; (ii) a midterm review, as required in para. 49; and (iii) a postevaluation BME report within 1 year of project completion. The Borrower shall also carry out and submit to ADB (i) a postevaluation survey of Loan No. 648-SRI: Aquaculture Development Project by 30 June 1994, and (ii) benchmark surveys of selected sites in the project area by 31 December 1993.	Partly complied with. A detailed BME program was submitted to ADB. An interim evaluation report of the project was submitted. A postevaluation survey of the aquaculture development project has been submitted. Benchmark surveys have been partially completed.
Sched. 6, para. 48	The Borrower shall provide appropriate forum for consultation with beneficiary groups regarding the implementation and impacts of the Project at least once a year.	Complied with

Reference	Covenant	Status
Sched. 6, para. 49	MFAR will carry out a comprehensive midterm review in the third year of project implementation to assess the Project's performance, identify problems encountered during implementation, and propose remedies to the problems. Remedies might include changes in the project design or scope; changes in the role of the PIAs; and other implementation arrangements such as reallocation of funds among project components or expansion of project area coverage during the remaining period of implementation.	Complied with
Sched. 6, para. 50	The Borrower shall, within 12 months of the effective date, submit the National Fishery Development Plan (1995–1999) to ADB for comments before its finalization.	Complied with
Sched. 6, para. 51	The Borrower shall submit to ADB for its review and comments, before 30 September of each year, a draft annual work program for project implementation including an annual budget and requirements for credit, training, and staff.	Complied with.
Sched. 6, para. 52	MFAR and the PCIs will ensure that all subprojects to be financed under the project shall comply with the Borrowers' environmental laws and regulations. Subprojects with significantly potential adverse impacts on the environment shall be submitted to the Central Environmental Authority and CCD for clearance before approval.	Complied with
Sched. 6, para. 53	The Borrower shall submit to ADB, for review, the initial environmental examination or the detailed environmental impact assessment studies, or both if appropriate, for all harbor and anchorage subprojects, and for other subprojects if applicable.	Complied with
Sched. 6, para. 54	The Borrower shall consult with ADB, before finalization, the terms of reference for and the selection and felding schedules of the consultants to be engaged under the UNDP-funded TA for the institutional strengthening of MFAR, DOF, and NIFT.	Complied with

ADB = Asian Development Bank; AGA = assistant general agent; BME = benefit monitoring and evaluation; CCD = Coast Conservation Department; CD = Cooperative Department; CFC = Ceylon Fisheries Corporation; CFHC = Ceylon Fishery Harbors Corporation; DCC = district coordinating committee; DFEO = district fisheries extension officers; DOF = Department of Fisheries; MFAR = Ministry of Fisheries and Aquatic Resources; MOF = Ministry of Finance; NDB = National Development Bank of Sri Lanka; NARA = National Aquatic Resources Research and Development Agency; NGO = nongovernment organization; NIFT = National Institute of Fisheries Training; O&M = operation and maintenance; PCC = project coordination committee; PCI = participating credit institution; PD = project director; PIA = project implementing agencies; PIU = project implementation unit; PMO = project management office; SLA = subsidiary loan agreement; TA = technical assistance; TCCS = thrift and credit cooperative societies; UNDP = United Nations Development Programme.

Sources: ADB Review Missions, Project Performance Reports.

## TECHNICAL ASSISTANCE COMPLETION REPORT

TA No. and Name <b>TA 1795-SRI: Rationalization of Fishery Harbor and Other Charges</b>			Amount Approved: <b>\$560,000</b>	
			Revised Amount: <b>\$560,000</b>	
Executing Agency: <b>Ministry of Fisheries and Aquatic Resources Development</b>		Source of Funding: <b>Technical Assistance Special Fund</b>	TA Amount Undisbursed <b>\$10,559</b>	TA Amount Utilized <b>\$549,441</b>
Date			Closing Date	
Approval	Signing	Fielding of Consultants	Original	Actual
<b>1 Dec 1992</b>	<b>1 Nov 1993</b>	<b>23 Oct 1995</b>	<b>31 Jan 1998</b>	<b>30 Jun 2000</b>
<b>Description</b>				
<p>At the time of formulation of L1201-SRI: Fisheries Sector Project (FSP), the Government of Sri Lanka had adopted a policy to encourage cost recovery from end users of the operation and maintenance (O&amp;M) expenditures, and part of the investment costs, of all public sector infrastructures. Under FSP, the Government had assured the Asian Development Bank (ADB) that it would (i) require a cost-sharing scheme with project beneficiaries contributing to part of the capital cost before or during rehabilitation, or part or all O&amp;M costs after completion of the fishery harbors and anchorages, or both; and (iii) pursue subcontracting and long-term leasing of the rehabilitated harbors and anchorages, including application of the "build-operate-transfer" (BOT) approach to suitable private entrepreneurs and fishery cooperatives for operation, maintenance, and management of such facilities. The Government requested ADB for technical assistance (TA) to carry out both the cost sharing and recovery policy and the BOT policy.</p>				
<b>Objectives and Scope</b>				
<p>The objectives of the TA were: (i) to review current policies and practices regarding user charges and examine the feasibility of introducing a system of user charges for access to marine resources and landing facilities; (ii) if user charges appear feasible in financial and organizational terms, to design and implement a pilot scheme in selected locations; and (iii) to train local personnel in methodologies for planning and managing modern fishery harbors, and in fishery quality control and pollution control.</p>				
<p>The TA was designed to (i) study the feasibility of the concept of user charges as a method of cost recovery from the direct and indirect users of Government-provided facilities and services in the harbors, (ii) test the concept in selected areas, (iii) recommend the extent and scope of such charges, (iv) recommend appropriate institutional mechanisms for collection of such charges, (v) provide an implementation plan to meet part or all of the O&amp;M costs of such facilities, and (vi) develop a plan for the rehabilitation of harbors and anchorages on BOT terms in collaboration with the Ceylon Fishery Harbor Corporation, the agency responsible for the development, operation, and administration of all fishery harbors and anchorages infrastructures in Sri Lanka.</p>				
<b>Evaluation of Inputs</b>				
<p>The scope of the TA required addressing the key assumptions underlying the proposed policy changes. The most important assumptions related to impact on the users, and included the viability of marine fishing, which is dependent on resource availability and profitability, trends in the number and capacity of vessels, and trends in catch data. The formulation of the TA was adequate, and provided the needed training for harbor management.</p>				
<b>Evaluation of Outputs</b>				
<p>The TA was in 2 phases and was completed in March 1998, with the submission of the final report, in accordance with the terms of reference. Harbor managers have been recruited for six harbors, and training was completed under the TA. User charges have so far been introduced at only five harbors: Beruwala, Galle, Kirinda, Mirissa, and Tangalle. User charges will be introduced at other harbors upon completion of infrastructure facilities.</p>				

**Overall Assessment and Rating**

The TA is rated successful. It was generally implemented as originally designed and planned, and its objectives were substantially achieved.

**Major Lessons Learned**

Social aspects were considered in the TA, but more consultation with users may be needed in the future, to build understanding of the benefits to users, and a willingness to pay for the services provided. More effective consultations and awareness building are needed, particularly in situations where users are not accustomed to paying charges.

**Recommendations and Follow-Up Actions**

Because of delays in project completion, not all of the TA recommendations have yet been implemented. ADB and the Government should closely monitor further progress on actions recommended by the TA, most of which have been initiated. The *Coastal Resource Management Project* is providing further support to fishery harbors. Followup actions may be monitored as part of this project.

BOT = build-own-operate, FSP = Fisheries Sector Project, O&M = operation and maintenance, TA = technical assistance

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## ECONOMIC AND FINANCIAL ANALYSIS

### A. Introduction

1. The Project was designed to have a direct impact on the fisheries sector. The rehabilitated and new harbors constructed under the Project offer year-round fishing versus fishing for only about 6 months per year when the Project began. The coastal conservation subprojects have saved land, houses, and infrastructure from erosion at selected sites. The credit component has helped fishers diversify into nonfishery activities, and fishing community development subprojects have provided much-needed facilities such as roads, water, electricity, and sanitation to fishing villages.

2. The fisheries sector contributed about 2% of Sri Lanka's gross domestic product (GDP) in 1991. In 1999, the sector contributed 2.1%. Active fishers in all fisheries districts numbered 120,000 in 1991, and 115,000 in 1999.

3. In the early 1990s, per capita domestic fish availability was 11 kilograms (kg). Provisional per capita domestic fish supply in 2001 was 17.8 kg. Annual fish production has increased from 198,000 tons (t) in 1991 to 285,000 in 2001. The compound annual growth rate has been 3.7%. (Figures for 1999 and 2001 are from the Statistical Unit, Ministry of Fisheries and Ocean Resources.)

4. The trends are positive. The main area of concern upon project completion, however, is the delay in implementation of user charges at the harbors. As a result, operation and maintenance of harbors still requires budgetary support by the Government. The levy and quantum of user charges are critical to sustained operation of the harbors.

### B. Approach and Methodology

5. At appraisal, economic and financial rates of return were calculated for (i) two sample harbors and anchorages (Beruwala and Negombo); (ii) three sample coastal protection works (Kandakuliya, Kottegoda, and Mirissa); and (iii) a 34-foot (ft) multiday fishing vessel. Using the same methodology as at appraisal, the economic internal rate of return (EIRR) was recalculated for the Beruwala harbor subproject and compared with the estimate at appraisal. The financial internal rate of return (FIRR) for Beruwala harbor could not be recalculated because port charges based on the value of landed fish at the harbor, a critical assumption for the subproject's financial viability, were not implemented. The Negombo anchorage was not rehabilitated under the Project.

6. The EIRR for coast conservation projects (construction of revetments, groynes<sup>1</sup>, and sand nourishment systems) could not be recalculated because of a lack of data on actual benefits and savings that these activities generated. At appraisal, benefits were expected to accrue from savings in losses of labor and houses. Target beneficiaries were 3,530 households. On subproject completion, critical infrastructure such as stretches of highways, railways, prime land, and houses had been saved—but no data were available to quantify the savings. In the absence of holistic coastline management, structures such as revetments often were noted to divert erosion to other sites.

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<sup>1</sup> A groyne is a breakwater running seaward from land, constructed to stop erosion, or the flow of beach material.

7. The FIRR for a large multiday fishing vessel has been recalculated and compared with the rate projected at appraisal, when harbors were expected to levy charges of 10% of fish sales. This was not implemented, but sensitivity analysis has been carried out to determine the impact of such charges on the FIRR.

8. Actual project costs, capital, and other costs of multiday fishing vessels, revenues, and harbor fleet-related data are based on information provided by the Executing Agency (EA) and this component's implementing agency. Other than the project costs, all cost and revenue data pertaining to the harbor and fleet are provisional estimates. Thus, the results are indicative, not conclusive.

9. The analysis uses constant 2001 prices. As at appraisal, a standard conversion factor of 0.9 has been applied to costs for the economic analysis.

### C. Economic Internal Rate of Return for Beruwala Harbor

10. The EIRR for Beruwala harbor was 20% at appraisal. The EIRR was estimated at 22% at project completion review.<sup>2</sup> Significant benefits were derived from the 80% increase in number of fishing days versus the 30% increase estimated at appraisal. The harbor was assumed to be operational for 6 months a year at appraisal, and operation was expected to increase to 8 months upon project completion. The assumption in the project completion report (PCR) that the harbor is operational for 11 months a year is based on the EA's confirmation that the rehabilitated harbor is an all-weather harbor. This assumption allows 1 month for boat repairs and maintenance. Table A6.1 gives the key assumptions at appraisal and at project completion. Table A6.2 gives a breakdown of investment costs for the harbor, in economic prices, at appraisal, and at project completion.

**Table A6.1 : Key Assumptions for the Beruwala Harbor**

<b>Assumptions</b>	<b>At Appraisal</b>	<b>PCR</b>
Economic life	20 years	20 years
Benefit accrual	Year 5 onward	Year 8 onward
Number of fishing months per year	8 mo.	11 mo.
Existing multiday boats	118	150
Additional multiday boats per annum	12	10
Fish production/boat per year	25.0–45.0 tons	50.6 tons
Export of incremental fish production	70%	6.5%
Export price (SLRs/kg)	35	250
Local price (SLRs/kg)	30	70
Capital cost per boat (SLRs million)	1.0–1.4	4.1
Running cost per boat (SLRs million)	0.5–0.9	3.1
Refitting cost (SLRs million)	0.2–0.7	1.7

PCR = project completion report.

Source: Asian Development Bank estimates.

11. At appraisal, annual catch was estimated to be 25–45 t per fishing vessel, with vessel length varying from 28 to 35 ft. At project completion, the length of fishing vessels using the rehabilitated harbor ranged from 32 to 39 ft. The bigger vessels allow increased fishing days and yield. An average fish catch of 4.6 t per month per boat has been assumed, giving 50.6 t

<sup>2</sup> Detailed worksheets are available in the project files.

per annum per boat operating for 11 months a year. This is consistent with the EA's estimate of fish landings at the harbor of 8,064 t from 160 multiday boats during 2001.

12. The quality of the catch fell short of expectations. Against the appraisal target of 70% exportable catch, at project completion only 6.5% of the harbor catch was exported. The balance is locally traded. The catch brought to the harbor included tuna, shark, swordfish, marlin, and seer, and found a ready market locally and in Colombo. Based on a review of market prices, the average price of locally traded fish was estimated at SLRs70 per kg and for export quality tuna at SLRs250 per kg.

**Table A6.2 : Capital Costs for the Beruwala Harbor**

<b>Component</b>	<b>At Appraisal (SLRs'000)</b>	<b>PCR (SLRs'000)</b>
Coastal Engineering	409	
Dredging	59,294	145,885
Physical Construction	18,116	62,916
Developing Shore Facilities		7,455
Allocated Project Overhead Costs	17,387	10,080
<b>Total</b>	<b>95,206</b>	<b>226,336</b>

PCR = project completion review.

Source: Asian Development Bank estimates.

13. At appraisal, the EIRR was highly sensitive to delays in completion of harbor rehabilitation. Although the delay was more than 3 years, the adverse impact was more than compensated by the increase in fishing days, larger fishing fleet, and improved domestic fish prices. Table A6.3 summarizes results of the sensitivity analysis of EIRR. The subproject is highly sensitive to reduction in benefits. An overall 10% reduction in benefits causes EIRR to decline to 15%. Reduction in fishing days by a month reduces EIRR to 16%.

**Table A6.3: Sensitivity Test of Economic Internal Rate of Return**

<b>Item</b>	<b>Appraisal (%)</b>	<b>PCR (%)</b>
Base Case	20.1	22
Cost Overrun by 10%	18.6	17
Reduced Benefit by 10%	17.9	15
Delayed Benefit by 2 Years	13.6	

PCR = project completion report.

Source: Asian Development Bank estimates.

14. Although Beruwala harbor did not implement port charges based on the value of landed fish, it is one of the few harbors to implement berthing and access charges, and also draws income from leasing its facilities to the private sector. The revenue has been sufficient to meet its running costs and generate a cash surplus. During the first three quarters of 2002, the harbor recorded an income of SLRs6.0 million, and a cash surplus of SLRs1.4 million, after meeting its salaries and administrative overheads. Table A6.4 gives the income and expenditure statement for Beruwala harbor for the 9 months ending September 2002.

**Table A6.4 : Beruwala Harbor Income and Expenditure  
(January-September 2002)**

<b>Item</b>	<b>Amount (SLRs'000)</b>
<b>Income</b>	
Berthing and Gate Pass	2,436
Water, Fuel, and Electricity	3,021
Rentals	458
Other Income	90
<b>Total income</b>	<b>6,005</b>
<b>Expenditure</b>	
Staff Related	3,132
Utilities	746
Other Operating Costs	722
<b>Total Expenditure</b>	<b>4,600</b>

Source: Ceylon Fishery Harbor Corporation.

15. Operating costs are being met by access charges and other levies. Rental income accrues from lease of facilities such as cold storage, ice plant, slipway, and canteen. The lease agreements are being reviewed, and rentals are expected to increase. This will further augment the income of the harbor. The income is sufficient for current running costs, but not for dredging of the harbor (required once in 3 years), nor to meet future capital investment needs. Substantial dredging was done as a project activity, and subsequent dredging requirements have been met by the Ceylon Fishery Harbor Corporation. The delay in fully implementing harbor charges was attributed to incomplete harbor facilities. The Government has started to install a weighbridge at the harbor to implement fish-landing charges based on the landed catch. The PCR Mission estimated Beruwala harbor's loss of revenue from non-levy of harbor charges at SLRs54 million a year, assuming a rate of 10% on fish landings by 150 multiday fishing vessels.

#### **D. Financial Internal Rate of Return for a Multiday Fishing Vessel**

16. At appraisal fishers were envisaged to benefit through higher income because of the increase in fishing days and increased fish production. This has been borne out by the recalculated FIRR of a multiday fishing vessel. The capital and operating costs of multiday fishing vessels were recalculated based on data from a survey carried out by the EA in 1998. The costs were adjusted to 2001 prices. Table A6.5 gives the expected life and a breakdown of the costs for multiday fishing vessels.

**Table A6.5 : Key Assumptions for a 34-Foot MultiDay Fishing Vessel**

<b>Estimated Costs</b>	<b>Expected Life (years)</b>	<b>Amount (SLRs'000)</b>
<b>Capital Costs</b>		
Hull	15	1,461
Engine	7	807
Gear	7	889
Electronics	15	976
<b>Total Capital Costs</b>		<b>4,133</b>



<b>Estimated Costs</b>	<b>Expected Life (years)</b>	<b>Amount (SLRs'000)</b>
<b>Annual Operating Costs</b>		
Fixed Costs before Depreciation		433
Cost of 11 Months' Operations		1,000
Crew Share		1,654
<b>Total Operating Costs</b>		<b>3,087</b>

Source: Asian Development Bank estimates.

17. The recalculated FIRR is 31%. At appraisal it was 28%.<sup>3</sup> This higher achievement is due to an increase in the number of fishing days, made possible by the rehabilitated all-weather harbors. The vessel owners are also benefiting from the non-implementation of port charges based on value of fish landings by harbors. The FIRR drops to 12% if fishing is confined to 8 months a year (as opposed to the assumed 11 months). The FIRR also drops to 12% if a charge of 10% of the value of fish sales is added to the cost of port charges as envisaged at appraisal. If both lower number of fishing months and higher port charges are assumed, the FIRR becomes negative. Table A6.6 summarizes the sensitivity of the recalculated FIRR to changing assumptions.

**Table A6.6 : Sensitivity Test of Financial Internal Rate of Return**

<b>Item</b>	<b>PCR</b>
Base Case	32%
Fishing Operations: 10 months	24%
Fishing Operations: 8 months	12%
Port Charges at 5% of Fish Sales	21%
Port Charges at 10% of Fish Sales	12%

PCR = project completion report.

Source: Asian Development Bank estimates.

## **E. Costs and Benefits of Microcredit**

18. Although the microenterprise credit support targets poverty reduction, the intention was to encourage investment in enterprises that are financially sound in a normal commercial environment. Three representative models were presented in the appraisal report, with FIRRs ranging from 24% to 31%. The project disbursed SLRs153 million through 1,276 loans. A variety of enterprises was financed in the project area, including new enterprises as well as expansion of existing enterprises. Of these loans, 53% were in the range of SLRs1,800–40,000, 42% were in the range of SLRs40,500–500,000, and 5% were over SLRs500,000. Thus, medium-sized (Rs500,000), small (Rs40,000), and micro (Rs10,000) categories, as defined at appraisal, were covered.

19. A survey commissioned by the EA at project completion found that the incremental income from microenterprise credit support was SLRs1,000–12,000 per month for different enterprises, but there are no details to link incremental income to investment. Assuming that the highest incremental income corresponded to a loan of SLRs500,000, the FIRR was recalculated. Table A6.7 gives the results for two scenarios, compared to the appraisal

<sup>3</sup> The appraisal estimates of capital and operating costs were lower than actual costs assessed through a recent survey. This resulted in a higher FIRR, even though benefits were projected to be lower than actual, with only 8 fishing months a year.

estimate. The second scenario represents the sensitivity of the FIRR to a 10% decrease in incremental annual cash flow. Assuming an incremental income of SLRs 12,000 per month results in an FIRR of 29%. The second scenario represents the sensitivity of the FIRR to a 10% decrease in incremental annual cash flow. With the reduced incremental income, the FIRR comes down to 24%.

**Table A6.7: Reevaluation of Microenterprise Credit Model**

<b>Item</b>	<b>At Appraisal</b>	<b>PCR (scenario 1)</b>	<b>PCR (scenario 2)</b>
Investment (SLRs)	500,000	500,000	500,000
Repayment Period	10 years	10 years	10 years
Incremental Annual Cash Flow (SLRs)	150,000	144,000	129,600
FIRR (%)	31	29	24

FIRR = financial internal rate of return, PCR = project completion report.

Source: Asian Development Bank estimates.