



Completion Report

Project Number: 41657
Loan Number: 2409
June 2011

Bangladesh: Emergency Disaster Damage Rehabilitation (Sector) Project

Asian Development Bank

CURRENCY EQUIVALENTS

Currency Unit		–	taka (Tk)
At Appraisal			At Project Completion
(6 January 2008)			(20 April 2011)
Tk1.00	=	\$0.01458	\$0.01375
\$1.00	=	Tk68.58	Tk72.725

ABBREVIATIONS

ADB	–	Asian Development Bank
BWDB	–	Bangladesh Water Development Board
CIDA	–	Canadian International Development Agency
EDDRP	–	Emergency Disaster Damage Rehabilitation (Sector) Project
EIRR	–	economic internal rate of return
GDP	–	gross domestic product
HDM	–	highway development and management
IEE	–	initial environmental examination
IMED	–	Implementation, Monitoring and Evaluation Division
IRI	–	international roughness index
JICA	–	Japan International Cooperation Agency
km	–	kilometer
LGED	–	Local Government Engineering Department
OFID	–	OPEC Fund for International Development
PCR	–	project completion review
PMU	–	project management unit
PSC	–	project steering committee
RHD	–	Roads and Highways Department
RMF	–	road maintenance fund
SDR	–	special drawing rights
TA	–	technical assistance
TCR	–	technical assistance completion report
VOC	–	vehicle operating cost

NOTES

- (i) The fiscal year (FY) of the government ends on 30 June. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2011 ends on 30 June 2011.
- (ii) In this report, “\$” refers to US dollars.

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BASIC DATA

A. Loan Identification

1.	Country	Bangladesh
2.	Loan number	2409-BAN(SF)
3.	Project title	Emergency Disaster Damage Rehabilitation (Sector) Project
4.	Borrower	People's Republic of Bangladesh
5.	Executing Agencies	Finance Division, Ministry of Finance; Local Government Engineering Department; Roads and Highways Department; Bangladesh Water Development Board
6.	Amount of loan	SDR75,899,000
7.	Project completion report number	BAN 1245

B. Loan Data

1.	Appraisal	
	– Date started	5 November 2007
	– Date completed	14 November 2007
2.	Loan negotiations	
	– Date started	12 December 2007
	– Date completed	12 December 2007
3.	Date of Board approval	31 January 2008
4.	Date of Loan Agreement	4 February 2008
5.	Date of Loan Effectiveness	
	– In Loan Agreement	19 February 2008
	– Actual	19 February 2008
	– Number of Extensions	Not applicable
6.	Closing date	
	– In Loan Agreement	31 December 2010
	– Actual	20 April 2011
	– Number of Extensions	
7.	Terms of loan	
	– Interest Rate	1% per annum
	– Maturity (number of years)	40
	– Grace Period (number of years)	10
8.	Terms of Relending (if any)	Not applicable
9.	Disbursements	

a. Dates

Initial Disbursement	Final Disbursement	Time Interval
21 February 2008	20 April 2011	38.50 months
Effective Date	Original Closing Date	Time Interval
19 February 2008	31 December 2010	34.86 months

b. Amount (SDR million)						
Category ^a or Subloan	Original Allocation	Last Revised Allocation	Amount Canceled	Net Amount Available	Amount Disbursed	Undisbursed Balance
01	31.62	39.77	0.00	39.77	39.77	0.00
02	9.32	9.32	0.00	9.32	9.46	(0.14)
03	5.90	5.90	0.00	5.90	6.36	(0.46)
04	12.76	12.76	0.00	12.76	12.48	0.28
05	8.79	0.64	0.00	0.64	0.62	0.02
06B	1.13	1.13	0.00	1.13	1.08	0.05
06C	0.87	0.87	0.00	0.87	0.81	0.06
06D	2.61	2.61	0.00	2.61	2.49	0.12
06E	1.62	1.62	0.00	1.62	1.53	0.09
07	1.27	1.27	0.00	1.27	1.27	0.00
Total	75.89	75.89	0.00	75.89	75.87	0.02
(SDR) Equiv. (\$)	120.00	118.19	0.00	118.19	118.15	0.04

() = negative.

^a 01 - quick disbursing; 02 - civil works: Part B - rural infrastructure; 03 - civil works: Part C - municipal infrastructure; 04 - civil works: Part D - roads; 05 - civil works: Part E - water resources; 06B - project implementation support Part B; project implementation support Part C; project implementation support Part D; project implementation support Part E.

10. Local costs (financed)
Not applicable

C. Project Data

1. Project Cost (\$ million)

Cost	Appraisal Estimate	Actual
Foreign exchange cost	111.65	109.22
Local currency cost	108.35	171.53
Total	220.00	280.75

2. Financing Plan (\$ million)

Cost	Appraisal Estimate	Actual
Implementation costs		
Borrower financed	30.00	38.88
ADB financed	118.00	116.20
Japan Bank for International Cooperation (JICA) Fund	60.00	81.35
CIDA Fund	10.00	9.00
OFID	0.00	10.14 ^b
Government of the Netherlands	0.00	23.23
Total	218.00	278.80
IDC Costs		
Borrower financed	0.00	0.00
ADB financed	2.00	1.95
Total	220.00	280.75

ADB = Asian Development Bank, CIDA = Canadian International Development Agency, IDC = interest during construction, JICA = Japan International Cooperation Agency, OFID = OPEC Fund for International Development.

^b Contract award under OFID loan was \$19.46 million equivalent as of 20 April 2011. OFID loan account remains open until 30 June 2011 for disbursement of eligible claims.

3. Cost Breakdown by Project Component (\$ million)

Component	Appraisal Estimate	Actual
A. Civil Works		
Part A: Quick Disbursing	75.56	98.14
Part B: Rural Infrastructure	33.57	40.28
Part C: Municipal Infrastructure	20.89	32.35
Part D: Roads	46.43	53.29
Part E: Water Resources	31.70	44.18
Subtotal (A)	208.15	268.24
B. Consulting Services		
Part B: Rural Infrastructure	1.79	1.93
Part C: Municipal Infrastructure	1.37	1.47
Part D: Roads	4.13	4.43
Part E: Water Resources	2.56	2.73
Subtotal (B)	9.85	10.56
Subtotal (A+B)	218.00	278.80
C. Interest during Construction	2.00	1.95
Total (A+B+C)	220.00	280.75

4. Project Schedule

Item	Appraisal Estimate	Actual
Date of Contract with Consultants:		
Part B: Rural Infrastructure		
Date of contract	December 2007	April 2008
Completion of work	June 2010	December 2010
Part C: Municipal Infrastructure		
Date of contract	December 2007	April 2008
Completion of work	June 2010	December 2010
Part D: Roads		
Date of contract	December 2007	April 2008
Completion of work	June 2010	December 2010
Part E: Water Resources		
Date of contract	December 2007	April 2008
Completion of work	June 2010	December 2010
Completion of Engineering Designs	May 2008	July 2009
Civil Works Contract		
Date of award	February 2008	April 2008
Completion of work	June 2010	December 2010

5. Project Performance Report Ratings

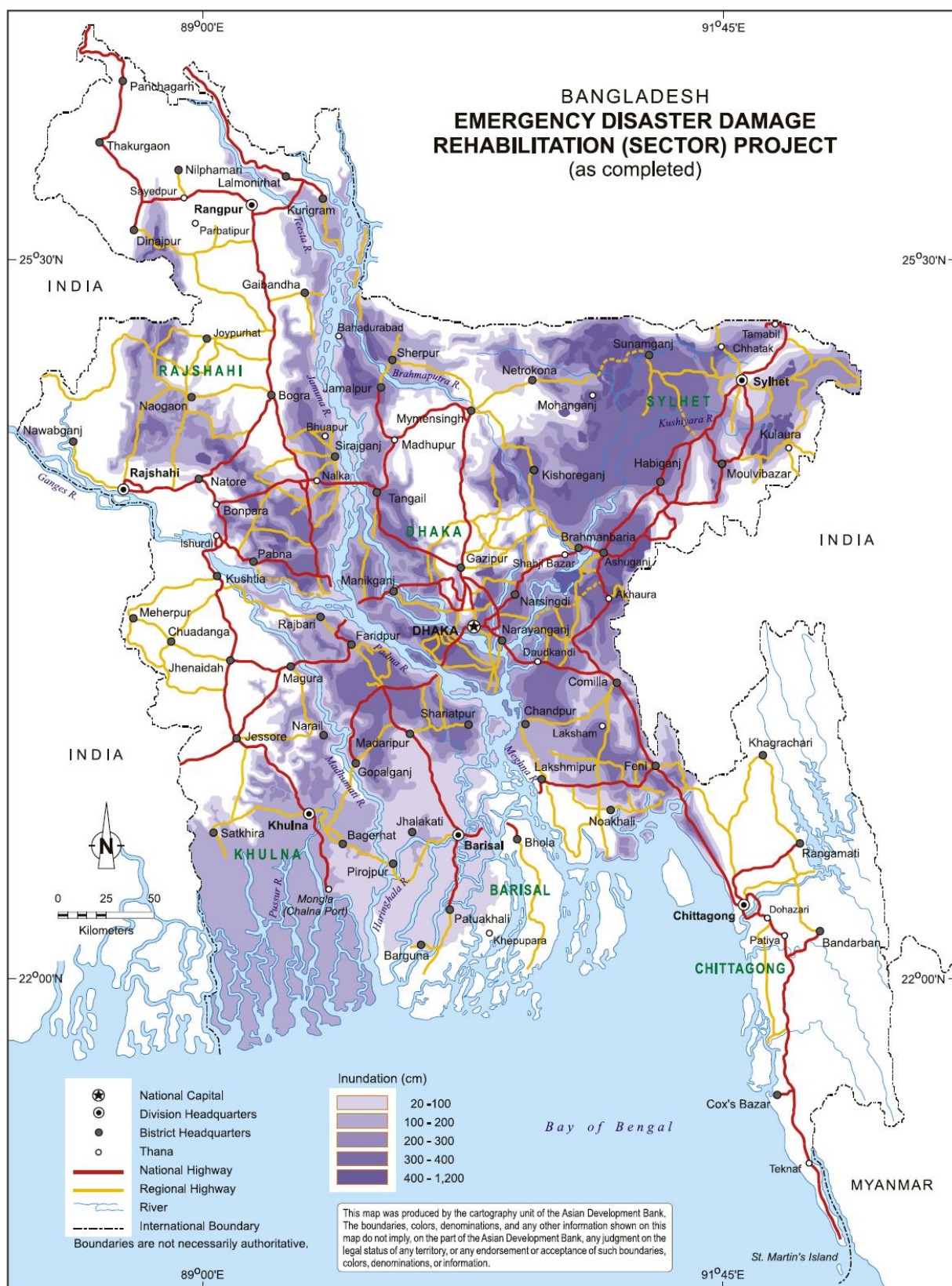
Implementation Period	Ratings	
	Development Objectives	Implementation Progress
From 1 January 2008 to 31 December 2008	Satisfactory	Satisfactory
From 1 January 2009 to 31 December 2009	Highly satisfactory	Highly satisfactory
From 1 January 2010 to 31 December 2010	Highly satisfactory	Highly satisfactory

D. Data on Asian Development Bank Missions

Name of Mission	Date	No. of Persons	No. of Person-Days	Specialization of Members
Project review mission	6–14 Aug 2008	3	9	a, b, c
Special project administration mission	2–22 Dec 2008	3	5	a, c, d
Project review mission	9–23 Sep 2009	3	5	a, b, e
Project review mission	13–25 Dec 2009	2	9	a, b
Project review mission	18–30 Apr 2010	3	5	b, c, f
Project review mission	6–21 Dec 2010	2	8	b, c
Project completion review	3–17 Mar 2011	3	15	b, g, h

a = senior project implementation officer; b = project implementation officer; c = project analyst; d = transport specialist; e = head, water resource management; f = social development and gender officer; g = country director; h = project completion report consultant.

MAP



I. PROJECT DESCRIPTION

1. The Emergency Disaster Damage Rehabilitation (Sector) Project was formulated in response to the request of the Government of Bangladesh to the Asian Development Bank (ADB) for emergency assistance following severe flooding during July–September 2007, inundating 42% of the country's land mass in 46 out of 64 districts; and the devastating Cyclone Sidr that hit 30 districts during 15–16 November 2007, affecting about 9 million people. The combined impact of floods and Sidr on the population, properties, and infrastructure was devastating—affecting 51 districts and about 25 million people with loss of 4,371 lives, damage to 1.2 million household dwellings, and a total loss to the economy of about \$1.05 billion. The disaster rendered serious damages to infrastructure and other assets. Consequently, it disrupted economic activities—inflicting heavy losses on agricultural and industrial output, and slowed down the growth in services.

2. The main objective of the project was to contribute to sustainable economic growth by minimizing the devastating impact of the 2007 floods and cyclone, and mitigating the future risk from similar calamities. This was to enable the early restoration of the damaged infrastructure and thereby help the resumption of a normal level of economic and social activities in the affected areas. The project also aimed at supporting capacity building and the government's disaster preparedness, with improvement to the early warning systems. The project followed a sector approach that proved to be appropriate, as it allowed a mechanism for early response and flexibility in selection of subprojects under different geographical area and components. The project framework at appraisal, compared with the achievements of the project, is in Appendix 1.³

3. The project comprised five components:

- (i) **Part A: Quick disbursement component.** Provision for import financing for essential commodities and inputs, notably for agriculture, required to (a) mitigate the adverse impact of the flood and cyclone, and (b) facilitate quick recovery particularly in the agriculture sector.
- (ii) **Part B: Rural infrastructure.** Rehabilitation and restoration of rural infrastructure in 23 districts, including 3,000 kilometers (km) of rural roads and 9,000 meters of bridges and culverts; and build and/or repair of 300 flood and cyclone shelters to help communities, particularly the poor, during future natural disasters.
- (iii) **Part C: Municipal infrastructure component.** Rehabilitation of urban infrastructure, including 700 km of roads, 65 km of drains, 850 meters of bridge in 30 *pouroshavas* (municipalities).
- (iv) **Part D: Roads component.** Rehabilitation of 800 km of national, regional, and *zila* (district) roads, and 64 bridges and culverts within seven road zones of the country.
- (v) **Part E: Water resources component.** Rehabilitation of flood control, drainage and irrigation facilities, and repair of embankment breaches, including repair and/or replacement of flood control structures, protective works, and canals under 331 subprojects in 47 districts.

4. The project also strived to ensure enhanced governance by supporting financial management, procurement audit, and independent oversight and scrutiny of subproject selection, contract implementation, and monitoring. ADB financed a related technical assistance

³ The project framework at appraisal has since been modified to conform to ADB's revised design and monitoring framework.

(TA)⁴ project with a grant from its Technical Assistance Special Fund (TASF) for this purpose.

5. The executing agencies for the project components were the Finance Division, Ministry of Finance for part A; the Local Government Engineering Department (LGED) for parts B and C; the Roads and Highways Department (RHD) for part D; and the Bangladesh Water Development Board (BWDB) for part E. ADB approved a loan⁵ of SDR75,899,000 (equivalent to \$120 million) from ADB's Special Funds resources, which financed part of the cost of the project. The remaining investment cost was financed by the government (\$30 million equivalent) and other cofinanciers (\$70 million equivalent).

II. EVALUATION OF DESIGN AND IMPLEMENTATION

A. Relevance of Design and Formulation

6. The project was designed while ADB's country strategy and program, 2006–2010⁶ was in force. The overall strategic objective was poverty reduction by fostering economic growth through development of infrastructure. In addition, improved efficiency in disaster management—by adopting a holistic approach integrating disaster prevention, awareness building, and developing a culture of disaster prevention and resilience—was emphasized. The poverty reduction objective was reinforced in the government's national poverty reduction strategy.⁷ ADB's Strategy 2020⁸ also supports continued mainstreaming of disaster risk management, and providing early and medium-term response and assistance. To maximize the benefits of the project, areas with a higher incidence of poverty were selected for assistance under the project. The project's design and formulation were thus relevant to ADB's and the government's development strategies at appraisal, and were followed during implementation.

7. The project aimed at rehabilitation and improvement of key physical and social infrastructure to pre-flood conditions, and mitigation of damages from future floods by applying flood-resistant designs, where applicable. The infrastructure and civil works completed under the project contributed to resumption of normal economic activity by improving transportation links between agricultural farms and marketplaces, and *upazila*⁹ and district headquarters—thereby reducing travel time. This contributed to reduced transportation costs. The project also created new employment opportunities for local skilled and unskilled labor, which increased people's purchasing capacity, resulting in increased market demand, productivity, and higher gross domestic product. The project was designed and formulated to reduce poverty and contribute to Bangladesh's economic recovery, and thus was relevant to ADB's country strategy at appraisal and remains relevant at completion by largely achieving these objectives.

8. Two out of nine ADB loans providing disaster emergency assistance to Bangladesh have been post-evaluated while one was validated.¹⁰ The lessons learned from these post-

⁴ ADB. 2008. *Technical Assistance to the People's Republic of Bangladesh for Financial Management and Monitoring*. Manila (TA 7057-BAN, for \$200,000, approved on 31 January).

⁵ ADB. 2008. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of Bangladesh for Emergency Disaster Damage Rehabilitation Project*. Manila (Loan 2409-BAN[SF], approved for the amount of \$120 million equivalent on 31 January).

⁶ ADB. 2005. *Country Strategy and Program: Bangladesh, 2005–2007*. Manila.

⁷ Government of Bangladesh. 2005. *National Strategy for Accelerated Poverty Reduction*. Dhaka.

⁸ ADB. 2008. *Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank, 2008–2020*. Manila.

⁹ The divisions of Bangladesh are divided into 64 districts or *zila*. The districts are further subdivided into 493 subdistricts or *upazila*.

¹⁰ PEO466, October 1996, ADB. 1988. *Flood Rehabilitation Project*. Manila (Loan 882-BAN[SF]); PEO444, August 1995, ADB. 1988. *Flood Damage Restoration Project*, Manila (Loan 892-BAN[SF]); and PCV:BAN 2009-16, December 2009, ADB. 2005. *Emergency Flood Damage Rehabilitation Project*, Manila (Loan 2156-BAN[SF]).

evaluation and validation reports and ADB's organizational experience in disaster assistance¹¹—focusing on the need for quick restoration, and improvement where necessary, of the damaged infrastructure—were followed in designing the project at appraisal,¹² and were mostly accomplished at project completion.

9. The project components were designed and implemented in accordance with government policy. Part A (quick disbursement) was compatible with the government's policy on food security to be self-reliant in food supply by augmenting agricultural output. The design for part B (rural infrastructure) was in line with government's 3-year rolling development plan, 2008–2010, which aimed to improve basic physical infrastructure in rural areas for economic development. Part C (municipal infrastructure) conformed to the objectives of the government's national poverty reduction strategy to improve municipal infrastructure. The design for part D (roads) was consistent with the recommendations of the road master plan,¹³ which aimed at sustaining the improved riding quality of the roads and thereby reducing vehicle operating costs. Part E (water resources) was designed and implemented in accordance with the government's National Water Policy,¹⁴ which aimed at taking “appropriate measures to provide desired levels of protection for life, property, vital infrastructure, agriculture and wetlands.” The design was also consistent with the government's Flood Action Plan, formulated after the 1987 and 1988 floods, which helped determine the most appropriate action for coping with floods.

B. Project Outputs

10. Project outputs after completion substantially conformed to the project design at appraisal. The major outputs achieved under each of the components are briefly described in the following sections. Details of the appraisal and detailed assessment targets compared with the actual outputs achieved are in Appendix 1. The “as completed” maps for the four physical project components are in Appendix 2.

1. Part A: Quick-Disbursement Component

11. The component helped the government in import financing of essential commodities and inputs to mitigate the adverse impacts of the 2007 floods and cyclone on agriculture and livelihoods. Following the loan becoming effective on 19 February 2008, ADB on 21 February 2008 disbursed the entire amount of \$49.90 million to the government through the Ministry of Finance, Finance Division. In addition, subsequent to the signing of a cofinancing agreement on 7 December 2008 with the Government of the Netherlands for cofinancing of \$24.0 million equivalent for part E: water resources component, ADB on 23 December 2008 withdrew \$12.57 million equivalent of loan funds from part E and reallocated to part A: quick disbursement component, which was also disbursed quickly. In addition, out of \$60.00 million equivalent cofinanced by the Japan International Cooperation Agency (JICA), \$25.56 million equivalent was earmarked for quick disbursement and was disbursed on 26 March 2008.

¹¹ ADB. 2007. ADB's Disaster and Emergency Assistance Policy; and Positioning ADB's Disaster and Emergency Assistance: Policy in a Changing Regional Environment. Manila (drafts); C. Benson and W.T. Linklaen-Ariens. 1999. Rehabilitation after Disasters. A Review of Lessons Learned and Emerging Issues. Manila: ADB (third draft).

¹² ADB. 2008. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Technical Assistance Grant to the People's Republic of Bangladesh for the Emergency Disaster Damage Rehabilitation Project*. Manila (Loan 2409-BAN[SF], paras 30–31).

¹³ Government of Bangladesh. Ministry of Communications. Roads and Highways Department. 2009. Road Master Plan. Dhaka.

¹⁴ Government of Bangladesh, Ministry of Water Resources. 1999. *National Water Policy*. Dhaka.

2. Part B: Rural Infrastructure

12. It was envisaged at appraisal that 3,000 km of *upazila* and union roads, and 9,000 meters of bridges and culverts in 23 districts would be rehabilitated, with improved slope protection works and additional drainage facilities. In addition, 300 flood, cyclone, and livestock shelters were planned for construction and repair to help the vulnerable communities during future floods. However, actual works accomplished under this component were rehabilitation of 860.71 km of *upazila* and union roads, 4,996.90 meters of bridges and culverts on *upazila* and union roads, 15 flood refuge shelters, 10 cyclone shelters, and 13.81 km of flood protection works.

13. The backlog in the rehabilitation of infrastructure can be attributed to the increased unit cost of construction during the substantial time that elapsed between the preliminary rapid damage assessment, undertaken immediately after the recession of the 2007 flood, and the detailed damage assessment during design and planning. Damages to the infrastructure further deteriorated from continued use during the long interval, requiring extensive rehabilitation and improvement, at a higher unit cost per unit. In addition, complying with the project objective to rehabilitate infrastructure with a flood-resistant design, the unit cost became higher than assessed. Budgetary constraints led to unavoidable shortfalls in the quantum of rehabilitation.

3. Part C: Municipal Infrastructure

14. It was envisaged at appraisal that this component would rehabilitate secondary towns infrastructure, including 700 km of roads, 65 km of drains, 850 meters of bridges and culverts, and footpaths in 30 *pourashavas* of the country. Actual implementation was 628.44 km of municipal roads, 900 meters of bridges/culverts, and 96.26 km of drains. Repair work on footpaths was excluded from the scope of this component, as the *pourashavas* undertook the works. Loan savings and fluctuations in the exchange rates between the US dollar and taka financed the increase in actual works over the targets.

4. Part D: Roads

15. It was estimated at appraisal that the component would rehabilitate total 800 km of national, regional, and *zila* (district) roads, 656 m of bridges, and 370 m of culverts within the seven zones of RHD. At completion, all these targets were substantially achieved.

5. Part E: Water Resources

16. The targeted rehabilitation for embankments and protective works in the flood damage assessment report was almost fully achieved, albeit with substantial delays, notwithstanding several constraints, including the seasonal nature of the works, protracted performance of the contractors, and delays in providing government counterpart funding. Against a target of 343 km of embankment works, the actual works totaled 337 km. Protective work was estimated at 35.5 km at appraisal and ultimately amounted to 35 km. However, the achievement on irrigation and drainage channels (28.755 km) and water control structures (75 km) matched appraisal targets.

C. Project Costs

17. The total project cost at appraisal was \$220 million equivalent, out of which \$111.65 million (about 51%) was in foreign exchange (including \$2.0 million on account of service charges and interest during construction) and \$108.35 million (about 49%) in local currency, including taxes and duties. ADB's loan of \$120.0 million was to finance 54.55% of the total project cost. At appraisal, cofinancing of \$10 million equivalent by the Canadian International Development Agency (CIDA), and \$60 million by JICA was envisaged, and this

was reflected in the appraisal cost estimates.

18. The actual project completion cost estimated by the project completion review (PCR) mission was \$280.75 million equivalent. ADB financed \$118.15 million equivalent (41.74%), JICA \$81.35 million equivalent (28.97%), CIDA \$9.00 million equivalent (3.20%), the Government of the Netherlands \$23.23 million equivalent (8.27%), and the OPEC Fund for International Development (OFID) \$10.14 million equivalent (3.61%)¹⁵. The government financed the remaining \$38.88 million equivalent in local costs. The increase in actual project cost is mainly attributed to the additional cofinancing, committed after appraisal, by the Government of the Netherlands and OFID. In addition, substantial fluctuation of exchange rates between the yen and US dollar¹⁶ increased the actual amount available under JICA cofinancing from \$60.0 million at appraisal to \$81.35 million at project completion. The devaluation of the taka against the US dollar was another factor. Loan savings made under part D (roads) and part E (water resources) were reallocated to part C (municipal infrastructure), enabling an increase in outputs under this component.

19. Details of appraisal and actual costs for each component are in Appendix 3. For ease of comparing costs, the local currency costs incurred by the executing agencies were converted into US dollars using the prevailing exchange rate during each transaction.

D. Disbursements

20. Since no disbursement schedule was prepared at appraisal, the PCR mission developed a projection of disbursements (Appendix 4) based on the project implementation schedule planned at appraisal. An amount of \$12.47 million equivalent of loan funds was reallocated from part E (water resources) to part A (quick disbursement) following cofinancing by the Government of the Netherlands confirmed on 7 December 2008 earmarked for part E exclusively (para.13). The Government of the Netherlands approved a grant for \$24.0 million equivalent, CIDA a grant for \$10.0 million equivalent, JICA a loan for \$60.0 million equivalent, and OFID a loan for \$20.0 million equivalent. ADB administered all cofinancing. From the first disbursement (21 February 2008) to the final disbursement, 38.5 months elapsed compared with 35.0 months envisioned at appraisal. All rehabilitation works were completed by the loan closing date (31 December 2010) but ADB kept the loan account open until 20 April 2011 for disbursement of eligible withdrawal applications submitted late by some executing agencies. At completion, ADB financing was SDR75,871,882.17 equivalent (\$118,154,891.28 equivalent). The loan saving of SDR27,117.83 equivalent (\$43,333.75 equivalent) was cancelled on 20 April 2011.

21. There was a backlog of disbursement under part D (roads) and part E (water resources). For part D, the backlog was mainly due to the (i) protracted performance by some civil works contractors, and (ii) occasional delays in releasing government counterpart funds. The backlog under part E was attributed to (i) slower-than-expected progress of civil works resulting from underperformance by some contractors and the seasonal nature of the works for waterborne structures and embankments, (ii) delays in releasing government counterpart funds, and (iii) BWDB's organizational requirement for inspection of the dumping materials on site by a one-member task team prior to certification of the contractor's payments. These impediments were, however, substantially mitigated later during implementation through effective

¹⁵ As envisaged at appraisal, the ADB loan was approved as umbrella or standby financing on the understanding that part of the \$120 million loan would be reallocated once grant financing became available from the Government of the Netherlands. The reallocation of \$12.47 million equivalent was made when cofinancing became available from the Government of the Netherlands (para. 20).

¹⁶ Exchange rates between the yen and US dollar were \$1 = ¥116 at appraisal and \$1 = ¥83.13 at project completion.

interventions by the project steering committee (PSC), executing agencies, and ADB.

22. As envisaged at appraisal, imprest accounts were established for each executing agency, except part D (roads). Reimbursement procedures for current ADB-financed projects were followed for the roads component (part D). ADB's statement of expenditure procedure was followed to reimburse eligible expenditures and liquidate advances to the imprest accounts. Following lessons learned from ADB's previous emergency assistance loans, the imprest ceiling under the loan was raised from 10% to 20% of the loan amount, corresponding to the respective part to ensure uninterrupted cash flow to work sites. The executing agencies' imprest accounts were well maintained and statement of expenditure procedures facilitated timely payment to consultants and contractors. Considering the emergency nature of the project, the loan agreement provided for retroactive financing which remained within the prescribed ceiling of 30% of the total loan amount allocated to each part of the project. The provision of retroactive financing was used in making payments to the four teams of consultants, which, following the provision of advance action, commenced their services from 1 January 2008, 1 month prior to approval of the ADB loan (31 January 2008), and more than 1.5 months ahead of loan effectiveness (19 February 2008).

E. Project Schedule

23. ADB approved the loan on 31 January 2008. The loan agreement was signed on 4 February 2008 and became effective on 19 February 2008. The loan was closed on 31 December 2010, as envisaged at appraisal. In view of the emergency nature of the loan, it was stipulated at appraisal that all civil works subprojects would be completed by 30 June 2010, 30 months from loan approval. However, to utilize the savings generated by part D: roads generated from lower-than-estimated bid prices, LGED under part C (municipal infrastructure) undertook additional subprojects. ADB subsequently extended the completion time for all subprojects to 31 December 2010. As of June 2010, overall physical progress of civil works was 92% for part B (rural infrastructure), 91% for part C (municipal infrastructure), 90% for part D (roads), and 80% for part E (water resources). All subprojects were completed by 31 December 2010, the delay mainly attributed to the protracted procurement of civil works. Although these delays did not adversely impact the overall cost structure and project implementation schedule (except in the water resources component), timely action by some executing agencies could have minimized such delays, and project benefits could have reached affected people much earlier. The project implementation schedule is in Appendix 5.

F. Implementation Arrangements

24. The implementation arrangements followed were as planned at appraisal. The executing agencies for the five components were the Ministry of Finance, Finance Division for part A; LGED for parts B and C; RHD for part D; and BWDB for part E. Each executing agency established a project management unit headed by a full-time project director responsible for project implementation and coordination. In some components, notably in parts D and E, the project directors changed several times, mainly because of promotion or transfer to other wings of the executing agencies, or retirement. This did not adversely affect project implementation. As in previous ADB-financed emergency assistance projects, the existing PSC¹⁷ was reactivated with overall responsibility for coordination of project implementation. Chaired by the Member, Programming Division of the Planning Commission, Ministry of Planning, the PSC

¹⁷ A PSC was created for the 1998 Flood Damage Rehabilitation Project and found to be very effective. It comprised members of the Physical Infrastructure and Agricultural Divisions of the Planning Commission, and representatives from the Ministry of Finance, Economic Relations and Finance divisions; the Implementation, Monitoring and Evaluation Division (IMED) of the Planning Commission; and different line Ministries concerned.

effectively discharged coordination and resolution of interagency issues, as well as monitoring overall project implementation. Coordination among ADB and executing agencies, government agencies, consultants, and contractors was adequately maintained through quarterly PSC meetings. PSC activities proved very effective in early identification of problems and deciding on the remedial actions, thereby minimizing implementation delays. The Bangladesh Resident Mission hosted frequent internal coordination meetings with the project directors and consultants, and reviewed the physical progress in each component, discussed problems, and agreed on measures to resolve these.

25. In view of the urgency of the project and the need to initiate flood and cyclone damage rehabilitation before the next monsoon season, ADB approved advance action for procurement of goods, services, works, and recruitment of consultants, provided it took place on or after 27 September 2007, the starting date for the damage and needs assessment and project fact-finding. ADB also approved retroactive financing of eligible expenditures for a maximum of 30% of the total loan amount¹⁸. The provisions of advance action and retroactive financing were used in mobilizing the consultants ahead of loan approval and making payments for the services rendered (para. 24).

26. Considering the multicomponent and complex nature of the project, the overall implementation arrangements were highly satisfactory. The provision of cofinancing, confirmed after appraisal, by the Government of the Netherlands in grant and JICA in loan, triggered a major change in project scope and brought enhanced benefits to the affected people.

G. Conditions and Covenants

27. The status of compliance with the loan covenants is in Appendix 6. All the loan covenants were generally relevant and practical, particularly the one (Section 5, para. 16 of the loan agreement) stipulating higher design standards for rehabilitation under part D (roads), which was followed by other components as well; this was highly rational, aiming at reducing the damage from future floods. The borrower and executing agencies generally complied with the covenants and substantially met reporting requirements. The executing agencies, however, submitted their project completion reports separately which, to some extent, lacked uniformity of format and the data and information provided were inadequate in some cases (particularly for part D [roads]). This was largely caused by the executing agencies' lack of familiarity with ADB's reporting requirements, and reluctance to move away from the government's traditional format¹⁹ for post-evaluation of projects and public sector investments. As warranted by the loan covenants, the executing agencies maintained separate records and accounts on transactions for goods and services financed under the loan. The accounts were audited annually by the government²⁰ and independent auditors, and the audited accounts were generally submitted to ADB on time which substantially met the requirements of the covenant. As stipulated by the loan covenants (other covenants, sections 3 and 4), the executing agencies implemented the project ensuring wider participation by women and provided employment to about 3.20 million women. This was in line with ADB's policy emphasizing the importance of gender-targeted activities as a

¹⁸ ADB approved retroactive financing for eligible expenditures for the immediate rehabilitation of key infrastructure and facilities and for consulting services subject to the expenditures conforming to agreed procedures and were certified by the executing agencies and consultants. Retroactive finance was allowed on specific conditions (ADB. 2008. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Technical Assistance Grants to the People's Republic of Bangladesh for the Emergency Disaster Damage Rehabilitation Project*. Manila, para. 57).

¹⁹ IMED maintains a separate reporting format, substantially different from that of ADB, for post-evaluation of government projects.

²⁰ The Foreign Aided Projects Audit Department audited the executing agencies' accounts on behalf of the government.

driver for change in developing countries.

H. Related Technical Assistance

28. The ADB loan included an associated TA grant for \$200,000 for Financial Management and Monitoring.²¹

29. The overall objective of the TA was to assist the borrower in monitoring the project. The TA was to provide support to the PSC and its secretariat, and the Implementation, Monitoring and Evaluation Division (IMED) of the Planning Commission in (i) financial management and carrying out monitoring functions effectively; (ii) evaluation of project performance; and (iii) third party scrutiny of subprojects, and performance of executing agencies and loan consultants. The IMED was the implementing agency for this TA. The TA agreement was signed on 28 April 2008 and implemented over 35 months. The TA team comprised two national individual consultants working in parallel, a financial management specialist, and an engineering specialist with intermittent inputs of 24 months each. The TA team was fielded by 20 November 2008 and completed their assignments in August 2010. The consultants made recommendations on procurement and performance improvement of the project after reviewing the monthly and quarterly reports, and inputs received through frequent discussions with the executing agencies and consultants, and participation in ADB review missions. Procurement-related issues were addressed/resolved under the TA with the help of executing agencies and project consultant's and ADB's interventions, as required. The consultants advised the executing agencies regularly on performance improvement in project monitoring. Risk mitigation measures were put in place, ensuring smooth implementation. Details of the TA and its outputs are in the TA completion report (TCR) in Appendix 7. The TCR has been prepared concurrently with the project completion report and is being circulated with this report²². Overall, the TA was rated "successful".

I. Consultant Recruitment and Procurement

1. Consultant Recruitment

30. Recruitment of consultants was as planned at approval and complied with ADB's Guidelines on the Use of Consultants (2007, as amended from time to time). In view of the project's short implementation schedule, multiple components, and large numbers of subprojects dispersed over large geographical areas, ADB for reasons of expediency and efficiency approved advance action in executing agencies' recruitment of consultants, as stipulated in the loan agreement. Because of the emergency nature of the project, ADB and the borrower agreed to single-source selection of consultants based on ADB-approved criteria.²³

31. ADB, following a request by the borrower represented by the Economic Relations Division, Ministry of Finance, directly recruited four teams of international and local consultants, one for each infrastructure component, in accordance with ADB's Guidelines on the Use of

²¹ ADB. 2008. *Technical Assistance to the People's Republic of Bangladesh for Financial Management and Monitoring*. Manila (TA 7057-BAN, for \$200,000, approved on 31 January 2008).

²² ADB. 2011. Technical Assistance Completion Report. *Project Administration Instructions*. PAI 6.08. Manila (para. 7, February) stipulates that, "if the TCR is being prepared concurrently with the PCR, append it to the PCR and note the salient points in the PCR text. Include an assessment of the advisory TA performance and incorporate it in the overall assessment of the project."

²³ The general conditions for direct selection of consultants required that the consultants meet certain predetermined qualification criteria (ADB. 2008. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Technical Assistance Grants to the People's Republic of Bangladesh for the Emergency Disaster Damage Rehabilitation Project*. Manila, para. 59).

Consultants. The terms of reference of the enhanced consulting services included (i) detailed assessment and verification of damages; (ii) prioritization of subprojects; (iii) preparation of the subproject appraisal reports following the stipulated selection criteria; (iv) incorporation of flood-resistant design, where applicable, and implementation of the works; (v) supervision and monitoring of works to ensure quality control and transparency; and (vi) oversight of works and provision for improved financial management and reporting to project management units and ADB. All the consultancy contracts were signed by 22 April 2008. Consultants' teams for each of four components were fielded from 15 December 2007 following the provision of advance action under the loan agreement. It was envisaged at appraisal that the project would need an input of 178 person-months of international and 1,761 person-months of national consulting services. The actual input of consulting services at completion was 159 person-months of international and 2,150 person-months of national consulting services, without any additional cost. The reduction of international consultants' inputs and increase in national consultants' inputs were justified because the completion date of works under the relevant components shifted from 30 June 2010 to 31 December 2010, needing consultants' presence until the completion of civil works. A summary of consultants' inputs is in Appendix 8.

2. Procurement

32. Procurement of civil works, goods, and services was carried out through local competitive bidding in accordance with ADB's Procurement Guidelines (2010, as amended from time to time) as envisaged at appraisal. This also complied with the government's Public Procurement Regulations, 2003 and Public Procurement Act, 2006, which are generally acceptable to ADB for national competitive bidding procedures and were successfully used in past ADB-financed projects, including the 2004 Emergency Flood Damage Rehabilitation Project (footnote 9).

33. ADB approved the government's local competitive bidding procedures of the single-stage, one-envelope system, which was followed for procurement of civil works. ADB's approval system for award of civil works contracts was also simplified. ADB reviewed and approved tender evaluation and contract documents for the civil works for the first subproject selected by each executing agency, and for civil works exceeding a threshold of \$200,000 equivalent, prior to award of contracts. All other subprojects were subjected to post-approval or approval after award. These arrangements enabled faster award of contracts, consistent with an emergency.

34. As many as 851 civil works contract packages were procured, comprising 340 packages for part B (rural infrastructure), 276 packages for part C (municipal infrastructure), 98 packages for part D (roads), and 204 for part E (water resources). Procurement of all contract packages went smoothly, except in the water resources component, where delays of an average lead time of 10 months were attributed to the prolonged executing agencies' and government's approval process. ADB closely monitored the procurement process and intervened where lack of transparency and delays were observed. In BWDB, 10 contract packages under JICA financing were rebid to overcome the attempts by a few unscrupulous contractors for bid syndication. This corrected the impediment and carried a strong message to the contractors involved in the remaining bidding process for other contracts.

J. Performance of Consultants, Contractors, and Suppliers

1. Consultants

35. The performance of consultants under all four components was *generally satisfactory*, given the multitude of small contracts and spread of the subproject locations. However, the construction supervision team under part E (water resources) faltered at times, with reported

connivance of some national consultants with the contractors. BWDB, however, moved quickly and terminated the employment of 10 national consultants who were found guilty after investigation. The contribution of consultants in project preparation, monitoring, supervision, and quality control of works resulted in timely utilization of the allocated funds and generation of additional subprojects for some components (notably, municipal infrastructure) using loan savings from other components. This was adequately reflected in the good performance of LGED and RHD. However, the consultants' efficiency and output could have been enhanced by (i) greater vigilance by their staff deployed on site, (ii) closer coordination and cooperation between the project directors and the consultants' team leader and senior staff based in Dhaka, and (iii) improved integrity of the consultants' field staff in supervising the contractors' works.

2. Contractors

36. Most of the project contractors performed satisfactorily and the quality of the completed works compared favorably with the average standard of similar civil works in Bangladesh. A few incidences of implementation delays were due to contractor's lack of management capacity and less-than-adequate financial strength to mobilize resources and equipment on time. This adversely affected the timely completion and quality of some contracts. Under part E (water resources), following a suggestion by the ADB review mission, BWDB penalized the contractors of 17 slow-moving contract packages. This alerted the contractors and prompted them to complete the remaining works within the extended construction deadline of 31 December 2010.

K. Performance of the Borrower and the Executing Agencies

37. Notwithstanding the complexity of the project with a short implementation period, and the involvement of five sectors, the performance of the borrower and executing agencies was *satisfactory*. This contributed to successful achievement of project implementation. The PSC, revived quickly within the Planning Commission, performed well and fulfilled most of its obligations in monitoring project implementation by different executing agencies. However, during the early stages of the project, substantial delay in approving the award of contracts and releasing government counterpart funds delayed the progress of works.

38. Of the four executing agencies of infrastructure components, the performance of LGED (for both parts B and C) is considered *highly satisfactory*. Under part B, LGED successfully completed rehabilitation and improvement of 860.71 km of rural roads and 4,996.90 meters of bridges and culverts. Under part C, LGED successfully rehabilitated 628.44 km secondary town roads, 96.26 km of drains, 944.93 km of bridges/culverts, and 62.46 km of –sides and slope protection works. In addition, part C undertook and completed seven contract packages utilizing the loan savings generated by part D (roads) from lower-than-estimated bid prices. LGED completed all these subprojects within the extended construction deadline of 31 December 2010 despite initial delays in contract awards. The quality of works completed by LGED was *satisfactory*.

39. RHD's overall performance in implementing 98 subprojects (84 roads and 14 bridges) for rehabilitation and improvement of about 733 km of roads and 1,026 meters of bridges and culverts was *satisfactory*, albeit constrained by some implementation delays resulting from lack of capacity and poor performance by some contractors. Notwithstanding these impediments, RHD completed all contracts by the loan closing date of 31 December 2010.

40. The performance of BWDB in implementing 204 subprojects was slightly weakened by physical and management constraints. The seasonal nature of the waterborne works allowed a limited construction period (November–April) and required interim protection of the works completed from the onslaught of the next monsoon season. This caused delayed

implementation in some of the critical subprojects. The project directors under this component were changed twice, which disrupted coordination between the project director and the consultants and the field staff. Overall, the performance of BWDB is considered *satisfactory*.

41. Considering the emergency nature of the project, no institutional development was envisaged at appraisal, except the limited support under the attached TA (paras. 28–29).

42. In summary, the performance of the borrower and executing agencies was *satisfactory*.

L. Performance of the Asian Development Bank

43. ADB's performance is considered *highly satisfactory* in its timely response to assist the government undertake rehabilitation works and process the loan in the shortest possible time (loan was approved in 2.5 months after appraisal). The resident mission processed and administered the loan. The project design incorporated lessons learned from eight previous ADB-financed emergency assistance projects in Bangladesh. Project formulation and implementation arrangements were *generally satisfactory*. ADB allowed advance procurement action for goods, services, and recruitment of consultants, and the provision of retroactive financing which was effective and time saving. ADB also allowed simplified approval procedures²⁴ of contract awards, which were realistic for the project. The resident mission carried out effective coordination through quarterly PSC meetings and monthly meetings with the executing agencies' project directors. ADB fielded five project review missions and one special project administration mission, which have been quite effective in identifying and resolving implementation issues on site.

III. EVALUATION OF PERFORMANCE

A. Relevance

44. The project design envisaged sustainable economic growth by minimizing the devastating impact of the severe floods and cyclone, and reducing the risk of similar disasters. This was relevant to the project and was mostly followed during implementation. The project restored and/or improved the flood and cyclone-damaged infrastructure, and the appraisal objectives were almost fully achieved at project completion. With the infrastructure restored, affected sectors could recover from the disasters and contribute to economic growth, at least at pre-flood levels. In addition, the improved design of the infrastructure rehabilitated will contribute to mitigation of damages from future natural calamities. No major changes were made to project design during implementation. The project design is, therefore, considered *highly relevant*.

B. Effectiveness in Achieving Outcome

45. The project is considered *highly effective* as the project's outcome, as envisioned at appraisal, was fully achieved. With the restoration of the infrastructure, economic and social activities, which were disrupted by the disaster, resumed—allowing restoration of livelihoods of the affected people. Restoration of the roads and bridges provided isolated communities renewed access to markets, and nearby health and education facilities. This was evident by the considerable increase in passenger and freight traffic using the rehabilitated infrastructure. The completed infrastructure under the project benefited about 25 million affected people and stimulated economic development in the project areas by generating increased income and employment of about 15 million person-days of labor (including about 3.2 million person-days of

²⁴ Government of Bangladesh. 2000. Circular No. PD NEC-EC/NEC/Coordination-2/13/98/223. Dhaka (16 October).

women). The project's outcome also contributed to a reduction of vulnerability of the community to future disaster, as the damaged infrastructure was rehabilitated using disaster-resistant designs, where applicable.

46. In general, all the project components made notable contributions to poverty reduction in the immediate vicinity and beyond. However, a numerical assessment of the project's impact on poverty reduction could not be prepared, as the project design did not include any adequate monitoring mechanism because of time constraints. An assessment of project impacts and benefits based on the sample subprojects visited by the PCR mission is in Appendix 9.

C. Efficiency in Achieving Outcome and Outputs

47. Given the emergency nature of the project, no economic analysis was undertaken at appraisal to justify the investments. The project focused on the restoration of flood-damaged key infrastructure facilities, and capital costs were considered sunk costs. The economic benefits of such restoration activities were those that accrued at the time of initial construction but were mostly lost because of flood damage. Project-financed restoration brought infrastructure back to its original productivity and efficiency levels. These benefits are very high, though not always quantifiable for all project components.

48. In the absence of defined baseline or time-series socioeconomic data for most components, and given the fact that the damaged facilities were restored only to their pre-flood status (improved in some cases), no attempt was made to conduct economic evaluation for those components with little or no data.²⁵ Economic efficiency, as measured by the economic internal rate of return (EIRR), was assessed for two sample road sections in part D (two *zila* or district roads) because road projects are more amenable to benefit quantification and visibility of impacts. The results show that the investment has been *highly efficient*.²⁶ The calculated EIRRs were 25.50% and 53.40% for the two selected *zila* roads. These EIRRs compare favorably with the 12% economic opportunity cost of capital. Appendix 10 shows the calculated EIRRs as well as the supporting assumptions.

D. Preliminary Assessment of Sustainability

49. The rehabilitation and restoration works under the project were of an emergency nature, aimed at meeting immediate needs, and enabling a return to normal economic and social activities in the affected areas. These rehabilitated components demonstrated their ability to withstand future floods. In 2009 and 2010, during implementation of the project, regional floods inundated parts of, *Gaibandha, Kurigram, and Rangpur* districts affecting parts of the project area. The embankment protection works, and rehabilitated road and bridge projects undertaken in different components of the project did not suffer any damage. This was verified by the PCR mission while visiting several completed civil works subcomponents under the project.

50. The sustainability of the project components depends on the executing agencies' ability to preserve the rehabilitated assets through proper maintenance. The executing agencies,

²⁵ ADB. 1995. Rehabilitation Assistance after Disaster. *Operations Manual*. OM 25/BP: Manila (page 4, footnote 1) states that "the rehabilitation loan may finance numerous subprojects that are small in size and prima facie economically viable. For such small projects, internal rate of return analysis may not be feasible or practical." Also OM Section D&BP Although rigorous rate-of-return analysis may not be feasible, estimates in an order of magnitude should be provided and justified with as much detail as possible.

²⁶ According to the guidelines of ADB's Independent Evaluation Department, if the estimated EIRR exceeds 18%, a project is normally rated *highly efficient*. An EIRR less than or equal to 18% but greater than or equal to 12% indicates an *efficient* project; an EIRR less than 12% but greater than or equal to 6%, a *less efficient* project; and an EIRR of less than 6%, an *inefficient* project.

however, suffer from endemic funding shortfalls each year. The road routine maintenance budget is about \$2.0 million on average.²⁷ Periodic maintenance is allocated about \$42.0 million yearly, or a meagre \$2,000 per km. A recent study²⁸ has estimated that the actual requirement for maintenance funds may be double the present allocation. For the road subcomponents (parts B and D), the government has been seriously contemplating the establishment of a road maintenance fund (RMF). A draft RMF document²⁹ has been prepared for consideration by the Government. A committee set up by the Ministry of Communications has been reviewing the bill since 20 March 2007 and continuing deliberation on the details of the draft RMF along with other Ministries, before it is presented to the cabinet. The government is committed to establishing the RMF, which is strongly supported by the Transport Sector Coordination Wing established in the Planning Commission and presently being financed by ADB.³⁰ The subprojects under parts B, C, and D having an economic life of about 5 years, will need further periodic maintenance in 2015–2016 (most of the road rehabilitation was completed during 2009–2010). The establishment of the RMF before then (expected by 2013) will ensure adequate funding for road maintenance. The infrastructure rehabilitated, restored, and improved under part E consists mainly of permanent structures like protective works, sluice gates, and embankments that have demonstrated quality workmanships and proved their sustainability during the regional floods in 2009 and 2010. As confirmed by the PCR mission, the structures inundated by these floods were still in good condition and had not been damaged. The structures should, however, continue to be maintained by the executing agencies. Overall, therefore, the project outputs are rated “*likely to be sustainable*”.

E. Impact

51. An initial environmental examination (IEE) of the project area indicated that no significant adverse environmental impact was associated with the project. Project activities did not interfere with ecosystems, as almost all works were restorative. In a few cases, where designs were slightly modified to relocate damaged infrastructure, any adverse environmental or sociocultural effects was carefully avoided. All works were generally undertaken in existing alignments or sites, and no land acquisition and resettlement were undertaken. However, a resettlement framework was prepared at appraisal, as required under ADB’s safeguard policy for sector loans. The completed works under the project generally improved the quality of life of the rural communities, which are the principal beneficiaries. The rehabilitation works enabled normal activities to be resumed with improved access to markets, hospital, schools, and other community services. People returned to their homes and embarked on normal activities with greater assurance that physical infrastructure is well placed and adequately resistant to future natural disasters.

IV. OVERALL ASSESSMENT AND RECOMMENDATIONS

A. Overall Assessment

52. The project is rated *highly successful* based on a review of its relevance, effectiveness, efficiency, and sustainability. The project followed a sector approach, which is most appropriate

²⁷ This is to cover routine maintenance on about 21,000 km of road, for a budget of about \$126 per km.

²⁸ World Bank. 2006. *Road User Charges Study for Sustainable Road Maintenance Financing*. Washington, DC (undertaken as part of the Road Sector Reform Project, March).

²⁹ The bill sets out the purpose of the fund, the source of its revenues, the composition and general duties of the road fund board, and the preparation and review of the annual road maintenance program of the road agencies.

³⁰ ADB. 2010. *Technical Assistance to the People’s Republic of Bangladesh for Capacity Building and Support to the Transport Sector Coordination Wing of the Planning Commission*. Manila (TA 7388-BAN for \$500,000).

for emergency assistance, and allowed a flexible response within the subproject selection criteria adopted. All the subprojects were completed by the original loan closing date of 31 December 2010. Implementation of at least one component (part C: municipal infrastructure) required rescheduling to accommodate additional subprojects undertaken using anticipated saving of loan funds. The quality of works was good, as expected at appraisal. Most purposes and objectives envisioned at appraisal were achieved by the project at completion.

B. Lessons

53. For complex multisector projects, monitoring of implementation through a central PSC at a plenary ministry of the borrower is indispensable. Regular interaction between the borrower and ADB through the PSC contributed greatly to the success of the project (para. 26). The use of a sector approach proved highly beneficial in identifying eligible subprojects spread over a wide geographical area, and enabled reallocation of loan funds from one component/sector to another based on a final needs assessment and performance. Disbursement of funds through separate imprest accounts for the executing agencies handling the contracts also proved to be efficient (para. 24). When implementing an emergency assistance project, provision for strong consultant support and advance action to select and field them immediately after appraisal proved important (para. 32).

54. In Bangladesh, LGED and RHD are still the two agencies that are reasonably capable of implementing ADB-assisted emergency projects (paras. 38-42). Implementation experience suggests that emergency assistance projects generally require adequate program for capacity building in the executing agencies, with strong institutional support regarding contract administration and fostering familiarity with ADB procedures for procurement and disbursement. This will help ensure timely completion of contractual works, submission of withdrawal applications, and liquidation of imprest accounts.

55. Experience from the project demonstrated that the adoption of simplified approval procedures for procurement and other project activities is effective and enabled timely implementation of the project, and catalyzes early restoration of people's livelihood in the project-affected areas (para. 33).

56. As experienced in all past ADB-financed emergency assistance projects in Bangladesh, delegation of authority to ADB's resident mission in the borrower's country is essential for effective monitoring and immediate decision making (para. 43).

C. Recommendations

1. Project Related

57. **Future monitoring.** The government should regularly monitor the accrual of benefits from the facilities rehabilitated under different components of the project. To ensure a continued stream of benefits to the community, the government should provide adequate funds for routine, periodic, and emergency maintenance of the completed subprojects under the project through allocation in the annual development program for each fiscal year; and monitor the impacts at least annually through the executing agencies concerned. In particular, the completed subprojects related to riverbank protection and flood control embankments should be closely monitored by BWDB on a regular basis, particularly during each monsoon season, and undertake urgent remedial measures, where necessary.

58. **Future action or follow-up.** It is expected that, to reduce the recurrent backlog in providing annual maintenance budget for infrastructure under part B; rural infrastructure and part D: roads, the government will establish an RMF by 2013 or earlier, which would ensure

adequate and timely funding for infrastructure maintenance. This needs to be regularly followed up by the executing agencies and line ministries concerned, with support from key development partners including ADB. To facilitate quick implementation, BWDB should also rationalize the process of pre-inspection of dumping materials by engaging a task force led by the consultants.

59. **Additional assistance.** The government should adopt and put in place a long-term program for continued enhancement of the capacity of IMED in financial management and monitoring of infrastructure projects. This will ensure the sustainability of IMED's capacity to act as an oversight unit of the government, as envisaged by the TA for Financial Management and Monitoring attached to this loan (footnote 2).

60. **Timing of the project performance evaluation report.** A project performance evaluation report should be prepared by 2012 to assess the medium-term sustainability and long-term impacts of the project. For availability of the needed data, ADB should require the government to continue monitoring the performance of the completed subprojects and reporting the project benefits until the project performance evaluation report mission is fielded.

2. General

61. For successful implementation of future emergency assistance projects, the need for establishing a central coordination and monitoring unit as the steering committee should be identified and planned at appraisal. The funding and disbursement mechanism should include establishment of imprest accounts by executing agencies following ADB's statement of expenditure procedures. These will help expedite implementation of the project through adequate coordination and ensuring seamless cash flow for the contractors and consultants.

62. The number of contract packages under the project should be restricted to a reasonable limit by enlarging the contract sizes to the extent possible through contiguity. This should facilitate ease of contract administration and involvement of more resourceful contractors in the project works, and should ensure high quality and sustainability of workmanship.

63. The project should engage an independent procurement auditor reporting to the PSC to ensure enhanced integrity in procurement of goods and civil works contracts.

64. Cofinancing by other bilateral and multilateral sources normally enhances the project benefits. However, considering the short span of project implementation, the need for uninterrupted flow of funds to the contractors and consultants is indispensable (para. 20). Disbursement procedures may, therefore, be discussed and agreed in advance to allow for this.

65. Given the complex and protracted approval procedures of some executing agencies, advance action for procurement of equipment and materials, recruitment of consultants, and provision for retroactive financing, as approved for the project, should be replicated in all future ADB-supported emergency assistance projects.

DESIGN AND MONITORING FRAMEWORK

Design Summary	Appraisal Performance Indicators/Targets	Project Achievements	Key Issues and Recommendations
Impact Contribute to sustainable economic growth by minimizing the devastating impact of severe floods and cyclone in 51 districts for about 25 million disaster affected people	<ul style="list-style-type: none"> Local market trading is restored after project completion GDP growth is restored to predisaster level or higher 1 year after project completion 	<p>Economic recovery and increased economic activity have been achieved, as evidenced by the increased volume of traffic in the project areas and increased market transactions.</p> <p>All pre-disaster assets—i.e., road, bridge, water protection facilities (including embankments), etc.—have been restored and improved. GDP growth is projected to improve to 6.3% in 2011 from 5.7% in 2009 and 5.8% in 2010.</p>	<p>Increases in traffic volumes on selected roads are described in Appendix 10.</p> <p>The restored assets prevented damage in the 2009 and 2010 regional floods.</p>
Outcome 1. Restore economic and social activities in flood and cyclone affected areas 2. Reduce vulnerability to future disasters	<p>Rehabilitated infrastructure, adopting appropriate flood-resistant design standards</p> <p>Reduced damage to infrastructure from future floods and cyclones</p> <p>Improved access to health and education facilities and markets</p> <p>Improved incomes and self-reliance</p>	<p>During regional floods in 2009 and 2010, the embankment protection and other works undertaken in the water resources sector preserved the assets that were rehabilitated under the project.</p> <p>Access to health and education facilities has improved as the rehabilitated roads have shown a considerable increase in traffic.</p> <p>Economic development has been stimulated in the project areas, and incomes and employment have increased. Labor from local villages gained employment directly from the project during the construction period.</p> <p>The government imported large quantities of food grains, fertilizers, and other essentials using its own funds and the amount assisted under the component supplemented the government's expenditure.</p>	<p>See paras. 44–45 and Appendix 9.</p> <p>The regional floods of 2009 and 2010 did not damage the assets rehabilitated during the project.</p> <p>Increases in traffic volumes on selected roads are described in Appendix 10.</p> <p>See para. 44 and Appendix 10.</p> <p>See para. 11.</p>
Part A: Quick-Disbursing Component High unexpected expenditures by the government for flood- and cyclone-related recovery and rehabilitation efforts are partially financed	<p>Imports of \$75.56 million of high-priority items indicated in a list of goods and flood and cyclone damage rehabilitation works undertaken</p>		

Design Summary	Appraisal Performance Indicators/Targets	Project Achievements	Key Issues and Recommendations
Part B: Rural Infrastructure Rural infrastructure rehabilitated	(i) Part B: 3,000 km of rural roads and 9,000 meters of bridges and culverts rehabilitated and restored.	Rehabilitation completed by 31 December 2010 Rural roads = 860.71 km Bridges/culverts = 4,996.90 m Flood refuge shelters = 15 Nos. Cyclone shelters: 10 Nos. Flood protection works: 13.81 km	See paras. 12–16.
Part C: Municipal Infrastructure Rehabilitated municipal roads, drains, bridges and culverts, municipal footpaths and drains in slums.	ii) Part C: 700 km of roads, 65 km of drains, and 850 meters of bridges and culverts rehabilitated and restored.	Rehabilitation completed by 31 December 2010 Roads = 628.44 km Bridges and culverts = 944.93 m Drains = 96.26 km	Footpath rehabilitation was not undertaken as this was done by the municipalities themselves (para. 14).
Part D: Roads Rehabilitated national, regional and districts roads and bridges.	(iii) Part D: 800 km of roads and 64 bridges and culverts rehabilitated and restored.	Rehabilitation completed by 31 December 2010 National roads = 21 km Regional roads = 148 km District roads = 564 km Bridges = 656 m (14 Nos.) Culverts = 370 m	
Part E: Water Resources Rehabilitated flood control, drainage, and irrigation facilities	(iv) Part E: 331 subprojects implemented restoring flood control, drainage and irrigation facilities	Rehabilitation completed by 31 December 2010 Embankment = 337 km Irrigation/drainage = 28.755 km Water control structures = 75 Protective works = 35 km	See para. 45
	(v) Employment for 14 million of person-days of labor will be generated of which 20% will be for women	The project's civil construction works provided employment to about 15 million person-days of labor, including 3.2 million person-days of women	
	(vi) Restore, repair, and/or build 300 cyclone shelters	The project's scope excluded cyclone shelters as this was taken by a separate World Bank loan. Only 10 cyclone shelters were constructed under part B.	
Activities with Milestones 1. Part A Quick –disbursement request submitted by 1 February 2008	Inputs Project: Consultants input and ADB Loan of \$120 million and \$70 million funded by other cofinanciers.	Part A: 1. Loan was effective on 19 February 2008 and the amount under part A was disbursed on 21 February 2008	

Design Summary	Appraisal Performance Indicators/Targets	Project Achievements	Key Issues and Recommendations
<p>2. Part B to E</p> <p>2.1. The establishment of Government Project Steering Committee and PMU for each executing agency is operational on loan effectiveness</p> <p>2.2. The government has approved consultant contracts 2 months after loan effectiveness</p> <p>2.3. The government has approved maintenance plans 12 months after loan effectiveness</p> <p>2.4. The government approved detailed implementation schedule for 2007/2008 by loan negotiations, and subsequent annual schedules by March of the year before the related fiscal year</p> <p>2.5. The government submits retroactive financing by loan effectiveness</p> <p>2.6. The government approves the National Disaster Management Plan by February 2008</p>	<p>Government: Counterpart funding and in-kind contribution equal to \$30 million, and all relevant reports, documents, and information made available as needed.</p>	<p>1. Asian Development Bank financing: \$120 million</p> <p>2. Cofinancing from the Government of the Netherlands: \$24 million</p> <p>3. Cofinancing from JICA: \$60 million</p> <p>4. Cofinancing from CIDA: \$10 million</p> <p>5. Cofinancing from OFID: \$20 million</p> <p>6. Government's counterpart funding: \$38.88 million</p> <p>6. Technical assistance: \$200,000</p> <p>Part B to E</p> <p>1. Executing agencies' PMU were in place since December 2008 after loan appraisal.</p> <p>2. The government approved all consultants' contracts by 22 April 2008, about 2 months after loan effectiveness.</p> <p>3. Maintenance plans were approved by the government annually for each financial year in July</p> <p>4. The government, through the PSC, approved a detailed implementation schedule in February 2008, and thereafter monitored it bimonthly.</p> <p>5. The government submitted requested requests for retroactive financing for consultants fielded in advance from 1 January 2008.</p> <p>6. The government approved the National Disaster Management Policy in March 2008.</p>	

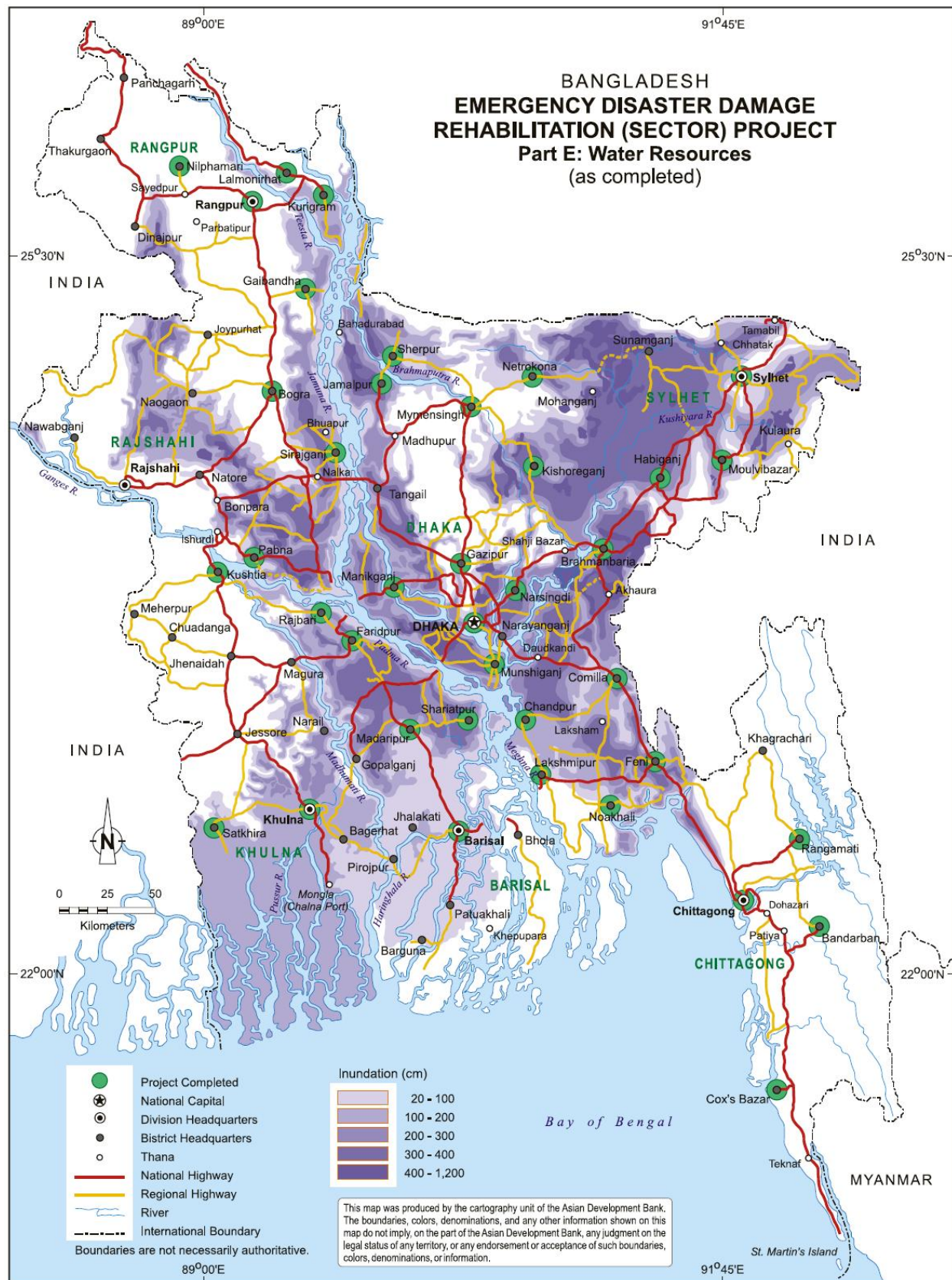
ADB = Asian Development Bank, CIDA = Canadian International Development Agency, GDP = gross domestic product, JICA = Japan International Cooperation Agency, km = kilometer, m = meter, OFID = OPEC Fund for International Development, PMU = project management unit, PSC = project steering committee.
Source: Asian Development Bank.

MAPS OF PROJECT COMPONENTS AS COMPLETED









APPRAISAL AND ACTUAL PROJECT COSTS

(\$ million)

Project Component	Appraisal Estimate			Actual	
	Foreign	Local	Total	Foreign	Local
A. Investment Costs					
1. Part A: Quick disbursement	75.56	0.00	75.56	98.14	0.00
2. Part B: Rural infrastructure	4.71	28.86	33.57	0.00	40.28
3. Part C: Municipal infrastructure	2.63	18.26	20.89	0.00	32.35
4. Part D: Roads	18.21	28.22	46.43	0.00	53.29
5. Part E: Water resources	4.41	27.29	31.70	0.00	44.18
Subtotal (A)	105.52	102.63	208.15	98.14	170.10
B. Consulting Services					
1. Part B: Rural infrastructure	0.75	1.04	1.79	1.67	0.26
2. Part C: Municipal infrastructure	0.57	0.80	1.37	1.27	0.20
3. Part D: Roads	1.73	2.40	4.13	3.83	0.60
4. Part E: Water resources	1.07	1.49	2.56	2.36	0.37
Subtotal (B)	4.13	5.72	9.85	9.13	1.43
C. Financing Charges during Implementation					
1. Interest during implementation	2.00	0.00	2.00	1.95	0
Total (A+B+C)	111.64	108.36	220.00	109.22	171.53
					280.75

Source: Asian Development Bank estimates

PROJECTED AND ACTUAL DISBURSEMENTS
(\$ million)

Year	Appraisal	Actual
2008	57.60	77.61
2009	26.40	29.29
2010	30.00	8.85
2011	6.00	2.40
Total	120.00	118.15

Source: Asian Development Bank loans financial information system.

[illegible]

STATUS OF COMPLIANCE WITH MAJOR LOAN COVENANTS

Sl. No.	Covenant	Reference in Loan Agreement	Status of Compliance	Remarks
1	The Borrower shall enable ADB's representatives to inspect the Project, the Goods and Works financed out of the proceeds of the Loan, and any relevant records and documents.	Section 4.03 of Loan Agreement (LA)	Complied	Complied
2	The Borrower shall ensure that, within two (2) months of Loan Effectiveness, the Technical Assistance Letter is duly signed by the Borrower's representatives.	Schedule 5, Para 6 of LA	Complied	Complied
3	The Borrower shall ensure that: (a) all facilities rehabilitated under the Project are properly operated and maintained by the relevant Project Executing Agency in accordance with sound practices; (b) within six months of the date of Loan Effectiveness, each of the relevant Project Executing Agencies shall prepare an action plan that will include financial requirements and management/monitoring procedures and other pertinent elements for year-round effective maintenance of rehabilitated facilities; (c) the action plan shall be submitted to PSC and ADB for monitoring; and (d) the necessary funds for operation and maintenance of all facilities supported under the Project are available, on a timely basis, during the Project, with arrangements in place for continuing O&M funding in the period after implementation of this Project.	Schedule 5, Para 7 of LA	Complied	Complied
4	The Borrower shall ensure that design standards: (a) for Subprojects under Part D are based on improved RHD standards as developed by the Project, which includes where technically feasible and justified, improvements to mitigate impact of future floods, e.g. improved slope protection, raising of road level above highest flooding level or allowing additional vents where water logging leads to overtopping; and (b) and implementation guidelines for Subprojects under Part D are based on	Schedule 5, Para 16 of LA	Complied	Complied

Sl. No.	Covenant	Reference in Loan Agreement	Status of Compliance	Remarks
	those developed under ADB's ongoing Second Small-Scale Water Resources Development Project [Loan 1831-BAN(SF)].			
Environmental Covenants				
1	The Borrower shall ensure that: (a) adequate environmental mitigation measures in accordance with the Borrower's environmental laws and regulations and ADB's Environment Policy (2002) are incorporated into all Subproject designs and implementation arrangements; (b) the agreed environmental assessment framework is implemented; (c) all Subprojects for which governmental environmental clearance is required receives such clearance prior to the award of any civil works contracts for the subject Subproject; (d) the initial environment examination or environment impact assessment and the preliminary environmental management and monitoring plan (EMMP) are prepared in accordance with the Environment Assessment and Review Procedures (EARP), reviewed and updated at the engineering design stage and submitted to ADB for approval; (e) the Project complies with the EMMP reflected in the updated IEE or EIA; (f) the EMMP is reflected as part of bidding documents and civil works contracts; and (g) civil works contractors are closely supervised to ensure that any adverse environmental impacts arising from the Project are minimized by implementing the agreed mitigating measures and standard operating practices are changed to avoid their recurrence.	Schedule 5, Para 10 of LA	Complied	Complied
Social Covenants				
1	The Borrower shall ensure that active beneficiary participation occurs in the selection, design, implementation, and O&M of all Subproject rehabilitation works carried out under the Project.	Schedule 5, Para 9 of LA	Complied	Complied
2	The Borrower shall ensure that: (a)	Schedule 5,	Complied	Complied

Sl. No.	Covenant	Reference in Loan Agreement	Status of Compliance	Remarks
	adequate environmental mitigation measures in accordance with the Borrower's environmental laws and regulations and ADB's Environment Policy (2002) are incorporated into all Subproject designs and implementation arrangements; (b) the agreed environmental assessment framework is implemented; (c) all Subprojects for which governmental environmental clearance is required receives such clearance prior to the award of any civil works contracts for the subject Subproject; (d) the initial environment examination or environment impact assessment and the preliminary environmental management and monitoring plan (EMMP) are prepared in accordance with the Environment Assessment and Review Procedures (EARP), reviewed and updated at the engineering design stage and submitted to ADB for approval; (e) the Project complies with the EMMP reflected in the updated IEE or EIA; (f) the EMMP is reflected as part of bidding documents and civil works contracts; and (g) civil works contractors are closely supervised to ensure that any adverse environmental impacts arising from the Project are minimized by implementing the agreed mitigating measures and standard operating practices are changed to avoid their recurrence.	Para 10 of LA		
3	The Borrower shall ensure that, to the extent possible, Subprojects will not require land acquisition or involuntary resettlement. In the event that land acquisition or involuntary resettlement is required for any Subproject, then the Borrower shall ensure the Resettlement Plan (RP) (including any revisions thereto on account of detailed designs) is prepared in accordance with the Borrower's applicable laws and regulations, ADB's Policy on Involuntary Resettlement (1995) and the Resettlement Framework and submit to	Schedule 5, Para 11 of LA	Complied	Complied

Sl. No.	Covenant	Reference in Loan Agreement	Status of Compliance	Remarks
	ADB for review and approval before any land acquisition is initiated. The Borrower shall ensure that: (a) no construction activities begin until ADB has reviewed and approved the RP; and (b) if impacts on indigenous peoples are identified under a Subproject, such impacts shall be addressed in accordance with ADB's Indigenous Peoples Policy (1998) and the Borrower's applicable laws and regulations, through actions outlined in the Resettlement Framework and such actions shall require approval of ADB's, prior to award of civil works contract under the Subproject			
4	The Borrower shall ensure that RPs are prepared and implemented in close consultation with the stakeholders and involve focus group discussions and meetings, particularly with the Project affected people (AP). The RPs formulated according to the approved RF shall be disclosed and made available to the affected peoples during focus group discussion meetings at the village/community level and posted on both the relevant Project Executing Agency's and ADB's websites. Complaints and grievance procedures shall be outlined in the RPs and grievance redress committees shall be established to ensure stakeholders' participation in the implementation process. Through public consultations, the APs shall be informed that they have a right to grievance redressal. Other institutional arrangements shall also be spelled out in the RPs, including involvement of NGOs in the implementation process. The EAs shall provide a bi-annual review and report to the ADB on land acquisition and all aspects of resettlement management. Besides, an annual report stipulating all aspects of land acquisition and resettlement outcomes shall be prepared by the EAs for ADB.	Schedule 5, Para 12 of LA	Complied	No resettlement issues encountered

Sl. No.	Covenant	Reference in Loan Agreement	Status of Compliance	Remarks
5	The Borrower shall ensure that no Subproject shall adversely affect vulnerable population groups, such as indigenous peoples. In the event of involvement of indigenous people in any of the Subprojects, the Borrower shall take necessary actions required under ADB's Policy on Indigenous Peoples (1998).	Schedule 5, Para 15 of LA	Complied	Complied
Financial Covenants				
1	(a) The Borrower shall (i) maintain, or cause to be maintained, separate accounts for the Project; (ii) have such accounts and related financial statements audited annually, in accordance with appropriate auditing standards consistently applied, by independent auditors whose qualifications, experience and terms of reference are acceptable to ADB; (iii) furnish to ADB, as soon as available but in any event not later than 6 months after the end of each related fiscal year, certified copies of such audited accounts and financial statements and the report of the auditors relating thereto (including the auditors' opinion on the use of the Loan proceeds and compliance with the financial covenants of this Loan Agreement as well as on the use of the procedures for imprest accounts and statement of expenditures), all in the English language; and (iv) furnish to ADB such other information concerning such accounts and financial statements and the audit thereof as ADB shall from time to time reasonably request.	Section 4.02. of Loan Agreement	Complied	Complied
2	(b) The Borrower shall enable ADB, upon ADB's request, to discuss the Borrower's financial statements for the Project and its financial affairs related to the Project from time to time with the auditors appointed by the Borrower pursuant to Section 4.02(a) here above, and shall authorize and require any representative of such auditors to	Section 4.02. of Loan Agreement	Complied	Complied

Sl. No.	Covenant	Reference in Loan Agreement	Status of Compliance	Remarks
	participate in any such discussions requested by ADB, provided that any such discussion shall be conducted only in the presence of an authorized officer of the Borrower unless the Borrower shall otherwise agree.			
3	The Borrower shall allocate, on a timely basis, adequate counterpart funds from its budget for each fiscal year during Project implementation including the requisite funds required for implementation of resettlement, environment measures, and other specific actions.	Schedule 5, Para 8 of LA	Complied	Complied
4	The Office of the Director of Accounts (or an officer with equivalent functions) in each of the Project Executing Agencies shall be responsible for coordinating all accounts activities and ensuring compliance with the Bank's audit and accounting requirements, which shall be followed up in regular reviews by the Bank.	Schedule 5, Para 18 of LA	Complied	Being Complied
5	The Borrower shall permit a special audit on the terms to be agreed with ADB.	Schedule 5, Para 19 of LA	Complied	Being Complied
Other Covenants				
1	Established, Staffed, and Operating PMU/PIU		Complied	Complied
2	Fielding of Consultants		Complied	Consultants fielded from 1 January 2008
3	The Borrower shall: (a) encourage Project contractors to employ women in rehabilitation and labor-intensive maintenance; (b) provide equal pay to men and women for work of equal type, in accordance with national laws and international treaty obligations; (c) provide safe working conditions for male and female workers; and (d) ensure that Project contractors comply with applicable labor laws and abstain from child labor. Specific provisions to this effect shall be included in the bidding documents.	Schedule 5, Para 13 of LA	Ongoing	Being Complied
4	The Borrower shall ensure that, in	Schedule 5,	Ongoing	Being

Sl. No.	Covenant	Reference in Loan Agreement	Status of Compliance	Remarks
	accordance with ADB's Policy on Gender and Development (1998): (a) Project interventions take into account the different impacts and needs of women and men; (b) special features are built into Subprojects to facilitate and encourage women's involvement and to ensure tangible benefits to women; (c) specific women-related interventions include activities that uplift women from situations of vulnerability to positions of stability; and (d) Project reporting reflects how gender-related needs are being addressed under the Project, and details the successes encountered, constraints met, and measures adopted to overcome them.	Para 14 of LA		Complied, Participation of Women is highly encouraging in BWDB component
5	Consistent with its commitment to good governance, accountability and transparency, ADB reserves the right to investigate any possible financial or management impropriety in conducting the Project. The Borrower shall ensure or cause the relevant Project Executing Agency to cooperate with any such investigation and extend all necessary assistance, including access to all relevant books and records as well as agree to the engagement of independent experts that may be needed for satisfactory completion of such investigations. All external costs related to such investigations shall be borne by the Project.	Schedule 5, Para 17 of LA	Ongoing	Being Complied
6	Without limiting the generality of Section 4.03 of this Loan Agreement, the Borrower shall cause the supervision consultant to be engaged under the Project to submit monthly progress statements and quarterly progress reports to each of the Project Executing Agency, the PSC and ADB throughout the Project implementation period.	Schedule 5, Para 20 of LA	Ongoing	Being complied
7	Within three months of the Effective Date, the Borrower, through each Project Executing Agency, shall finalize and adopt a project performance and	Schedule 5, Para 21 of LA	Ongoing	Being Complied

Sl. No.	Covenant	Reference in Loan Agreement	Status of Compliance	Remarks
	<p>monitoring system acceptable to ADB, based on indicators and procedures agreed between the Borrower and ADB. The Project Executing Agencies shall: (a) monitor the indicators according to the agreed framework on a quarterly basis to determine the efficiency and effectiveness of the Project; (b) provide to ADB monitoring reports from the commencement of project implementation until completion; and (c) conduct a sample survey to establish a baseline (Baseline) for subsequent Project performance monitoring unless accurate and reliable Baseline is already available in documented form and is made available to the Project consultants who are satisfied with their contents. The Borrower shall ensure that the relevant Project Executing Agency carries out Project performance monitoring upon completion of civil works carried out under the Project and the monitoring results are reviewed against the Baseline.</p>			
8	<p>The Borrower shall: (a) undertake necessary measures to create and sustain a corruption-free environment; (b) ensure that its anticorruption laws and regulations and ADB's Anticorruption Policy (1998) are strictly enforced and are being complied with during Project implementation, and that relevant provisions of ADB's Anticorruption Policy (1998) are included in all bidding documents for the Project; (c) facilitate ADB's exercise of its right to investigate, directly or through its agents, any alleged corrupt, fraudulent, collusive or coercive practices relating to the Project; (d) ensure that the Project Executing Agency conducts periodic inspections on the contractors' activities related to fund withdrawals and settlements; and (e) ensure that all contracts financed by ADB in connection with the Project include provisions specifying the right of</p>	Schedule 5, Para 22 of LA	Ongoing	Being Complied

Sl. No.	Covenant	Reference in Loan Agreement	Status of Compliance	Remarks
	ADB to audit and examine the records and accounts of the Project Executing Agency and all contractors, suppliers, consultants and other service providers as they relate to the Project.			

IEE: initial environmental examination, NGO: non-government organization

TECHNICAL ASSISTANCE COMPLETION REPORT

Division: Bangladesh Resident Mission

Technical Assistance (TA) No., Country and Name TA 7057-BAN: Financial Management and Monitoring		Amount Approved: \$200,000	
		Revised Amount:	
Implementing Agency: Implementation Monitoring and Evaluation Division (IMED), Ministry of Planning	Source of Funding: Asian Development Bank (ADB) TASF funding program	Amount Undisbursed: \$86,611.21	Amount Utilized: \$113,388.79
TA Approval Date: 31 January 2008	TA Signing Date: 28 April 2008	Fielding of First Consultant(s): 23 September 2008	
		TA Completion Date Original: 30 June 2010 Actual: 15 December 2010	
		Account Closing Date Original: 30 June 2010 Actual: 9 March 2011	

Description

In Bangladesh, the government executing agencies that implement development projects suffer from endemic capacity constraints in adequate financial management of projects. This has historically resulted in poor financial management, improper recording of expenditures, and lack of transparency in financial transactions. The government has been, from time to time, endeavoring to improve the financial management capacities of the executing agencies by exposing key officials to in-house and external training on financial management, often with the assistance of development partners. The results, however, have not been sustainable because of lack of continuity of a targeted, well-designed, and longer-term training program as well as frequent transfer of government staff. ADB, while preparing the Emergency Disaster Damage Rehabilitation (Sector) Project (EDDRP),¹ which was of an emergency nature with a multitude of subprojects and a short implementation period, identified the indispensable need for providing support to enable the executing agencies to (i) prepare a monitoring and evaluation strategy for financial management of the project and subprojects, (ii) provide procurement performance auditing, and (iii) third-party scrutiny of the subprojects prior to approval by the project steering committee (PSC) constituted for coordination and monitoring of the project. The objective of the TA was to assist the government in monitoring the EDDRP.

Expected Impact, Outcome, and Outputs

Impact: Enhanced capacity of the government in financial management and monitoring of the EDDRP, thereby ensuring improved transparency in financial transactions made under the project.

Outcome: EDDRP implemented with enhanced financial management and monitoring as envisaged at appraisal.

Outputs: (i) A monitoring and evaluation strategy prepared for the EDDRP and portfolios of subprojects; (ii) procurement performance audit of subprojects conducted; (iii) performance of the executing agencies and consultants monitored and technical advice provided, as needed; (iv) monthly, quarterly, and annual progress reporting formats prepared; (v) project progress reports reviewed and recommendations prepared for improvement/follow-up by the executing agencies; (vi) a structured executing agency and project risk assessment approach developed and undertaken; (vii) an annual monitoring and evaluation work plan prepared; and (viii) other monitoring and evaluation tasks undertaken as identified by the PSC and/or as a result of the performance audit process.

Delivery of Inputs and Conduct of Activities

The TA team consisted of two individual national consultants working in parallel: a financial management specialist intermittently for 24 person-months and an engineering specialist intermittently for 24 person-months. ADB recruited the consultants in accordance with ADB's Guidelines on the Use of Consultants (2010, as amended from time to time) after no objection from the borrower. The engineering specialist was fielded on 24 September 2008 and the financial management specialist on 20 November 2008; they ended their services in August 2010, when a total of about 36.8 person-months had been utilized. The original engineering specialist discontinued his service from October 2009 on health grounds. ADB, in consultation with the borrower, engaged a replacement, and the new engineering specialist was fielded on 1 April 2010.

The consultants prepared a monitoring and evaluation strategy. Third-party scrutiny, and procurement auditing based on a random sampling of financial transactions were conducted by the team. The consultants monitored and advised on the performance of the executing agencies and loan consultants. Progress reporting formats for presenting information

¹ ADB, 2008. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of Bangladesh for the Emergency Disaster Damage Rehabilitation (Sector) Project*. Manila.

expeditiously on physical and financial progress were developed and sent to the executing agencies. Under the TA, the consultants developed various project monitoring indicators, covering the issues to be looked into with due diligence, and, as a result, reducing risks at different stages of implementation of the EDDRP. They reviewed progress reports, visited subprojects, and prepared recommendations for follow-up by the executing agencies and/or PSC. A 3-day workshop in July 2010 on Monitoring Techniques for Infrastructure Projects was organized by the implementing agency. The workshop was conducted by the financial management specialist and engineering specialist with support from the consultants and executing agencies of the EDDRP. The workshop achieved its purpose to (i) support development of monitoring techniques, (ii) strengthen the project monitoring capacity of the concerned officials of the implementing agency and all executing agencies, and (iii) share the lessons learned and good practices from implementation of the EDDRP with the stakeholders.

Evaluation of Outputs and Achievement of Outcome

The consultants took a multisector approach and submitted the inception report with a detailed implementation plan, monthly reports, draft final report, and final report. The TA team made recommendations on procurement and performance improvement of the EDDRP after reviewing monthly and quarterly reports, and inputs received through frequent discussions with the executing agencies and consultants, and participation in ADB review missions for the EDDRP. Identified procurement-related issues were addressed and/or resolved with the help of executing agencies, the EDDRP loan consultant, and ADB interventions, as required. The reporting formats, part of the monitoring and evaluation strategy developed by the TA consultants, were used by the executing agencies in their progress reports and performance evaluation. Corrections and remedial measures, as advised by the TA consultants, were undertaken by the executing agencies and were followed up regularly by the TA consultants. The consultants advised the executing agencies regularly on performance improvement in project monitoring. Risk mitigation measures were put in place, ensuring smooth implementation.

Overall Assessment and Rating

The TA was rated *successful*. The performance of both consultants was satisfactory. The project monitoring indicators developed under the TA were effectively utilized by the executing agencies. The implementing agency formally approved the consultant's final reports and the workshop proceedings, on 21 October 2010 and circulated them on 6 February 2011. This demonstrates the government's ownership and high priority for good project management, with adequate monitoring and evaluation to track results and recommend improvements. The executing agencies and the implementing agency showed commitment to implement the TA consultants' recommendations and ensured interagency coordination.

Major Lessons

The good achievement under the TA was contingent on (i) the excellent teamwork of the stakeholders under the effective leadership of the chairman of the PSC; (ii) the good working environment facilitated by the implementing agency; (iii) the government-owned process; (iv) the timely formation and empowerment of the PSC; and (v) early identification of capacity development needs of the implementing agency, which allowed for support and successful implementation of the EDDRP supported by careful monitoring and evaluation. Finally, the improved capacity in detecting loopholes in subproject design and implementation, and in identifying irregularities and weaknesses of financial management systems, provided for quick solutions and timely implementation of the EDDRP.

Recommendations and Follow-Up Actions

Awareness is growing that economic development and good governance are closely related. Improved governance is a critical precondition to attract both foreign and local investments, provide services to the people, and ensure sustainable development. IMED's work for improving governance—by ensuring better implementation of development projects through proper financial management and monitoring and evaluation—is critical in this process. As an evolving organization, IMED needs to improve continuously development effectiveness and device tools for accountability to stakeholders. This may be achieved through a systematic and impartial assessment of policies, strategies, programs, and projects, including their design, implementation, and results.

Therefore, as the owner of the outcome of the subject TA, IMED needs to internalize the effective financial management and monitoring tools and frameworks developed by the subject TA to be used by all executing agencies for improved project management. In addition, IMED needs to establish a results-based monitoring and evaluation system, if necessary with the assistance of development partners.

Prepared by: M. Nazrul Islam

Designation: Project Officer

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

DETAILS OF CONSULTING SERVICES

Component	Appraisal Estimate (person-months)	Actual (person-months)
Part B: Rural infrastructure		
1. International consultant	26	26.00
2. National consultant	426	459.57
Part C: Municipal infrastructure		
1. International consultant	18	17.45
2. National consultant	355	358.76
Part D: Roads		
1. International consultant	94	85.00
2. National consultant	720	852.00
Part E: Water resources		
1. International consultant	40	30.83
2. National consultant	260	480.24
Total		
International consultant	178^a	159.28
National consultant	1,761	2,150.57

^a The appraisal report quoted a total international input of 178 person-months of international and 1,905 person-months of national input, but the supplementary appendixes to the report indicate 188 person-months of international and 1,930 person-months input for the four components.

Source: Asian Development Bank. 2008. *Report and Recommendations of the President to the Board of Directors: Proposed Loan and Technical Assistance to the People's Republic of Bangladesh for the Emergency Disaster Damage Rehabilitation Project*. Manila (Loan 2409-BAN[SF]); executing agencies' project completion reports for parts B, C, D, and E; and findings of the project completion review mission.

ASSESSMENT OF PROJECT IMPACTS AND BENEFITS

1. The socioeconomic analysis is based on a review of documents related to the project, such as the report and recommendation of the President, project completion reports prepared by the executing agencies of different components, and the project completion review (PCR) mission's discussions with executing agencies' officials. In addition, the PCR mission made field visits to appraise selected subprojects and, where possible, obtain the views of direct beneficiaries through informal discussions. The overall assessment was limited to post-project completion physical conditions and performance at the time of the field visits. The assessment, nevertheless, provides reasonable feedback on the project impacts, benefits, and effectiveness of the components in general.
2. The PCR mission visited selected subprojects in eight districts: *Bogra, Comilla, Cox's Bazar, Feni, Gaibandha, Kurigram, Lalmonirhat, Moulvibazar, Noakhali, Rangpur, and Sirajganj*. Subprojects included national and regional highways, *zilla* (district) roads, rural roads, *pourashava* (urban) roads, bridges, culverts, drainage and irrigation facilities, water control structures, and slope and embankment protection works.
3. The benefits for each project components are discussed below:
 - (i) **Part B: Rural infrastructure.** The PCR mission visited subprojects in Gaibandha, Rangpur, Kurigram, Lalmonirhat, Feni, and Noakhali districts. In all the subprojects visited, the works were found to be in good condition. The restoration of disaster-damaged roads (*upazila* and union roads), bridges, and culverts assisted in resumption of the activities of rural people back to their original pre-disaster level. The road subprojects restored access to trade centers, and educational and health facilities. The improved surface condition and riding quality of the roads rehabilitated from the disaster-damaged condition led to savings in vehicle-operating costs for motorized traffic and reduced travel time between important centers covered by the road network. Construction activity during implementation generated employment for the local population. Incomes increased as a result of enhanced commercial activity along the improved roads, helping alleviate rural poverty. The reconstruction or repair of bridges and culverts, which were severely damaged by the disaster, saved the local villagers from long detours, allowing them to benefit from reduced travel time and lower transport costs.
 - (ii) **Part C: Municipal infrastructure.** The mission visited subprojects in Sirajganj, Feni, and Chandpur *pourashavas*. Rehabilitation of municipal roads (including sealing and repair of potholes, eroding sub-base, and road shoulders), bridges, drains, and culverts in 27 *pourashavas* resulted in improved drainage and environments for the secondary town inhabitants, benefiting from the removal of unsanitary conditions caused by blocked drains and damaged roads. The drains in many areas are covered and, thus, protected from waste thrown by some careless residents. The executing agency informed the PCR mission that preventing local inhabitants from throwing their waste into the drains has been an endemic problem. The PCR mission suggested, and the executing agency agreed, that the situation can be mitigated by building up awareness among local residents by conducting a well-orchestrated publicity campaign and discussions with the core group of local residents, helping them realize that the protected environment contributed by the rehabilitated sanitation facilities under the project

would improve their way of life.

- (iii) **Part D: Roads.** Rehabilitation of disaster-damaged roads, bridges, and culverts helped restore pre-disaster conditions and allowed resumption of passenger and freight traffic movement. Dislocation of the road network had caused considerable economic loss to rural communities. The road subprojects, particularly *zila* roads, restored market accessibility for local farmers. Transportation of perishable agro-products like vegetables and fish was made easier and cheaper for the communities, using non-motorized modes such as rickshaw vans. Improved surface condition and riding quality of the roads from their pre-disaster condition led to savings in vehicle operating costs for motorized traffic and reduced travel time between important centers on the network covered by these roads. Reconstruction and/or repair of bridges and culverts that were severely damaged by the calamities saved local villagers from long detours, allowing them the economy of reduced travel time and lower transport costs. The improved road condition contributed to social benefits in some cases, such as increased enrollment of women in schools and greater social interaction between communities. Construction activity during project implementation generated employment for the local population. Incomes increased a result of enhanced commercial activity along the improved roads.
- (iv) **Part E: Water resources.** Rehabilitation works for flood control embankments, sluice gates, water control structures, and irrigation canals restored life in the affected areas to pre-disaster levels and in some cases, the improved design of the restoration works served as measures for the prevention of disaster in the future. Some works, like riverbank protection, will stop further erosion of the bank and prevent the river from shifting its flows. The rehabilitated water structures will serve as the frontline guard to protect the other modes of infrastructure from future flood-related disasters.

ECONOMIC EVALUATION

A. General

1. Economic evaluation was not carried out at appraisal as the project was of an emergency nature. However, for assessing the effectiveness and/or efficiency of any investment, it is desirable to conduct economic evaluation and estimate the economic internal rate of return (EIRR). As road projects are the easiest to quantify in terms of their economic benefits, a post-construction evaluation was taken up for a representative sample of project road sections, with two sections of *zila* (district) roads from each of the Rajshahi and Dhaka zones of the Roads and Highways Department (RHD) where the project was implemented. Selection was made on the basis of availability of sufficient relevant data on traffic, road characteristics, and cost estimates.

2. The first selected *zila* road section, Sirajganj–Raiganj road, was part of contract package no. EDDRP/ADB/RJZ/SRG/Z-07 for part D (roads). The road was selected for evaluation as it is an important arterial road connecting the commercial town of Sirajganj with Bogra, the commercial hub of northwest Bangladesh. Out of the total length of 28.09 kilometers (km), the sections of the road improved under the project was 20.38 km. The other *zila* road section selected, 20.32 km long Munshiganj–Sreenagar road, was part of contract package no. EDDRP/ADB/DKZ/MNG/Z-03. The length of road section rehabilitated under this contract was 14.89 km. This road connects with Mawa, the eastern end of the proposed Padma Multipurpose Bridge, and promises high potential for traffic movement once Padma Multipurpose Bridge is constructed and operational.

3. The economic evaluation involved a comparison of with-project and without-project situations to estimate benefits and calculate EIRR using discounted cost–benefit analysis. Reduction in vehicle operating costs (VOCs) is considered the main benefit of the road repair and restoration works. In the absence of any baseline data or any economic evaluation at appraisal, it was necessary to make reasonable assumptions for carrying out the analysis.

B. Traffic Projections

4. Past traffic volumes on the project road sections were obtained from the zonal reports of the RHD road network database, prepared annually by the RHD of the Government of Bangladesh. Average annual daily traffic counts by vehicle categories for 2008–2009 were the latest available published data. The growth in traffic in Bangladesh in the recent past has been very high, in the range of 10%–12% on the major arterial roads. Cars, jeeps, microbuses, and trucks have especially shown high growth rates. This growth may be attributed to the release of suppressed demand with the completion of large-scale road improvement works, complemented by a shift away from rail transport on account of the poor quality of railway service. Obviously, such high growth is not sustainable in the long term. Besides, as much of the suppressed demand is likely to have been already catered to by the investments in the road sector, future traffic growth may not be as high as in the past. Thus, projections are based on more realistic traffic growth rates. The current annual rate of 10% is assumed to prevail in the immediate future, i.e., until 2012, followed by 8.5% from 2013 to 2018, and 7% beyond 2018, in keeping with the conventional pattern of growth in transport demand. The number of registered motor vehicles in the country has also grown at 7.5 % over the last decade.

C. Vehicle Operating Costs

5. The unit VOCs for different categories of motorized vehicles and for varying road roughness values, calculated by RHD for the year 2010, was used in the analysis. A few sample VOC values for 2010 are shown in Table A10.1.

Table A10.1: Vehicle Operating Costs in Bangladesh by Vehicle Category
(January 2000, Tk per kilometer)

IRI	Heavy/ Medium Truck	Small Truck	Large Bus	Mini Bus	Micro Bus	Utility/ Jeep	Car
2	8.69	7.14	12.05	6.97	4.08	7.98	6.36
3	9.21	7.42	12.26	7.08	4.24	8.39	6.66
4	9.73	7.70	12.48	7.20	4.44	8.82	7.01
10	13.05	9.65	12.73	8.25	7.46	11.46	10.93

IRI = international roughness index.

Source: RHD, HDM Circle.

6. The disaster, particularly floods, left the road surface in a highly distressed condition. Had the disaster damage restoration works not been taken up, the road surface in the without-project condition would have undergone further deterioration with growth in traffic. Given the disaster-damaged condition, the international roughness index (IRI) value was assumed as 8 in the without-project condition with annual roughness progression of 0.9. The maximum roughness value attainable by the road was frozen at 10 IRI. The disaster damage restoration works, comprising mainly pothole repair and seal coat, were meant to provide immediate relief and were not envisaged as a dramatic improvement of work. Thus, roughness in the with-project condition was assumed to drop to only 5 IRI, and the roughness progression as 0.45. Periodic maintenance works are triggered by the roughness value. For the purpose of the analysis, responsive periodic maintenance in the form of 38 millimeter pre-mix bituminous carpeting was applied in the with-project situation when the IRI value reached 6 (in accordance with RHD road maintenance strategies). The roughness dropped to 4 IRI following the intervention. Based on these assumptions, the benefits of road restoration works, in terms of savings in VOCs, were calculated.

D. Construction and Maintenance Costs

7. Actual construction costs (final contract values) were used in the analysis. Construction in most of the cases was completed within 1 year (2009–2010). The financial costs were converted to economic costs by a standard conversion factor of 0.8 to account for taxes and duties. All costs have been brought to the 2010 level using an average annual inflation rate of 6%.

8. In the with-project case, a regular annual maintenance cost at Tk45,000 per km and periodic maintenance cost at Tk300 per square meter—amounting to Tk2.1 million per km for a two-lane road (7 meters wide)—was considered in accordance with the RHD road maintenance strategy. The periodic maintenance was found to be necessary in the third year, i.e., in 2013.

E. Economic Evaluation

9. The EIRR has been calculated for 5 years, which is assumed to be the useful economic life of the flood-damage restoration works. The cost–benefit streams for the project road

sections are shown in Table A10.2. The results indicate that the economic performance in the representative cases is quite satisfactory. It may be concluded that the investment has been efficient.

Table A10.2: Cost and Benefit Streams for Selected Project Road Sections
(Tk million)

Year	Munshiganj–Sreenagar Road			Sirajganj–Raiganj Road		
	Cost	VOC Savings	Net Benefit	Cost	VOC Savings	Net Benefit
2008	5.28		(5.28)	13.22		(13.22)
2009	0.43	4.40	3.97	0.68	10.71	10.03
2010	0.43	5.46	5.03	0.68	13.28	12.59
2011	20.16	5.70	(14.46)	31.92	13.84	(18.08)
2012	0.43	9.02	8.59	0.68	21.86	21.18
2013	0.43	9.10	8.67	0.68	22.04	21.36
EIRR			25.5%			53.4%

() = negative, EIRR = economic internal rate of return,
VOC = vehicle operating cost.

Source: Project completion review mission's estimates.