



Report and Recommendation of the President to the Board of Directors

Project Number: 35049
November 2010

Proposed Loans People's Republic of Bangladesh: Padma Multipurpose Bridge Project

CURRENCY EQUIVALENTS

(as of 14 October 2010)

Currency Unit – taka (Tk)

Tk1.00 = \$0.014263

\$1.00 = Tk70.1100

ABBREVIATIONS

ADB	–	Asian Development Bank
ADF	–	Asian Development Fund
BBA	–	Bangladesh Bridge Authority
CEAP	–	construction environmental action plan
EMMP	–	environmental management and monitoring plan
JICA	–	Japan International Cooperation Agency
LIBOR	–	London interbank offered rate
OCR	–	ordinary capital resources
PPP	–	public–private partnership
SARD	–	South Asia Department

NOTE

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

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PROJECT AT A GLANCE

1. Project Name: Padma Multipurpose Bridge Project		2. Project Number: 35049-013	
3. Country: Bangladesh		4. Department/Division: South Asia Department/Transport and Communications Division	
5. Sector Classification:			
		Sectors	Primary
		Transport, and information and communication technology	√
		Subsectors	
		Road transport	
6. Thematic Classification:			
		Themes	Primary
		Economic growth	√
			Widening access to markets and economic opportunities
			Promoting economic efficiency and enabling business environment
			Promoting macroeconomic stability
		Capacity development	Organizational development
6a. Climate Change Impact No Climate Change Indicator available.		6b. Gender Mainstreaming	
		Effective gender mainstreaming (EGM)	
		Gender equity theme (GEN)	
		No gender elements (NGE)	
		Some gender benefits (SGB)	√
7. Targeting Classification:		8. Location Impact:	
General Intervention	Targeted Intervention		
	Geographic dimensions of inclusive growth	Millennium development goals	Income poverty at household level
√			
	National		High
	Regional		Medium
	Rural		Medium
	Urban		Low
9. Project Risk Categorization: Complex			
10. Safeguards Categorization:			
		Environment	A
		Involuntary resettlement	A
		Indigenous peoples	C
11. ADB Financing:			
Sovereign/Nonsovereign	Modality	Source	Amount (\$ Million)
Sovereign	Project loan	Asian Development Fund	76.0
Sovereign	Project loan	Ordinary capital resources	539.0
Total			615.0
12. Cofinancing:			
Financier	Category	Amount (\$ Million)	Administration Type
Islamic Development Bank	Official-Loan	140.0	
Japan International Cooperation Agency	Official-Loan	300.0	
World Bank	Official-Loan	1,200.0	
Total		1,640.0	
13. Counterpart Financing:			
Source		Amount (\$ Million)	
Government		660.0	
Total		660.0	
14. Aid Effectiveness:			
Parallel project implementation unit		Yes	
Program-based approach		No	
Use of country procurement system		No	

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on proposed loans to the People's Republic of Bangladesh for the Padma Multipurpose Bridge Project.

2. The project will build the first fixed crossing across the Padma River in Bangladesh comprising a two-level bridge 6.15 kilometers (km) long, 12 km of approach roads, tolling and service facilities, and river training works to regulate the river flow and prevent damage to the bridge structure. The project will include a component to build the institutional capacity of the executing agency to ensure the sustainability of the project.

II. THE PROJECT

A. Rationale

3. Bangladesh is a riverine country, and the major rivers flowing through it are the Ganges, Jamuna, Meghna, and Padma. Historically, this river system has split Bangladesh into (i) the northwest zone, bordered by the Ganges and Jamuna rivers; (ii) the east zone, which is east of the Jamuna River, where the capital, Dhaka, and the major port, Chittagong, are situated; and (iii) the southwest zone, isolated by the Padma and Ganges rivers. The Padma River is formed by the confluence of the Ganges and the Jamuna rivers. The river, about 5 km wide with braided, turbulent, and shifting flows, has been a major transport barrier between the southwest zone and the northwest and east zones. At present, passengers and freight are transported across the river by ferry and, to a lesser extent, by launches and rowboats. Their services are grossly inadequate in terms of both capacity and service level. Existing ferry services involve long and unpredictable waits at terminals lacking basic amenities. Flooding, fog, and other difficult weather conditions routinely cause services to be suspended or cancelled.

4. The completion of the Jamuna bridge in June 1998 improved the connectivity of the northwest zone to the economically important east zone, thus accelerating the former's socioeconomic development and alleviating poverty in the country as a whole.¹ Similar impacts are expected with the opening of the proposed Padma bridge. The bridge is expected to have subregional impacts by forming part of the Asian Highway Route A-1, the main Asian Highway route connecting Asia to Europe.

5. The pre-feasibility study conducted with government financing in 1999–2000 established the technical and economic viability of a bridge across the Padma River.² A more comprehensive feasibility study undertaken in 2001–2005 by the Japan International Cooperation Agency (JICA) reaffirmed the technical and economic viability of building the bridge at the Mawa–Janjira crossing.³ During the feasibility study, the government requested the Asian Development Bank (ADB), Japan Bank for International Cooperation, and World Bank to extend their support for constructing the bridge through a cofinancing arrangement similar to that adopted for the Jamuna bridge.⁴ The development partners came to an understanding that (i) the project is too large to be financed by a single aid agency, (ii) the exemplary development

¹ ADB. 2003. *Jamuna Bridge Impact Study*. Consultant's report. Manila (TA 3681-BAN).

² Jamuna Multipurpose Bridge Authority. 2000. *Padma Bridge Study: Prefeasibility Report*. Dhaka.

³ Japan International Cooperation Agency. 2005. *The Feasibility Study of the Padma Bridge*. Tokyo.

⁴ The Jamuna Multipurpose Bridge Project cost \$753.7 million: \$207.0 million from ADB, \$200 million from the Overseas Economic Cooperation Fund (Japan), \$199.1 million from the World Bank, and \$147.6 million in government counterpart funding. ADB. 1994. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of Bangladesh for the Jamuna Bridge Project*. Manila (Loan 1298-BAN).

partner coordination and cooperation achieved for constructing the Jamuna bridge should be replicated for the Padma bridge, and (iii) subsequent project preparation would be carried out jointly.

6. In 2005, ADB provided technical assistance (TA)⁵ to complement JICA's feasibility study, which confirmed the technical and economic viability of the Padma bridge. The TA aimed as well to develop a public-private partnership (PPP) for the project, which would have required several preparatory measures and conditions such as (i) creating an enabling environment for what is a new concept in Bangladesh through a comprehensive fiscal, financial, and legal policy framework, (ii) building capacity in the executing agency; and (iii) implementing a vast public communication plan. The TA therefore did not recommend pursuing PPP. However, it is envisaged that the operation and maintenance of the bridge will involve the private sector.

7. ADB processed a TA loan of \$17.6 million in 2007⁶ to finance (i) consultants to prepare detailed design and help the Bangladesh Bridge Authority (BBA) with tendering, (ii) an engineering review to confirm the selected deliverables of the design consultants, and (iii) a panel of reputed international and national experts to provide advisory services to BBA. The World Bank is assisting, under a \$3 million project preparatory facility, with (i) an independent review of social and environmental safeguard documents, (ii) financial due diligence, (iii) the strengthening of BBA, and (iv) additional financing for the panel of experts.

8. The government accords very high priority to the project, which is included in ADB's 2010–2012 country operations business plan for Bangladesh as a firm loan for 2010 processing.⁷ Since mobilizing the design consultants, ADB, the Islamic Development Bank, JICA, and the World Bank have fielded joint missions to deal with various aspects of project preparation.

B. Impact and Outcome

9. The project will significantly improve the country's surface transport systems and, because of its size, lift the nation's economy. Specifically, the project will accelerate economic growth in the southwest zone of Bangladesh. The direct outcome of the project will be improved surface transport between Dhaka and the southwest zone. The project's institutional strengthening component will ensure the sustainability of the project and other BBA investment projects.

C. Outputs

10. The key outputs will be (i) the first fixed crossing across the Padma River for road traffic comprising (a) a two-level steel truss composite bridge 6.15 km long, the top deck to accommodate a four-lane highway and the lower deck to accommodate a single-track railway to be added in the future; (b) 12.0 km of approach roads, 1.5 km on the Mawa side and 10.5 km on

⁵ ADB. 2005. *Technical Assistance to the People's Republic of Bangladesh for Preparing the Padma Multipurpose Bridge Project*. Manila.

⁶ ADB. 2007. *Report and Recommendation of the President to the Board of Directors: Proposed Technical Assistance Loan to the People's Republic of Bangladesh for the Padma Multipurpose Bridge Design Project*. Manila (Loan 2375-BAN). A supplementary loan of \$10 million equivalent was processed in 2009 to finance the cost of additional surveys and studies required to complete the detailed design. ADB. 2009. *Report and Recommendation of the President to the Board of Directors: Proposed Supplementary Loan to the People's Republic of Bangladesh for the Padma Multipurpose Bridge Design Project*. Manila (Loan 2593-BAN).

⁷ An indicative rolling country operations business plan, 2010–2012 is included in ADB. 2009. *Country Partnership Strategy Midterm Review: Bangladesh, 2006–2010*. Manila.

the Janjira side; (c) bridge-end facilities including toll plazas and service areas; and (d) river training with dredging and bank protection works, 1.5 km on the Mawa side and 12 km on the Janjira side, to regulate flow and prevent damage to the bridge structure; (ii) cost-recovery mechanisms to ensure investment sustainability; and (iii) institutional capacity building to ensure sustainable asset management. The design and monitoring framework is in Appendix 1.

D. Investment and Financing Plans

11. The project is estimated to cost \$2,915 million (Table 1). This estimate is based on the near-final engineering design of the bridge, approach roads, river training works, and related facilities prepared by the design consultant. More details are available in the project administration manual.⁸

Table 1: Project Investment Plan
(\$ million)

Item	Amount ^a
A. Base Cost^b	
1. Main bridge and approach roads	1,463.1
2. River training works	685.4
3. Land acquisition, resettlement, and environmental management	245.8
4. Consultancy for project supervision	66.0
5. Project management, technical assistance, and training	26.0
Subtotal (A)	2,486.2
B. Contingencies^c	329.8
C. Financing Charges During Implementation^d	99.0
Total (A+B+C)	2,915.0

^a Including taxes and duties estimated at \$550 million, of which \$80 million will be financed by ADB loan resources.

^b In August 2010 prices.

^c Physical contingencies are computed at 5% for the main bridge, approach roads, and bridge-end facilities and at 10% for other civil works. Price contingencies are computed at 7.2% for the main bridge, approach roads, and bridge-end facilities and at 8% for other civil works.

^d Total cofinancing combined. For ADB loans, interest and commitment charges are included. For the ADF loan, interest during construction has been calculated at 1.0% per year. For the ordinary capital resources loan, interest during construction has been computed at the 5-year forward London interbank offered rate plus a spread of 0.3% and commitment charges at 0.15% per year to be charged on the undisbursed loan amount.

Sources: Bangladesh Bridge Authority and Asian Development Bank estimates.

12. The government has requested a loan of \$539 million from ADB's ordinary capital resources to help finance the project. The loan will have a 27-year term, including a grace period of 7 years; an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; a commitment charge of 0.15% per year (the interest and other charges during construction to be capitalized in the loan); and such other terms and conditions set forth in the draft loan and project agreements.⁹ The government has provided ADB with (i) the reasons for its decision to borrow under ADB's LIBOR-based lending facility based on these terms and conditions, and (ii) an undertaking that these choices were its own independent decision and not made in reliance on any communication or advice from ADB.

13. The government has requested an additional loan in various currencies equivalent to SDR 48,206,000 from ADB's Special Funds resources to help finance the project. The loan will have a 32-year term, including a grace period of 8 years, an interest rate of 1.0% per annum during the grace period and 1.5% per annum thereafter, and such other terms and conditions set forth in the draft loan and project agreements (footnote 9).

⁸ Project Administration Manual (accessible from the list of linked documents in Appendix 2).

⁹ Loan Agreements; Project Agreement (accessible from the list of linked documents in Appendix 2).

14. ADB loans will be used to finance part of the cost of the civil works, financing charges during the implementation of the ADB loans, and local taxes and duties estimated at \$80 million on ADB-financed expenditures. The taxes and duties are estimated to amount to 19.5% of the total project cost, which is not excessive considering the high share of imported materials for bridge works. The government will finance a large share of land acquisition and resettlement costs in addition to its share of civil works. ADB's financing of taxes and duties will be material to the success of the project. No taxes or duties in Bangladesh are considered unreasonable or discriminatory.

15. Three cofinanciers will provide a total of \$1,640 million through parallel cofinancing (Table 2). ADB assistance through the ongoing TA loan for design and other pre-construction activities (footnote 6) has facilitated the partners' participation as cofinanciers in the project. Details of the financing arrangements are in the project administration manual (footnote 8).

Table 2: Financing Plan

Source	Amount (\$ million)	Share of Total (%)
A. Asian Development Bank		
Asian Development Fund	76.0	2.61
Ordinary capital resources	539.0	18.49
Subtotal (A)	615.0	21.10
B. Cofinanciers		
Islamic Development Bank	140.0	4.80
Japan International Cooperation Agency	300.0	10.29
World Bank	1,200.0	41.17
Subtotal (A)	1,640.0	56.26
Subtotal (A+B)	2,255.0	77.36
C. Government of Bangladesh	660.0	22.64
Total (A+B+C)	2,915.0	100.00

Sources: Government of Bangladesh, and Asian Development Bank estimates.

E. Implementation Arrangements

16. BBA will be the executing agency. The project implementation unit established for the ongoing TA loan and its supplementary loan will be expanded into a project management unit with sufficient staff to handle the wide range of tasks involved in project implementation. The project management unit will be headed by a project director, who will be reporting to the executive director of BBA, and will be staffed with qualified engineers and experts recruited both internally and externally. The panel of experts, which was established during the design phase and provided the project implementation unit with independent advisory support, will continue to provide similar support during construction.

17. Civil works will be carried out by international civil works contractors selected through international competitive bidding and supervised by a firm of international construction supervision consultants. To aid BBA in its capacity as the employer under International Federation of Consulting Engineers conditions of contract and assist with managing the project and monitoring its impact, a firm of management support consultants will be engaged. Both consultancy services will be financed using the proceeds of a loan from the World Bank. BBA's procurement capacity has been assessed, and appropriate risk mitigation measures are incorporated in the design and implementation arrangements of the project.

18. Civil works to be financed by loans from the cofinanciers have been packaged into contracts for (i) the main bridge, estimated to cost \$1,300 million, with ADB, JICA, and World

Bank financing; (ii) river training works, estimated to cost \$800 million, with ADB and World Bank financing; (iii) approach roads and bridge-end facilities on the Mawa side, estimated to cost \$35 million, with World Bank financing; (iv) approach roads and bridge-end facilities on the Janjira side, estimated to cost \$160 million, with Islamic Development Bank financing; and (v) the service area on the Janjira side, estimated to cost \$30 million, with World Bank financing.

19. The implementation arrangements are summarized in Table 3 and described in detail in the project administration manual (footnote 8).

Table 3: Implementation Arrangements

Aspects	Arrangements		
Implementation period	5 years (inclusive of pre-construction activities)		
Estimated completion date	31 December 2015		
Project management			
(i) Oversight body	1) Coordination Committee chaired by Advisor to the Prime Minister on Economic Affairs 2) Panel of Experts 3) Cofinanciers Monitoring Committee (comprising the Bangladesh Bridge Authority and the cofinanciers)		
(ii) Executing agency	Bangladesh Bridge Authority		
(iii) Project management unit	Dhaka, 118 staff		
Procurement	International competitive bidding	5 contracts (2 contracts for ADB financing)	\$30 million–\$1,300 million
	National competitive bidding for multiple contracts to develop resettlement sites under GOB financing		
Consulting services (to be financed by the World Bank)	Quality- and cost-based selection	Management support and construction supervision consultants	\$7 million \$65 million
Advance contracting and retroactive financing	Works (for ADB financing)		
Disbursement	The loan proceeds will be disbursed in accordance with ADB's <i>Loan Disbursement Handbook</i> (2007, as amended from time to time) and detailed arrangements agreed upon between the government and ADB.		

ADB = Asian Development Bank, GOB = Government of Bangladesh.

Source: Asian Development Bank.

20. The procurement of civil works under ADB financing will be carried out in compliance with ADB Procurement Guidelines (2010, as amended from time to time) with such modifications and waivers as ADB will have agreed to for this project. The prequalification of contractors for the main bridge and river training works contracts is being undertaken by the executing agency. Considering the joint nature of the financing and the eligibility policies of the World Bank and JICA, the prequalification process is open to firms, subcontractors, and materials from any country eligible under ADB, JICA, or World Bank financing, and it is proposed to allow the procurement of civil works contractors, subcontractors, and materials for the project also from countries that are not ADB members. For this to happen, a waiver from ADB's country and source eligibility provision is necessary, and is being sought for this project. In the absence of a waiver on country and source eligibility, implementation of the project as a joint project will not be possible. In addition, considering the joint nature of the financing and significant fiduciary and reputation risks involved, firms and entities sanctioned by any of the cofinanciers will be debarred from participating in contracts which are jointly financed by them.

21. For effective coordination, ADB is developing, in consultation with other cofinanciers, a memorandum of understanding to lay out the basic principles and procedural aspects of

collaboration.¹⁰ The memorandum of understanding will be signed as quickly as possible, but in any event, by no later than the issue of any final bidding documents in respect of any contract to be cofinanced by ADB under the project.

III. DUE DILIGENCE

A. Technical

22. The ADB TA loan and its supplementary loan provide sufficient resources to conduct the necessary surveys, tests, and studies (footnote 6). The panel of experts has met frequently to discuss design deliverables. Checking engineers are conducting further technical due diligence of the detailed engineering design. The detailed design has been informed by the country's past experience in constructing bridges across its major rivers and other recent projects of similar size and nature executed elsewhere. Climate change impacts affecting the water level, temperature regime, rainfall, river discharge, and wind speed have been considered in the design parameters.

B. Economic and Financial

23. Estimates of the benefits accruing to road users, using the conventional approach of estimating savings in vehicle operating and travel time costs, found the project economically viable, with an economic internal rate of return of 15%–20% under different benefit and cost assumptions.¹¹ To supplement this analysis, a comprehensive impact analysis has been conducted using social accounting matrix and computable general equilibrium models. The main results from the models indicate that rates of poverty reduction will be higher than historical trends over the past 2 decades and yield an economic internal rate of return of 21%, in line with the results of the conventional approach. These models will be updated during project implementation to estimate project impact and for ex-post evaluation of project impacts on the region and the national economy.

24. Financial analysis was carried out to identify the cash-flow requirement for sustainably financing the project. The result suggests that toll rates for the Padma bridge need to be substantially higher than current toll rates for the Jamuna Bridge. Considering a gradual increase of toll rates to reach the required level, as agreed by the government, the financial internal rate of return is estimated at 7.9% for the base case and at 6.5% for a more conservative traffic scenario. Although the financial internal rate of return may appear low, it captures only a minority of financial flows and benefits that the project will generate in the southwest zone. The low financial internal rate of return demonstrates the necessity of public intervention and the inappropriateness of a PPP approach.

C. Governance

25. BBA needs to increase its staff numbers and enhance its capacity significantly to manage the project and then properly maintain the asset created. During project preparation,

¹⁰ A memorandum of understanding with similar scope was entered into by ADB, the Overseas Economic Cooperation Fund of Japan, and the World Bank for implementing the Jamuna Bridge Project.

¹¹ Although the Padma bridge is designed to accommodate a railway in the future, and the benefits of a railway connection across the river will be significant, the economic analysis does not take them into account. This is mainly because (i) the timing and cost of completing the railway connection across the bridge is not immediately available, (ii) the increased cost of accommodating the railway is marginal, and (iii) excluding potential railway benefits results in a suitably conservative estimate.

BBA gradually added senior staff, mostly through deputation from other government organizations. With the assistance of the World Bank, BBA developed a capacity development action plan on the basis of which it has started recruiting staff with expertise in resettlement, environmental management, and financial management.

26. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government and BBA. The specific policy requirements and supplementary measures are described in the project administration manual (footnote 8).

27. Measures to enhance governance and minimize procurement-related risks include (i) the oversight of the project by the panel of experts and the cofinanciers monitoring committee (CMC), (ii) assistance from the design consultants in civil works procurement, (iii) assistance from experienced procurement consultants in consultant selection, (iv) a project website to be maintained by BBA to disclose information including on procurement, and (v) a system of handling complaints related to project implementation. Further, the project management unit shall, within 9 months of project effectiveness, prepare a grievance redress mechanism acceptable to ADB. An independent auditor acceptable to ADB will annually audit all project-related accounts and revenues. All audit reports and certified financial statements will be submitted to ADB within 6 months of the close of the year under audit.

D. Poverty and Social

28. **Poverty reduction.** The southwest zone has one of the highest poverty rates in Bangladesh, according to the household income and expenditure survey conducted in 2005. While 42% of the population of the whole country lived below the absolute poverty line, the southwest zone had a poverty incidence of 52% in Barishal Division and 46% in Khulna Division. During construction, local unemployed people will gain employment, and increased commercial activity will generate income. The country will be physically integrated through the fixed link, reducing economic disparity and deprivation. An estimate of multiplier effects on the project investment shows the bridge increasing the gross domestic product growth rate by 1.2% and the regional growth rate in the southwest zone by 3.5%, generating 743,000 person-years of additional employment, and thereby contributing 1.2% of the total labor market of Bangladesh. Over the long term, the bridge's impact on poverty reduction will be more significant, as the share of economic benefits generated by the bridge that will accrue to the poor is larger than the share of the gross domestic product that goes to the poor.¹²

29. **Consultation and participation.** Public consultation began in the project area in 1999 as part of the first pre-feasibility study and continued throughout project preparation. Surveyed households perceive the socioeconomic benefits of the project as (i) improved access to socioeconomic services, (ii) increased employment opportunities, and (iii) improved transport services that will reduce poverty in the region. A public consultation and participation plan has been developed for project implementation to ensure that adequate and timely information is made available to the affected people.

30. **Gender, HIV/AIDS, and public health.** The participation of both women and men was ensured during the social study by undertaking gender analysis. Focus group discussions were undertaken with women and men belonging to different socioeconomic groups. The project will physically displace 283 households headed by women. A gender action plan and public health action plan have been developed for the following: (i) entitlements for losses suffered by

¹² Summary Poverty Reduction and Social Strategy (accessible from the list of linked documents in Appendix 2).

women; (ii) livelihood reconstruction and income restoration programs; (iii) the employment of unskilled and semi-skilled laborers in civil works construction; (iv) the management of health and sexually transmitted infections to address public health, HIV/AIDS, and human trafficking issues; (v) gender-equitable processes of consultation and information dissemination in relation to resettlement and rehabilitation; and (vi) gender-inclusive mechanisms to redress grievances.

31. **Chars.** Hydraulic studies suggested that constructing the bridge will have no adverse impacts on chars¹³ upstream and downstream from the bridge. However, in extensive consultation with char-dwelling communities, a char monitoring and management framework was developed to monitor any unanticipated impacts during and after construction and develop mitigation plans if impacts are confirmed. BBA is firmly committed to providing resources for char monitoring, protection, and development.

E. Safeguards

32. **Involuntary resettlement and indigenous peoples.** The project is classified involuntary resettlement category A and indigenous peoples category C in accordance with ADB's Safeguard Policy Statement (2009). A 100% census based on the detailed design identified 13,578 households that will suffer impacts on livelihoods and assets such as income from day labor, agricultural land, residential and commercial assets, and trees. Of this number, 3,886 will be physically displaced and 9,692 will be economically displaced. A resettlement framework¹⁴ and three separate resettlement action plans¹⁵ have been prepared based on ADB's Safeguard Policy Statement and other cofinanciers' safeguard policies to address all losses. The complete details of compensation rates for the loss of assets, development of resettlement sites, shifting and transitional assistance, and other income-restoration assistance, including additional support for vulnerable groups, are in the entitlement matrixes of the resettlement action plans. Four resettlement sites are being developed for displaced households. BBA will provide sufficient funds for the timely implementation of resettlement and social action plans. No impact on indigenous people is envisaged.

33. **Environment.** Considering that this is a large project involving significant changes in land use and impacts on wildlife, the project has been classified environmental category A in accordance with ADB's Safeguard Policy Statement (2009). To investigate the various environmental impacts in the project area, studies have included an (i) initial environmental examination of resettlement sites, (ii) environmental impact assessment (including environmental management and monitoring plan [EMMP]),¹⁶ (iii) environmental quality baseline monitoring survey, and (iv) ecological report. Further, climate change has been factored into the design of the project. The reports have been prepared in accordance with the requirements of ADB, JICA, and the World Bank. To ensure proper environmental impact monitoring, the baseline data provided in the environmental impact assessment report will be further verified and updated before the start of project implementation.

34. The EMMP and environmental codes of practice for 19 environmental issues have been developed to help minimize environmental impacts. These cover managing waste and hazardous materials, controlling erosion and sedimentation, and protecting fauna through such measures as timing and locating construction to avoid disturbing the migration and breeding of

¹³ Land located in an active river basin that is subject to erosion and accretion.

¹⁴ Resettlement Framework (accessible from the list of linked documents in Appendix 2).

¹⁵ Resettlement Action Plans (accessible from the list of linked documents in Appendix 2).

¹⁶ Environmental Impact Assessment (accessible from the list of linked documents in Appendix 2).

hilsa fish. Contractors will prepare further detailed construction environmental action plans (CEAPs) based on the EMMP and environmental codes of practice. The CEAPs will be contract documents used for monitoring by the construction supervision consultant and an independent external monitor. Quarterly and annual progress reports on the implementation of CEAPs will be submitted to ADB. The EMMP will be revised by the construction supervision consultant and contractors to reflect any changes in project components. Adequate budget provision has been made for implementing CEAPs and EMMP.

F. Risks and Mitigating Measures

35. Major risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.¹⁷

Table 4: Summary of Risks and Mitigating Measures

Risks	Mitigation Measures
Poor design and engineering works	Design of works carried out under ADB TA loan and with ADB assistance in consultant selection Checking engineer financed under ADB TA loan Panel of experts to continue to provide the government with technical advice
Government lacking capacity to manage a large investment	A plan for capacity building in BBA developed under an institutional study to be implemented under the project
Poor coordination of development partners	Efforts to harmonize the application of policies and procedures of development partners A memorandum of understanding recording details of coordination arrangements to be entered into as early as possible
Poor governance of procurement and financial management	Oversight of the project by a panel of experts and a cofinanciers monitoring committee Assistance from consultants in civil works procurement and consultant selection Procurement information disclosure through BBA website A system of handling complaints
Social and environmental risks during construction	Environmental and social safeguard plans prepared with ADB assistance A communication strategy and a public consultation strategy with sufficient funds to disseminate project information and engage stakeholders
Delay in project start	Assistance in the pre-construction stage with documentation and due diligence developed under an ADB TA loan Assistance in institutional strengthening and capacity development provided by the World Bank Cofinanciers' clearance of safeguard documents and procurement documents in phases so actions requiring longer lead time can be initiated without waiting for the start of other actions
Overestimation of economic benefits	Traffic estimates carefully reviewed to establish conservative scenarios Post-project analysis of the Jamuna Bridge Project impacts indicating several multiplier benefits
Lack of financial affordability	Project not projected to be a financial burden with the current amount of concessional financing available for the project, and subject to the adoption of Padma tolls with appropriate tariff policies
Improper operation and maintenance of the bridge	Adequate financing arrangements agreed as part of the project, and BBA capacity to be strengthened Possibility of performance-based contract to be examined to carry out proper operation and maintenance of the bridge and related works

ADB = Asian Development Bank, BBA = Bangladesh Bridge Authority, TA = technical assistance.

Source: Asian Development Bank.

¹⁷ Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

IV. ASSURANCES AND CONDITIONS

36. The government and BBA have assured ADB that implementation of the project shall conform to all applicable ADB policies including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the project administration manual and loan documents.

37. The government and BBA have agreed with ADB on certain covenants for the project, which are set forth in the loan and project agreements.

38. In addition to the assurances, the effectiveness of ADB loan and project agreements will be subject to (i) the government and BBA entering into an acceptable subsidiary loan agreement and (ii) the financing agreements of JICA, and the World Bank having been concluded and becoming effective in all respects except for conditions requiring the effectiveness of the ADB loan and project agreements.

V. RECOMMENDATION

39. I am satisfied that the proposed loans would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve

- (i) the loan of \$539,000,000 to the People's Republic of Bangladesh for the Padma Multipurpose Bridge Project from ADB's ordinary capital resources, with interest to be determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; for a term of 27 years, including a grace period of 7 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and project agreements presented to the Board;
- (ii) the loan in various currencies equivalent to SDR48,206,000 to the People's Republic of Bangladesh for the Padma Multipurpose Bridge Project from ADB's Special Funds resources, with an interest charge at the rate of 1.0% per annum during the grace period and 1.5% per annum thereafter; for a term of 32 years, including a grace period of 8 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and project agreements presented to the Board; and
- (iii) the proposal set out in paragraph 20 of this report allowing civil works contractors, subcontractors, and materials used in civil works by them to be procured from nonmember countries of ADB to be eligible for financing under the Padma Multipurpose Bridge Project by the requisite affirmative vote of Directors representing not less than two thirds of the total voting power of ADB's members, pursuant to Article 14(ix) of the Agreement Establishing the Asian Development Bank.

Haruhiko Kuroda
President

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
<p>Impact Accelerated economic growth in the southwest zone of Bangladesh</p>	<p>Narrowed income-growth gap between the southwest zone and the rest of the country</p>	<p>Annual national statistical report</p>	<p>Assumption Complementary investments are made in the southwest zone and along the project corridor.</p>
<p>Outcome Improved surface transport between Dhaka and the southwest zone of Bangladesh</p>	<p>By project completion in 2015, travel time between Dhaka and Khulna to be reduced from the current 8 hours to 3.5 hours</p> <p>Traffic volume across the Padma River to increase by 100% in the first 5 years</p>	<p>Project performance monitoring surveys by management support consultants</p> <p>Ex-post evaluation by management support consultants or through separate technical assistance</p>	<p>Assumption Transport service providers will extend their services between Dhaka and the southwest zone.</p>
<p>Outputs</p> <ol style="list-style-type: none"> 1. First fixed crossing across the Padma River for road traffic 2. Cost recovery mechanisms to ensure investment sustainability 3. Institutional capacity for asset management 	<p>Main bridge, approach roads, and bridge-end facilities completed by 2014</p> <p>River training works completed by the monsoon in 2015</p> <p>Tolling strategy approved by the government with properly adjusted toll rates for Padma bridge by June 2013</p> <p>Strengthening of BBA by June 2013 in preparation for Padma bridge opening</p>	<p>Monthly and quarterly progress reports by BBA</p> <p>Regular review missions by ADB and other cofinanciers</p>	<p>Assumptions Other cofinanciers provide financing as envisaged.</p> <p>The government adopts a comprehensive tolling strategy without delay.</p> <p>Risks Land acquisition and resettlement are delayed and hamper the performance of civil works contractors.</p> <p>The recruitment of supervision consultants and civil works contractors is delayed.</p> <p>Construction is delayed by flooding and other weather conditions.</p>

Activities with Milestones	Inputs												
1. Project Readiness Enhancement	Loan												
1.1 Design consultants to provide continued services to enhance readiness until the first quarter of 2011	ADB: \$539 million from OCR and \$76 million from ADF												
1.2 Land acquisition, resettlement and rehabilitation, environmental mitigation, and utility shifting to be completed prior to the award of the civil works contract (expected in early 2011)	<table border="1"> <thead> <tr> <th>Item</th> <th>Amount (\$ million)</th> </tr> </thead> <tbody> <tr> <td>Civil works</td> <td>548.0 (ADF 73.5 and OCR 474.5)</td> </tr> <tr> <td>Financing charges during implementation</td> <td>67.0 (ADF 2.5 and OCR 64.5)</td> </tr> </tbody> </table>	Item	Amount (\$ million)	Civil works	548.0 (ADF 73.5 and OCR 474.5)	Financing charges during implementation	67.0 (ADF 2.5 and OCR 64.5)						
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Civil works	548.0 (ADF 73.5 and OCR 474.5)												
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2. Bridge Construction	Government \$660 million												
2.1 Recruitment of construction supervision consultant completed by December 2010	<table border="1"> <thead> <tr> <th>Item</th> <th>Amount (\$ million)</th> </tr> </thead> <tbody> <tr> <td>Civil works</td> <td>593.1</td> </tr> <tr> <td>Implementation of social action and environmental management plans</td> <td>66.9</td> </tr> </tbody> </table>	Item	Amount (\$ million)	Civil works	593.1	Implementation of social action and environmental management plans	66.9						
Item	Amount (\$ million)												
Civil works	593.1												
Implementation of social action and environmental management plans	66.9												
2.2 Award of all civil works contracts by the second quarter of 2011													
2.3 Construction of all civil works completed by 2014 for main bridge, approach roads, and bridge-end facilities													
2.4 Construction of all civil works for river training completed by the monsoon of 2015													
3. Financing Arrangements	Loans and Credits												
3.1 A tolling strategy adopted and toll rationalization done by award of civil works contracts for main bridge or river training works	Cofinanciers: \$1,640 million												
3.2 A comprehensive tolling strategy for the Padma bridge developed and adopted by the government by 2013	Islamic Development Bank: \$140 million												
	Japan International Cooperation Agency: \$300 million												
	World Bank: \$1,200 million												
	(The amounts above are only indicative)												
4. Institutional Strengthening	<table border="1"> <thead> <tr> <th>Item</th> <th>Amount (\$ million)</th> </tr> </thead> <tbody> <tr> <td>Civil works</td> <td>1,285.0</td> </tr> <tr> <td>Implementation of social action and environmental management plans</td> <td>225.0</td> </tr> <tr> <td>Consulting services for supervision</td> <td>72.0</td> </tr> <tr> <td>Project management, technical assistance, and training</td> <td>26.0</td> </tr> <tr> <td>Financing charges during implementation and refinancing of PPF</td> <td>32.0</td> </tr> </tbody> </table>	Item	Amount (\$ million)	Civil works	1,285.0	Implementation of social action and environmental management plans	225.0	Consulting services for supervision	72.0	Project management, technical assistance, and training	26.0	Financing charges during implementation and refinancing of PPF	32.0
Item	Amount (\$ million)												
Civil works	1,285.0												
Implementation of social action and environmental management plans	225.0												
Consulting services for supervision	72.0												
Project management, technical assistance, and training	26.0												
Financing charges during implementation and refinancing of PPF	32.0												
4.1 Seven staff positions identified under the institutional study for the purpose of project implementation filled by loan appraisal in the third quarter of 2010													
4.2 Key positions of the remaining 14 positions identified under the same study for strengthening BBA's capacity to be filled by the end of 2010													
4.3 Strengthening of BBA in preparation for Padma bridge opening by the end of 2012													

ADB = Asian Development Bank, ADF = Asian Development Fund, BBA = Bangladesh Bridge Authority, OCR = ordinary capital resources, PPF = project preparatory facility.

Source: Asian Development Bank.

LIST OF LINKED DOCUMENTS

<http://www.adb.org/Documents/RRPs/?id=35049-01-3>

1. Loan Agreement: Ordinary Operations
2. Loan Agreement: Special Operations
3. Project Agreement
4. Sector Assessment (Summary): Transport
5. Project Administration Manual
6. Contribution to the ADB Results Framework
7. Development Coordination
8. Financial Analysis
9. Economic Analysis
10. Country Economic Indicators
11. Summary Poverty Reduction and Social Strategy
12. Gender Action Plan
13. Environmental Impact Assessment
14. Resettlement Action Plan: Main Bridge and Approach Roads
15. Resettlement Action Plan: River Training Works
16. Resettlement Action Plan: Resettlement Site Development
17. Resettlement Framework
18. Risk Assessment and Risk Management Plan

Supplementary Documents

19. Social Action Plan
20. Environmental Action Plan
21. Draft Memorandum of Understanding for Cooperation, Coordination, and Exchange of Information