



<b>1. Project Data:</b>		<b>Date Posted :</b> 09/03/2003	
<b>PROJ ID:</b> P009549		<b>Appraisal</b>	<b>Actual</b>
<b>Project Name:</b> Coastal Embankment Rehabilitation	<b>Project Costs (US\$M)</b>	87.8	97.6
<b>Country:</b> Bangladesh	<b>Loan/Credit (US\$M)</b>	53	59.6
<b>Sector(s):</b> Board: RDV - Flood protection (85%), Central government administration (11%), Other social services (4%)	<b>Cofinancing (US\$M)</b>	20.1	17.1
<b>L/C Number:</b> C2783			
	<b>Board Approval (FY)</b>		96
<b>Partners involved :</b> Commission of the European Communities (CEC)	<b>Closing Date</b>	12/31/2002	12/31/2002

<b>Prepared by :</b>	<b>Reviewed by :</b>	<b>Group Manager :</b>	<b>Group:</b>
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**2. Project Objectives and Components**

**a. Objectives**

The objectives of the project were to:

- (a) provide cyclone protection, including improving the security of the people living in the protected areas, reducing damage to houses and other buildings and infrastructure, and minimizing the loss of crops and livestock ;
- (b) improve agricultural production through the prevention of saline inundation during normal weather and improved cropping patterns due to reduced cyclone risks; and
- (c) introduce improved technology in the design and construction of protection works, and improved methods of embankment maintenance.

**b. Components**

The project included the following components:

- (i) rehabilitation and improvement of 12 sea-facing embankments, plus the completion of similar works in two polders treated under a previous Bank project (Priority Works Program - PWP);
- (ii) minor rehabilitation and improvements to the non-coastal section of the polders, including re-excavation of drainage canals, repair or replacement of sluice regulators or minor embankment repairs;
- (iii) afforestation of embankment slopes and foreshore to reduce cyclone damage and embankment maintenance costs;
- (iv) improved operations and maintenance (O&M) of all polders;
- (v) a program for compensation, rehabilitation and resettlement of people displaced by the project;
- (vi) environmental monitoring and provision for appropriate mitigation measures;
- (vii) studies to investigate the possibility of cost effective town protection works for Sandwip; and
- (viii) technical assistance for implementation support, training for staff of implementing agencies and participating NGOs, and for community participants; and vehicles and minor equipment.

With the approval of a supplemental credit in May 1999, the scope of the project was expanded to include:

- (a) emergency works undertaken after 1997 cyclones to repair breaches in the embankments, not only in the Coastal Embankment Rehabilitation Project (CERP) polders, but also in some 46 additional polders;
- (b) cost over-runs and some additional works required in some CERP polders; and
- (c) additional activities for piloting of toe protection trials and feasibility studies for a second CERP.

### **c. Comments on Project Cost, Financing and Dates**

The original credit amount was US\$ 53 million. A supplemental credit of US\$ 16.5 million was approved in May 1999. At project closing, disbursement totalled at US\$59.6 million and US\$ 1.56 million was cancelled due to misprocurement and another US\$1.56 million of the undisbursed credit was cancelled.

### **3. Achievement of Relevant Objectives:**

(a) Providing cyclone protection was substantially achieved. About 69 km of new embankments were constructed compared to the appraisal target of 73 km and re-sectioning of 61 km of existing embankments (against 78 km at appraisal) was done. Emergency repairs in 50 polders which were damaged by the 1997 cyclone were completed. Some minor civil works were done, however, appraisal targets were not met.

(b) Agricultural production was substantially increased. According to the ICR, the average cropping intensity for eleven polders for which data is available increased by about 18% compared to a without project situation.

(c) Improved technology in the design and construction of protection works, and improved methods of embankment maintenance were successfully piloted but not mainstreamed:

- Afforestation of embankment slopes was completed and 78% of the revised appraisal target was met. For foreshore plantation, 35% of the revised appraisal target was met.
- Various engineering approaches in combination with protective vegetation were tested in few polders to stop toe erosion. Average costs ranged from US\$68 to US\$152 per meter compared to US\$350 per meter for the traditional engineering approaches.
- Community groups such as Embankment Settlers, Embankment Protection/Maintenance Groups, and Landless Contracting Societies were established to involve communities in O&M of Flood Control and Drainage (FCD) schemes.

### **4. Significant Outcomes/Impacts:**

- By strengthening the existing embankments, construction of new embankments, afforestation and minor polder improvements, protection from cyclones has improved.
- The project has led to a substantial increase in agricultural production.
- Community participation in the operations and management of Flood Control and Drainage (FCD) schemes was piloted.

### **5. Significant Shortcomings (including non-compliance with safeguard policies):**

- Out of 21 project polders, peripheral embankments in seven polders (Teknaf, Matherbari, Sitakunda, Hatiya, Sandwip, Ramgati and Swarankhola) are either open or have weak sections in one or more locations. As a consequence, these polders may not provide sufficient protection to some areas in the event of a cyclone.
- The quality of many sea-facing external slope embankments is poor and is leading to slope erosion problems.
- By project closing, some settlers were not given plots, relocation assistance or compensation payments as stipulated in the Resettlement Action Plan.
- Appraisal targets for minor civil works were not met: (a) minor embankment repair on the non-coastal sections (i.e. interior and marginal embankments) were done on 22 km against the appraisal target of 127 km; and (b) 115 km of re-excavation of the drainage network was completed compared to the appraisal target of 381 km.
- The project implementation paid inadequate attention to the following aspects of monitoring and evaluation: (a) surface water and groundwater quality and availability; (b) water management, specifically drainage; (c) sedimentation, accretion and erosion of coastal areas; (d) land use and agricultural intensity; and (e) fisheries and shrimp culture assessment.
- Misprocurement of some civil works contracts for O&M and Emergency Works. Consequently, US\$ 1.56 million was declared misprocured and ineligible for replenishment by the Bank.
- The Technical Assistance (TA) by CEC was interrupted for about one and half years during implementation due to lack of harmonization of the donor policies and procedures with the TA work plan.

<b>6. Ratings:</b>	<b>ICR</b>	<b>OED Review</b>	<b>Reason for Disagreement /Comments</b>
<b>Outcome:</b>	Satisfactory	Moderately Satisfactory	The project achieved most of its major objectives but with significant shortcomings (see section 5). The ICR's 4-point scale does not allow for a Moderately Satisfactory rating.

<b>Institutional Dev .:</b>	Modest	Modest	
<b>Sustainability :</b>	Likely	Unlikely	The government has initiated new measures to improve sustainability and has promised to give more attention to O&M. However, budgetary allocations for O&M are far short of O&M requirements. Also, according to the National Water Policy, future cost recovery of flood control and drainage schemes is not envisaged.
<b>Bank Performance :</b>	Satisfactory	Satisfactory	
<b>Borrower Perf .:</b>	Satisfactory	Satisfactory	
<b>Quality of ICR :</b>		Satisfactory	

**NOTE:** ICR rating values flagged with '\*' don't comply with OP/BP 13.55, but are listed for completeness.

### 7. Lessons of Broad Applicability:

- Coastal protection projects require a comprehensive approach which should include the following key elements: (i) a coastal protection plan; (ii) a network of safe havens, access roads and adequate drainage; and (iii) a modern disaster preparedness and response system.
- Sustainability of flood control and drainage schemes can be improved through community participation in operation and management (O&M), including contribution to O&M costs. However, institutional and implementation arrangements to introduce community participation are complex, difficult in practice and need significant time to implement fully. Also, it is important to ensure that the groups that exist do not wither away for lack of legal provision and resources.
- Donor policies and procedures must be agreed before project approval. Failure to do so disrupts the timely flow of funds and services during project implementation.

### 8. Assessment Recommended? Yes No

**Why?** For two reasons:

- (i) to verify the outcome and sustainability ratings for the project,
- (ii) to feed into OED's upcoming Natural Disasters and Emergency Reconstruction Study.

### 9. Comments on Quality of ICR:

The quality of the ICR is satisfactory. It covers the main topics and provides adequate support for its judgments. Despite the weakness in monitoring and evaluation during implementation, the ICR collected and provided data on farm income, cropping pattern, and average yield for eleven polders.