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**Report No. 20672**

**PERFORMANCE AUDIT REPORT**

**BANGLADESH**

**ROAD REHABILITATION AND MAINTENANCE PROJECT  
(CREDIT 1827-BD)  
RURAL ROADS AND MARKETS IMPROVEMENT AND MAINTENANCE  
PROJECT (CREDIT 1940-BD)**

**June 29, 2000**

*Sector and Thematic Evaluation Group  
Operations Evaluation Department*

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## CURRENCY EQUIVALENTS

US\$1	=	Tk (Taka) 30.90 (May 1987)
US\$1	=	Tk (Taka) 31 (June 1988)
US\$1	=	Tk (Taka) 42 (June 1997)
US\$1	=	Tk (Taka) 42 (June 1997)
US\$1	=	Tk (Taka) 42 (June 1998)
US\$	=	Tk (Taka) 51 (May 2000)

## WEIGHTS AND MEASURES

1 meter (m)	=	3.28 feet
1 kilometer (km)	=	0.625 miles
1 hectare (ha)	=	2.47 acres (ac)
1 metric ton (m ton)	=	2,205 pounds (lbs)

## FISCAL YEAR

July 1 – June 30

## ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
CCD	Credit closing date
DANIDA	Danish International Development Agency
DRDC	District Road Development Committee
ECNEC	Executive Committee of the National Economic Council
EEC	European Economic Community
EIRR	Economic internal rate of return
FRB	Feeder road type B
GCM	Growth center market
HBB	Herringbone Bond (brick pavement)
IDA	International Development Agency
KfW	Kreditanstalt fuer Wiederaufbau
LGD	Local Government Division (of the MLGRDC)
LGED	Local Government Engineering Department
MLGRDC	Ministry of Local Government, Rural Development and Cooperatives
MIS	Management information system
MRR	Ministry of Relief and Rehabilitation
NORAD	Norwegian Agency for Development Co-operation
ODA	Overseas Development Administration
PD	Project Director
PIO	Project Implementation Office

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Operations Evaluation

June 29, 2000

**MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT**

**SUBJECT: Bangladesh: Performance Audit Report  
Road Rehabilitation and Maintenance Project (Credit 1827-BD)  
Rural Roads and Markets Improvement and Maintenance Project  
(Credit 1940-BD)**

Attached is the Performance Audit Report (PAR) prepared by the Operations Evaluation Department on two projects in Bangladesh: Road Rehabilitation and Maintenance project (Credit 1827-BD, approved in FY87) and Rural Roads and Markets Improvement and Maintenance Project (Credit 1940-BD, approved in FY88). The projects closed 6 months behind schedule. A total of US\$125.55 million equivalent was disbursed, and US\$14.85 million was cancelled at closing.

The main objectives of the Road Rehabilitation and Maintenance Project (RRMP) were to restore the main road network to a maintainable condition; introduce institutional and technical improvements in the programming of works; and enhance the capacity of the local contracting industry to undertake road works as an alternative to force account. Similarly, the objectives of the Rural Roads and Market Improvement and Maintenance project were to support the government's strategy for rural development through the construction, upgrade, and maintenance of feeder roads, the creation of growth center markets (GCMs), and the construction of culverts and similar infrastructure on rural roads.

The Bank's assistance to Bangladesh to improve and develop its road network and rural infrastructure is providing clear and present benefits to the country. Rural infrastructure development in particular is spurring economic activities in rural communities, unleashing the entrepreneurial talent of the local population, and providing access of the rural poor to important social and cultural services. In short, the quality of life and socioeconomic situation of the rural population is steadily improving, and the development of the rural infrastructure is playing an important part in this.

Similarly, the improvement of the main road network is increasing intra- and international trade and enhancing the connectivity of the country, especially after the opening up of the Jamuna Bridge. The Jamuna Bridge has significantly reduced transportation costs between the eastern and western part of the country, and traffic along the roads leading to the Jamuna Bridge has consequently increased. There is considerable movement of people and goods throughout the country along the improved road network. This is in part because of the high density of the population and the growing Bangladeshi economy, which has been growing at an average of 5.6 percent since 1990. But, the improvement of roads has also increased the supply of transport service (both motorized and non-motorized). Vehicular and rickshaw traffic is significantly higher in the improved road network than on the unimproved roads.

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The institutional development efforts have substantially improved the capacity of the Local Government Engineering Department (LGED), the agency responsible for implementing the Rural Roads and Market Improvement and Maintenance project. LGED is now capable of implementing Bank (and donor) - supported projects effectively and within a reasonable amount of time. The training and technical assistance extended as part of the projects have increased LGED's organizational capacity, professionalized its staff and modernized its operations. LGED has evolved from a small cell and a bureau in the Local Government Division of the Ministry of Local Government in the early 1980s, to a full-fledged and internationally recognized institution capable of implementing complex, multidonor-supported projects.

Institutional development impact with the Roads and Highway Department (RHD) is less notable than it is with LGED. RHD is a department in the Ministry of Communication and was in charge of implementing the Roads Rehabilitation and Maintenance project. Many of the institutional development efforts have only begun in earnest with the Second Roads Rehabilitation and Maintenance project, and its follow-on project, the Third Road Rehabilitation and Maintenance project. RHD also benefits from the multidonor-supported Institutional Development Component (IDC). The IDC, which is now in its second phase, has provided assistance to RHD to create an HDM-III unit, a computer program designed to improve maintenance work programming and expenditure, and a Road Safety unit.

These efforts at institutional development have yet to be appreciated by RHD, and it is too early to judge whether they will improve the way RHD carries out its work. The HDM-III unit, for example, has an impressive collection of data on the road network and churns out a maintenance plan to be used by RHD. However, RHD does not fully use the unit's recommendations, because RHD has yet to practice resource allocation for road investment based on rational and economic criteria. Similarly, the Road Safety unit suffers from organizational weaknesses, and will require more political and institutional support to ensure its role in improving road safety.

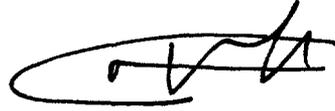
In the judgment of the PAR, the benefits of the project should be sustainable as long as the government continues to provide the necessary funding to maintain the improved roads. From the technical point of view, the roads were built with acceptable quality, and should therefore not pose any sustainability problem. In addition, the institutions responsible for maintaining the road network (i.e., RHD and LGED) have the necessary capacity to do so. The main thing that casts doubt on the sustainability of the projects is whether the government provides a stable source of funding for road maintenance. The government has been steadily increasing the maintenance funds, but it is somewhat erratic and is far less than what is required to maintain the vastly improved road network. Hence, there is an urgent need to institute an arrangement for a stable source of funding for road maintenance to ensure the sustainability of these projects and others that are currently being implemented.

The PAR agrees with the ICR in rating the outcome of both projects as *satisfactory*, the institutional development impact of the RRMP as *modest*, and RRMIMP as *substantial*. The PAR further rates the sustainability of both projects as *likely*, and Bank and borrower performance in both projects as *satisfactory*.

In the ongoing development partnership, the PAR recommends that the Bank and the Government work to improve donor coordination, develop a strategic framework for investment planning and policy development, improve the governance structure within which the private sector partners with the government, and establish a sustainable road maintenance and

management financing framework. In the area of rural economic development, the PAR suggests that the Bank and the Government need to identify and find solutions for the non-infrastructure impediments to development and poverty reduction efforts at the rural level, and begin supporting interventions to improve rural institutions.

Attachment

A handwritten signature in black ink, consisting of a large, sweeping initial letter followed by several smaller, connected strokes.



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This report was prepared by Mr. Binyam Reja (Task Manager), who audited the project in February 2000. Mr. William Hurlbut edited the report. Ms. Romyne Pereira provided administrative support.



## Principal Ratings

### *Road Rehabilitation and Maintenance Project (Credit 1827-BD)*

	ICR <sup>1</sup>	OED/EVM <sup>2</sup>	PAR <sup>3</sup>
Outcome	Satisfactory	Satisfactory	Satisfactory
Sustainability	Likely	Likely	Likely
Institutional Development	Modest	Modest	Modest
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

### *Rural Roads and Markets Improvement and Management Project (Credit 1940-BD)*

	ICR	OED/ES	PAR
Outcome	Satisfactory	Satisfactory	Satisfactory
Sustainability	Likely	Likely	Likely
Institutional Development	Substantial	Substantial	Substantial
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

## Key Staff Responsible

### *Road Rehabilitation and Maintenance Project (Credit 1827-BD)*

	Task Manager	Division Chief	Country Director
Appraisal	J. Bentchickou	F. Temple	C. Willoughby
Mid-term	S. Lundebye	M. Robinson	Pierre Landell-Mills
Completion	M. Quazi	M. Robinson	Pierre Landell-Mills

### *Rural Roads and Markets Improvement and Management Project (Credit 1940-BD)*

	Task Manager	Division Chief	Country Director
Appraisal	F. Mitchell	F. Temple	
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1. Ratings assigned by the Region in the Implementation Completion Report (ICR).
2. Ratings assigned by OED in the Evaluation Memorandum (EVM) or Evaluation Summary (ES) during the ICR review exercise.
3. Ratings assigned in this Performance Audit Report (PAR) based on the OED audit.



## **Preface**

**This is a Performance Audit Report (PAR) of two transport projects in Bangladesh: the Road Rehabilitation and Maintenance Project (Credit 1827-BD and Rural Roads and Market Improvement and Maintenance Project (Credit 1940-BD).**

**The PAR was prepared by the Operations Evaluation Department (OED) based upon a review of the President's Reports, Staff Appraisal Reports (SARs), Implementation Completion Reports (ICRs), transcripts of Board proceedings, project correspondence files, Bank documents on other transport projects, and other Bank and non-Bank materials. In February 2000, an OED mission traveled to Bangladesh, where it discussed the projects with relevant government officials, private sector representatives, beneficiaries in villages, and professional and trade organizations. OED also discussed the projects with Bank staff in charge of them at headquarters and in the country office. The kind cooperation and invaluable assistance from all the people consulted are gratefully acknowledged.**

**Following standard procedures, copies of the draft PAR were sent to the relevant government officials and agencies concerned for their review and comments. No comments were received.**



## 1. Introduction and Background

1.1 World Bank participation in the transport sector of Bangladesh entered a new phase in the late 1980s with the approval of the First Roads Rehabilitation and Maintenance Project (1987) and the First Rural Roads and Market Improvement and Maintenance Project (1988). Previously, the Bank had financed two highway projects, one port project, and three inland water transport projects. These projects, however, were limited in scope and financing and experienced varying degrees of implementation difficulties in part due to the country's transition to independence.

1.2 The most remarkable thing about those two projects is that they laid a foundation for an effective and beneficial development partnership between the Bank and the borrower in the transport sector. Since the projects were approved, Bank assistance for the transport sector in Bangladesh has significantly expanded with the financing of seven projects totaling US\$1.2 billion, including the landmark Jamuna Bridge Project that connected the eastern and western parts of the country via a multipurpose bridge. According to OED's Country Assistance Review, transport lending was the third largest sector in the 1990–95 portfolio, after agriculture and "multisector"/adjustment projects<sup>4</sup>.

1.3 The topography of Bangladesh has necessitated the development of a complex transport system in which roads, railways, and inland waterways complement and compete with each other. Today, the road system has become the most important mode of transport, largely because of the growth of the private, self-financing and self-maintaining trucking and bus industry. The importance of road transport is illustrated by its share of total freight traffic carried by motorized transport (60 percent of total tons-km) and intercity passenger traffic (70 percent of total passenger-km).

1.4 With a population of about 120 million on a land area of about 134,000 square kilometers, Bangladesh has a population density of about 813 persons per square kilometer, making it the most densely populated country among non-city states. It is also one of the poorest countries in the world, with a per capita income of US\$250 (1997). Its gross domestic product has been growing at average 5 percent since 1990, but this has yet to have much impact on the level of poverty, which is most widespread in the rural areas and among women. About half of the rural population lives below the level of "absolute poverty" (defined as an intake of 2,122 calories per person per day), and more than a quarter live below the "hard core" (with per capita intake of less than 1,805 calories per person per day).

1.5 The economic destiny of Bangladesh is, in part, determined by its geography and climate, which have resulted in high transportation costs and constrained economic development and poverty reduction efforts. Most of the land area is a low-lying, nearly flat, fertile, alluvial floodplain, and is crisscrossed by rivers, including three of the world's largest, the Padma (Ganges), Jamuna (Brahmaputra), and Meghna. The rivers are major obstacles for east-west transport in the country. In addition, Bangladesh is prone to such natural disasters as abnormal flooding and cyclones. Geography and climate have been the reason for costly road construction in Bangladesh, including weak foundation soils and a countrywide lack of suitable road-building material. Furthermore, annual monsoon rains and flooding shorten the construction season to only seven months.

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4. Operation Evaluations Department, *Bangladesh: Country Assistance Review*, 1999.

1.6 The poor governance system in Bangladesh notwithstanding, the combination of geography and climate has arguably made Bangladesh one of the poorest countries in the world. Any economic development and poverty reduction efforts in Bangladesh have therefore to consider these factors and strive to remove them from becoming major impediments to economic development and poverty reduction. The Bank's projects in the transport sector are designed to mitigate the adverse impacts of the country's geography and climate on the development of the country.

## 2. Project Objectives and Relevance

### **Trunk Road Network: Removing Transport Bottlenecks for National Development**

2.1 The Bank approved the First Roads Rehabilitation and Maintenance Project (RRMP-I) in 1987, and its follow-on projects, the Second and Third RRMP, in 1994 and 1999. When RRMP-I was approved, the national road network in Bangladesh was in a state of disrepair. A third of the main roads and bridges were estimated to be in poor condition and in need of urgent repair (RRMP-I SAR, para. 2.26). The condition of the roads was such that the transport system was constraining economic activities and growth and becoming a major bottleneck to national economic development.

2.2 The institutional framework within which the roads were developed and managed was deficient, which contributed to the poor physical condition of the roads system. The Roads and Highway Department (RHD) had sole responsibility to plan, implement, and manage the construction, rehabilitation, and maintenance of the national road network. However, the RHD had limited capacity and a poor incentive structure to carry out these responsibilities with efficiency and economy. Except for major construction works, RHD favored carrying out civil works with force account, rather than setting up a competitive contracting system where private contractors provide competitive bids to carry out the work. Similarly, RHD/GOB favored new construction over maintenance, with the maintenance budget covering only half the need.

2.3 The First Roads Rehabilitation and Maintenance project was designed to mitigate the failings in the road sector. Its overarching objectives were to restore the main road network to a maintainable condition; introduce institutional and technical improvements in the programming of works; and enhance the capacity of the local contracting industry to undertake road works as an alternative to force account. (Specific project objectives are listed in Table 1.)

2.4 The projects sought to achieve these objectives through a civil works and institutional development component. The civil works component was directed at the reconstruction, rehabilitation, and maintenance of economically important roads, especially the trunk road network in the surplus-food producing areas of the northwest of Bangladesh. The institutional development component was designed to support the preparation and use of a Road Master Plan for identifying and prioritizing road investment; implementation of an action plan to improve road maintenance and strengthen the local construction industry. (Specific project components are given in Table 1).

2.5 The project was relevant to the country's development agenda to become self-sufficient in food production and accelerate economic growth to reduce poverty. By reducing the transport costs of passengers and goods, the projects tried to become an important part of the national

economic development program of the Government of Bangladesh (GOB). The components of the project were sufficiently designed to meet the project objectives.

### **Rural Infrastructure Development: Supporting Rural Development Strategy**

2.6 Bangladesh is an overwhelmingly rural society: 80 percent of the people live in rural areas and 69 percent of them rely on agricultural activities for their employment. Rural development was therefore one of the overarching objectives of the government in the 1980s. In 1984, the government launched a Strategy for Rural Development (SRD) designed to spur agricultural output and improve the quality of life of the rural population through the development of (i) rural infrastructure; (ii) irrigation, drainage, and flood control; and (iii) non-farm production and employment opportunities for the rural population.

2.7 The infrastructure component of the SRD was designed to stimulate rural development by reducing transport costs; providing better and cheaper access to markets for inputs and outputs; enabling economic production of high-valued perishable crops and reducing storage losses; providing easier access to off-farm employment opportunities; and diminishing the remoteness of backward regions.

2.8 The government's SRD was the backdrop for RRMIMP, and the project was thus designed and developed to help the government achieve its strategy of rural development. In this sense, the project was highly relevant to the needs of the country. The main objectives of this project, as outlined in Table 1, were to promote rural development through the construction, upgrade, and maintenance of feeder roads, the creation of growth center markets (GCMs), and the construction of culverts and similar infrastructure on rural roads. The project had other ancillary objectives, namely to introduce cost effective design and construction method, to improve resource mobilization, and provide support for institutional strengthening of the institutions concerned with the development and maintenance of feeder and rural roads.

2.9 The components were sufficiently designed to achieve the above objectives. In addition, the designers of the project were cognizant of the limited capacity of the implementing agency and the difficulty of developing appropriate technical specifications for the construction of roads. The project was designed accordingly, emphasizing the need for "systemic experimentation with different technical options, careful monitoring, feeding project experience into design of later components, and most importantly, definition and implementation of institutional arrangements."

2.10 In sum, the design of the two audited projects was of good quality, attempted to meet the needs of the county, and adapted the Bank's knowledge to the country's absorptive capacity.

**Table 1. Project Objectives and Components**

<i>Project</i>	<i>Objectives</i>	<i>Components</i>
<p>Rural Roads and Markets Improvement and Maintenance Project (Credit 1940-BD)</p> <p>Approved: June 24, 1988  Effective: May 5, 1989  Original Closing Date: June 30, 1997  Actual Closing Date: June 30, 1997  Loan Amount: US\$62.3 M  Project Cost: US\$95 M</p>	<p>Promote rural development through the reconstruction, upgrading, and maintenance of feeder roads, growth center markets and the construction of structures on rural roads in the project area.</p> <p>Implement cost effective approaches to design, construction and maintenance of these components within resource constraints;</p> <p>Improve resource mobilization to support zila and upzila maintenance activities.</p> <p>Strengthen the institutions concerned with the development and maintenance of feeder and rural roads and markets; and</p> <p>Rehabilitate roads and associated structure damaged by the 1987 floods while improving standards to minimize future flood damage.</p>	<p>Improving, maintaining, and upgrading 500 km of Type B feeder roads.</p> <p>Constructing bridges and culverts on about 650 km of rural roads.</p> <p>Master planning and improving infrastructures in 65 growth center markets.</p> <p>Providing project support in the form of consultants, project staff, vehicles and equipment, and office and laboratory facilities in the project area;</p> <p>Constructing a new headquarters building for Local Government Engineering Department.</p> <p>Repair about 650 km of flood-damage roads, and 27 km of bridges, culverts, drainage ditches and retaining walls in the area west of the Jamuna River.</p>
<p>Road Rehabilitation and Maintenance project (Credit 1827-BD)</p> <p>Approved: September 2, 1987  Effective: February 25, 1988  Original Closing Date: December 31, 1996  Actual Closing Date: December 31, 1996  Loan Amount: US\$102 M  Project Cost: US\$161.73</p>	<p>Reduce transport Costs of passengers and goods, in particular agricultural products, by restoring the major trunk roads in northwest Bangladesh to maintainable conditions.</p> <p>Introduce institutional and technical improvements in the programming of works, administration and maintenance of the road system and in technical standards and materials.</p> <p>Upgrade the capabilities of the local contracting industry to undertake major road contracts as an alternative to small and inefficient size road contracts.</p>	<p>The civil works program included: (i) carrying out a two-phased program of rehabilitation/reconstruction of about 305 km of roads and bridges in northwestern Bangladesh; (ii) carrying out a program of deferred maintenance works on about 335 km of other major roads in northwestern Bangladesh; and (iii) preparation of detailed engineering studies and supervision of the project civil works.</p> <p>The institutional development program included : (i) preparation of a Road Master Plan (RMP) for identifying future projects for road construction, rehabilitation and maintenance and ranking them in terms of economic priority; (ii) implementation of a Road Maintenance Action Plan (RMAP) for improved road maintenance which included the provision of funds for road maintenance activities, maintenance by contract and related training of Roads and Highway Department (RHD) staff, carrying out a Road Materials and Standards Study (RMSS) and the establishment of a Planning and Monitoring Cell; and (iii) carrying out a Construction Industry Study (CIS) and, based on its findings, preparation and implementation of an action plan to strengthen the domestic construction industry.</p>

### **3. Achievement of Project Objectives and Results**

#### **Implementation Experience**

3.1 The Roads and Highway Department (RHD), a department in the Ministry of Communications, implemented the First Road Rehabilitation and Maintenance project. But initially it had limited capacity to implement Bank-supported projects, although it had previously implemented two Bank-supported highway projects. The implementation of the project had to be phased into two stages to tailor implementation responsibilities to RHD's capacity. The other justifications for phasing the implementation of the project were the lack of adequate skilled labor and construction materials, as well as to allow for maximum participation of domestic contractors. The phasing of road works turned out to be beneficial because it enabled the RHD to increase its capacity through learning-by-doing and helped make the domestic contractors more competitive with international contractors as was envisaged.

3.2 The severe flooding of the 1987/88 affected the implementation of the project, causing some components to be dropped and others to be substantially changed in scope. The roads that were slated for periodic maintenance under this project were so severely damaged that they had to be dropped from the maintenance plan and moved to the Third Flood Rehabilitation Project (FRP) for repair and rehabilitation. Out of the 335 km of roads planned for periodic maintenance under RRMP, only the 53 km of the roads not damaged by the flood received periodic maintenance. The other 282 km of roads had to be rehabilitated under the Third FRP.

3.3 The Rural Roads and Markets Improvement and Maintenance Project was implemented by the Local Government Engineering Department, a department in the Local Government Division of the Ministry of Local Government. LGED was a bureau when the project was approved but became a department in 1992, reflecting its improved capacity to implement and manage development projects. The project was implemented without major disruptions, although initial startup delays in the hiring of consultants led to a loss of valuable construction season forcing the project to close one year later than scheduled. The complex and lengthy procedures of land acquisition in Bangladesh for roads also caused some delays.

3.4 The RRMIMP-I was the Bank's first major investment in rural infrastructure, which provided support, with cofinancing with Kreditanstalt fuer Wiederaufbau (KfW) and Swiss Agency for Development and Cooperation (SDC), for the improvements of rural roads and market improvements. The project successfully completed in June 1997 assisted GOB in improving rural infrastructure in eight districts in Northwest Bangladesh.

#### **Achievement of Objectives**

3.5 The Bank's assistance to Bangladesh to improve and develop its road network and rural infrastructure are providing clear and present benefits to the country. The audited projects and their follow-ons have provided critical support to GOB in its effort to reduce the geographic and climatic impediments to economic and social development in Bangladesh. The projects are also to some extent improving institutional arrangements for the management and maintenance of the physical assets.

*RRMP-I: Improving Trunk Road Network*

3.6 RRMP-I's objective to lower transport costs for passengers and goods was substantially achieved by completing most of the rehabilitation works of the major trunk roads. The rehabilitation work was done in two phases, and at the end of the project, 305 km of roads were rehabilitated (versus 325 km at appraisal). The quality of the completed works was acceptable and helped ease traffic congestion and provided good riding quality.

3.7 RRMP-I achieved an average of 17 percent ERR at completion (versus 34 percent at appraisal). The lower ERR at completion is due in part to the cost overruns that resulted from the massive damage caused by the flood of 1987/88.

3.8 The improvement of the main road network is increasing the intra- and inter-national trade and enhancing the connectivity of the country, especially after the opening up of the Jamuna Bridge. The Jamuna Bridge has significantly reduced transportation costs between the eastern and western part of the country, and traffic along the roads leading to the bridge, some of which were improved under the RRMP series, appears to have increased substantially. There is considerable movement of people and goods throughout the country along the improved road network, which is reflected in the high ERR. This is in part because of the high density of the population and the growing Bangladeshi economy.

*RRMIMP-I: Rural Infrastructure Development*

3.9 The RRMIMP-I's primary objective to promote rural development through improvements in rural infrastructure was substantially achieved. Rural infrastructure development is spurring economic activities in rural communities, unleashing the entrepreneurial talent of the local population, and providing the rural poor with access to important social and cultural services. A Socioeconomic Impact Monitoring Study, funded under the Second RRMIMP, has been tracking the impact of rural infrastructure development on many aspects of rural economic and social life. The Study, still in phase one, provides preliminary conclusions suggesting that the quality of life and socioeconomic situation of the rural population in Bangladesh is steadily improving, and the development of the rural infrastructure is playing an important part in this.

3.10 The project was very successful in meeting its physical targets and in establishing good quality standards for road construction and maintenance, which are being replicated nationally through follow-on projects. The project supported the improvement of 497 km of type-B feeder roads (FRBs) to bituminous standards, compared with 500 km agreed at appraisal. Similarly, 495 km of FRBs were upgraded, compared with 200 km agreed at appraisal, and 35 (1,079 meters) of bridges were constructed on FRBs, compared with 1,223 meters agreed at appraisal. All the agreed 65 growth center markets were improved, and 4,041 meters of Structures owned Rural Road (SRR) were constructed, compared with 3,705 meters agreed at appraisal.

3.11 Under the flood rehabilitation component, 428 km of roads were rehabilitated, compared with 399 km agreed at appraisal, and 2,374 meters of bridges were rehabilitated, compared with 1,798 meters agreed at appraisal.

3.12 The improvement and upgrade of the rural roads and trading infrastructure are contributing to rural economic development and poverty reduction efforts by removing rural mobility and marketing constraints. This is reflected in the high economic rate of return of the projects. RRMIMP achieved a 26 percent ERR at completion (versus 25 percent at appraisal) for the feeder

road component and a 31 percent ERR (versus 10 percent at appraisal) for the growth center market component.

3.13 In addition to improving the transport costs on improved and upgraded roads, the project also contributed in reducing travel time and providing good riding quality, which increased motorized and non-motorized vehicle traffic. According to the *Rural Infrastructure Impact Study*, the volume of motorized and non-motorized traffic respectively increased by 117 percent and 58 percent after the roads were improved. There has been a phenomenal increase in the number of buses and small trucks that frequent the improved roads to provide passenger and cargo services in rural communities. As a result, cargo and passenger Rickshaw pullers also benefited financially as the higher traffic meant their income increased, while the smooth bituminous road reduced the physical effort they have to expend to pull the rickshaws.

3.14 The construction of structures on rural roads greatly improved accessibility because most of the rural roads, which were built by food-for-work programs, had many gaps and the culverts were not constructed. By filling these gaps, the SRR sub-component proved to be beneficial in making rural roads more useful which were otherwise difficult (if not impossible) to use at certain times of the year.

3.15 The improvements in the growth center markets have provided a conducive and clean environment for trading, which has resulted in the reduction of spoilage of produce and quality deterioration. A cost-benefit analysis done under the *Rural Infrastructure Impact Study* shows that the investment in market improvements have an ERR of 22 percent. In addition, the improved markets are becoming a focal point for other economic and social activities, where new permanent shops have opened nearby. This has increased the volume of trading that takes place in the improved markets. The number of sellers in 10 sample markets, for example, increased by an average of 26 percent after improvement of the market. Similarly, the number of permanent shops around the improved markets has increased by an average of 13 percent per annum.

### **Institutional Development Impact**

3.16 The main beneficiaries of the institutional development components of the projects were the LGED under the RRMIMP and the RHD under the RRMP. The institutional development efforts had varying degrees of impact on the implementing agencies.

#### *RRMIMP-I The Local Government Engineering Department*

3.17 The institutional development efforts of the Rural Roads and Market Improvement and Maintenance project have substantially improved the capacity of the Local Government Engineering Department. LGED has evolved from a small cell in the Local Government Division of the Ministry of Local Government in the early 1980s, to a full-fledged and internationally recognized institution capable of implementing complex, multidonor-supported projects. LGED implements Bank (and donor)-supported projects effectively and within a reasonable amount of time. The training and technical assistance extended as part of the projects have increased LGED's organizational capacity, professionalized its staff, and modernized its operations.

3.18 Some of the notable achievements of the project were (i) the establishment of a computerized financial management system, (ii) creation of a Socioeconomic Monitoring and Evaluation unit within LGED, (iii) improvement and standardization of the accounting procedures in headquarters and field offices, and (iv) the establishment of a pioneering mapping

system, the Geographic Information System (GIS), in the country. In addition, the project helped establish a nationwide training program for LGED staff, who were supported to take local and foreign training courses. Finally, the project financed the construction of an 11-story headquarters building for LGED, gathering all headquarter staff into one building from several rented-out buildings.

*LGED: Why the Success?*

3.19 The success of LGED in improving its institutional environment and organizational capacity is remarkable given the fact that many government departments in Bangladesh suffer from weak organizational capacity and lack transparency in their operations. The Bank and others have done several studies to examine why LGED performs in the way it does, while other government institutions in Bangladesh remain deficient. The main conclusions these studies have reached is that LGED's unique position in Bangladesh is explained by the fact it is blessed with dynamic leadership, a long-serving Chief Engineer (more than twenty years), highly qualified and professional staff, and a de-concentrated organizational framework that emphasis team work and informal decision making.

3.20 While these factors have been important in explaining LGED's remarkable achievements, the audit concludes that the comparison of LGED with other government institutions may not be appropriate. This is because there are some aspects of LGED that gives it the characteristics of a project implementation unit, rather than the usual government department. LGED's operating and development budget comes from donors, although it also gets some from the government. It manages some US\$1.4 billion in donor-supported projects, which has made it one of the largest implementation units in the country<sup>5</sup>. The large donor-assisted project has provided LGED significant opportunities to enhance its institutional capacity through the technical assistance and training components that is often attached with the projects. Its impressive 11-story building, for example, was built under the Bank's project. The computer LAN network in LGED (the only one in Bangladesh government institutions) is donor-financed and supported by a technical assistance team. Furthermore, the training and technical assistance programs have enabled LGED to attract qualified staff because many professionals in Bangladesh are attracted by the training benefits because it offers them a chance to go abroad and augment their skills. In addition, many staff in LGED are directly compensated under the projects' technical assistance program.

3.21 The foregoing shows that LGED has to be analyzed as a project implementation unit, rather than as a government institution. Its remarkable success may therefore not be unique if one begins to see LGED as a PIU, instead of a government department. Like any PIU, LGED's overarching objective is to implement donor-supported projects, attract qualified staff to expedite the implementation of projects, and carry out technical assistance and training programs. It has done these successfully, and it should be commended for doing so. On the other hand, LGED's government-financed development projects are not as good as donor-supported projects in terms of the quality of works and the procurement process followed. Therefore, this raises the question whether LGED's success can continue without donor support. Can LGED mobilize enough resources and recast its incentive structure to maintain the existing rural infrastructure? Can it retain its qualified professionals without the donor-supported technical assistance and training programs? These are the questions the Bank and the government have to study to ensure LGED success continues and stands on its feet without donor financing and technical assistance.

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5. The other Bangladeshi institution that has a large donor program is the Rural Electricity Board, which is also considered an efficient government institution (See the draft *Taming Leviathan: Reforming Governance in Bangladesh*).

*RRMP-I The Roads and Highway Department*

3.22 Institutional development impact with the Roads and Highway Department (RHD) is less notable than it is with LGED. RHD is a department in the Ministry of Communication and was in charge of implementing the Roads Rehabilitation and Maintenance project. Many of the institutional development efforts have only begun in earnest with the Second Roads Rehabilitation and Maintenance project, and its follow-on, the Third Road Rehabilitation and Maintenance project. RHD also benefits from the multidonor-supported Institutional Development Component (IDC). The IDC, which is now in its second phase, has provided assistance to RHD to create an HDM-III unit, a computer program designed to improve maintenance work programming and expenditure, and a Road Safety unit.

3.23 These efforts at institutional development have yet to be appreciated by RHD, and it is too early to judge whether they will improve the way RHD carries out its work. The HDM-III unit, for example, has collected an impressive set of data on the road network and churns out a maintenance plan to be used by RHD. However, RHD does not fully use the unit's recommendations, because the department has yet to practice resource allocation for road investment based on rational and economic criteria. Currently, RHD's resource allocation practices are overshadowed by political and other extraneous considerations, making HDM-III unit's work somewhat futile.

3.24 Similarly, the Road Safety unit suffers from organizational weaknesses, and will require more political and institutional support to ensure its role in improving road safety.

## **4. Bangladesh Road Sector: Crosscutting Issues and Outstanding Challenges**

4.1 The audited projects have provided significant benefits to Bangladesh by improving and developing its road network and rural infrastructure. These improvements are in turn playing an important part in the economic development and poverty reduction efforts of the country. These achievements notwithstanding, Bangladesh's road sector still faces challenges, some of which are perennial issues that the Bank and the GOB have been trying to address through the audited projects and their follow-ons. Among the most pressing outstanding challenges in Bangladesh's road sector are (i) the development of comprehensive road sector strategy and policy, (ii) instituting a sustainable road maintenance and management system, (iii) enhancing the role of private sector, (iv) and supporting the development of rural institutions.

### **Road Sector Strategy and Policy Development: Donor Coordination and Investment Prioritization**

4.2 Bangladesh lacks a comprehensive macro-level strategic planning and policy framework. As a result, it lacks the basis to optimize resource allocation for investment and to enhance the efficiency of the road network through improved policies for road use and management, and to set out policies in order to maximize the economic and social impacts of infrastructure development. The Infrastructure Unit in the Planning Commission is supposed to have these responsibilities, but the Planning Commission is no longer as influential as it once was. This has left an institutional void for strategic investment planning and policy development in the road (transport) sector.

4.3 As a result, the planning in the road sector has been somewhat ad hoc and often amounts to a political “wish list” that the GOB seeks to finance through donor assistance. The Road Master Plan prepared under RRMP-I had only a five-year plan and is only loosely adhered to. In addition, donor assistance in Bangladesh lacks a clear coordination because of the geographic divisions between the main development partners in the sector. With some important exceptions, the World Bank mainly provides support in the western part of the country, while the Asian Development Bank (ADB) concentrates in the east. These arrangements may have been convenient for the stakeholders involved, but they are not based on any comparative advantage criteria. In addition, as is argued in the 1991 *Bangladesh: Transport Sector Review*, “the lack of coordination among donors, and arbitrary geographic assignments to various donor agencies, means that the donor-aided programs may not constitute an adequate prioritization of needs.”

4.4 Previously, the Bank tried to remedy these deficiencies in investment strategies and policy framework through its policy dialogue and economic and sector work on Bangladesh’s transport sector. In the Transport Sector Review (1991), the Bank recommended that GOB act to improve the institutional framework for sector investment prioritization and policy development. In particular, it called for the (i) establishment of an Inter-Ministerial Steering Committee for Transport to formulate transport sector investments, (ii) strengthening of the Planning Commission’s Infrastructure Division for planning and policy development and formulation of long-term sector strategy. These initiatives, however, have not been successful in bringing a meaningful change in the way the road sector is financed and managed in Bangladesh. The Inter-ministerial committee was formed, but its mandate was so weak it lacked the institutional and political process to effect changes on the ground. Similarly, the attempts to strengthen the Infrastructure Division failed because, as mentioned earlier, its parent organization, the Planning Commission, no longer has the political support it once had.

4.5 In light of the deficiencies in investment planning and policy framework, which have been preventing Bangladesh from enjoying the full economic and social benefits of infrastructure development, the Bank needs to work with the government and other donors to develop a framework for a comprehensive investment strategy and sector policy and planning. First, the Bank needs to employ the principles of the Comprehensive Development Framework to coordinate donor activities by putting the country at the center and eschewing the geographic division of the country among donors. Bangladesh’s meager resources demand that sector investments should be optimized where they provide the highest return regardless of who finances them. Furthermore, since the opening up of the Jamuna Bridge is likely to reorient economic activities, the development and improvement of the road network will no longer be focused on the traditional north-south axis, separated by the Jamuna. Hence, what may have been an acceptable arrangement in the past may not be suitable under the new geographic configuration of economic activities, where there may be a need for a joint donor program in improving and developing the road network to respond to the new economic geography.

4.6 Second, an attempt needs to be made to rekindle the efforts to develop an institutional mechanism for long-term strategic planning and policy development. The idea of an inter-ministerial committee is attractive, but given its experience and the turf politics in the country, it may face the same fate as its predecessor. There may be a need to make fundamental policy and institutional changes in the transport sector. This may include establishing a ministry of transport to bring all transport modes under one parent ministry, and corporatize and commercialize the various entities that make up the departments and divisions of the current ministries. The parent ministry then focuses on strategic planning and policy development in the sector, while the corporatized and commercialized entities concentrate on implementing policies, and operating and maintaining the country’s infrastructure assets. In the road sector, this may involve

corporatizing RHD by instituting a Roads and Highway Authority governed by an autonomous board (similar to what some neighboring countries have). This will not only help in strategic investment planning but will also prepare RHD for its future role — maintaining the roads that it is currently building.

### **Road Maintenance and Management System**

4.7 The road network in Bangladesh is rapidly expanding and improving. However, the political and institutional framework in the country is such that the culture of road maintenance has not fully developed. The government's political incentives and its desire to distribute government resources as widely as possible steer it towards putting more resources into new construction than into the maintenance of existing assets. Similarly, the primary focus of the sector agencies is on implementing donor-supported projects, instead of recasting their organizational and incentive structures to promote and deepen the culture of maintenance in their institutions.

4.8 Despite the difficult political situation and the perverted incentive structures within the government and road agencies, the Bank has tried to promote prioritization of maintenance by getting agreement from the government to increase its budgetary allocations for maintenance works and by providing assistance to road agencies to improve their capacity to maintain the road network. These efforts, however, had only limited success. The government has been increasing resource allocation for maintenance as part of the credit agreement of the First RRMP, and as part of its counterpart funding for the periodic maintenance components of the ongoing Bank-supported projects. On the sector agency level, the IDC-3 work has supported the establishment of an HDM-III unit in RHD to streamline its maintenance prioritization and expenditure planning. The IDC-3 has also supported the reorganization of RHD aimed at changing the incentive structure within RHD so that it is more responsive for maintenance work. Similar efforts are also taking place in LGED.

4.9 While these are a good start toward a sustainable maintenance program, they are inadequate and somewhat random. Ensuring adequate and regular maintenance with the appropriate organizational and incentive structure requires major policy changes and political commitment from the various stakeholders in the road sector. In particular, the Bank needs to intensify its policy dialogue with the government to develop a stable source of road maintenance fund. This could be in the form of establishing a dedicated road fund where optimal road user charges are funneled back for maintenance. Experience in other countries suggests that when road funds are properly instituted and managed, they have been successful in providing a stable source of funding for road maintenance.

4.10 The Bank organized a seminar in 1998 to disseminate the experiences of road funds in other part of the world and explore whether such a system could work in Bangladesh as an alternative to the direct (and inadequate) government financing of road maintenance. However, the concept of the road fund has yet to get off the ground, and needs a committed champion in the country to promote the concept among high-level policymakers.

### **Private Sector Development**

4.11 Participation by the private sector in the transport sector of Bangladesh has been steadily increasing over the past several years. The private sector now dominates service provision in passenger and freight transport, and private contractors carry out most civil works under contract

with the RHD and LGED. The policy to contract out civil works, and the Bank's support to make resources available for road improvement and development, have stimulated the development of a vibrant domestic construction industry. There are now six internationally recognized domestic contractors in Bangladesh that are capable of competing with other international contractors under international competitive bid (ICB) contracts in Bangladesh and neighboring countries.

4.12 The achievement to date notwithstanding, the private sector still operates within a deficient institutional environment and unforgiving physical environment. Consequently, transport services are of poor quality and, in many cases, pose safety and health hazards. The vehicles used to provide urban passenger services are mostly cycle- and auto-rickshaws that cause extreme congestion and pollution, reducing the quality of life in major cities, especially Dhaka. Inter-city buses are usually overloaded, creating safety hazards for passengers. The trucking industry is also prone to overloading, causing premature deterioration of the road network.

4.13 On the construction industry side, the cost of road improvement and construction is one of the most expensive in the region. The primary reason is the geography and climate of the country, but the poor governance system and lack of transparency in contracting also contribute to the high cost. Because of the many rivers and frequent flooding in Bangladesh, roads have to have high embankments, bridges are frequently required, and construction seasons are short. In addition, the lack of stone aggregate in the country means that it either has to be imported or created from expensive bricks.

4.14 Aligning the cost of road works with the rest of region would not be easy, because of Bangladesh's unique geography and climate. However, improving the institutional framework within which road works are procured and developed could bring substantial cost savings. The upstream market for road construction materials appears to not to be competitively organized and faces import and regulatory barriers, which may be one reason the costs are so high. Hence, there is a need to study the industry in detail (including import regulations in the industry) to determine whether rents are being extracted from contractors, and to find solutions to make the industry more open and competitive.

4.15 Similarly, the process by which road works are procured and managed is riddled with high transaction costs and lacks transparency. The organizational and incentive structures of the implementing agencies suffer from bureaucratic rigidities and lack of an institutional process to manage the procurement of road works through a competitive transparent process. There is therefore a need to improve the organizational and incentive structures of the procuring agencies to reduce the transaction costs embedded in the contracting, and to enhance the transparency with which they procure and manage road works.

### **Rural Economic and Infrastructure Development**

4.16 In 1984, Bangladesh issued a Strategy for Rural Development, emphasizing the need to improve the quality of life of the rural population (who are overwhelmingly poor) through improved physical infrastructure, agriculture, and employment opportunities. The strategy was based on focusing development resources to about 1,400 (later increased to 2,100) "growth centers," selected based on socioeconomic priority and related rankings. RRMIMP I and II were designed to support the infrastructure component of the SRD to provide resources to improve selected feeder roads (type B) connecting growth markets and to improve the trading infrastructures in these growth centers.

4.17 A review of the SDR by the Bank, LGED, and others has found that the government's SDR is relevant and provides a valid framework for rural development in general and for infrastructure improvement in particular. The audit endorses these findings and applauds the Bank's readiness to support the government's initiative to improve the socioeconomic standing of the rural poor through better infrastructure.

4.18 The development of trading and transport infrastructure in rural community is providing essential support for poverty-reduction efforts in rural areas. A Socioeconomic Monitoring and Evaluation (SEME) study, carried out as part of the RRMIMP to determine the effects of the development of rural roads and trading infrastructures on rural economic and social development, concluded that there is a strong linkage between improved rural access and trading facilities on the one hand, and increased agriculture production, employment, income, social development, and poverty alleviation on the other hand.

4.19 By providing easier access to inputs and to markets for outputs, the availability of all-season rural roads and trading facilities has enhanced the opportunity the rural population (including women) have to participate in economic activities and broadened their horizons for entrepreneurial engagements. The development of rural roads generated substantial increase in the total movement of goods and persons, while decreasing unit transport costs for goods and passengers. Similarly, improvements in the trading infrastructure resulted in more hygienic and efficient marketing facilities. In addition, the new trading facilities promoted the development of new shops and commercial activities in the market.

4.20 Despite the encouraging results thus far, the majority of Bangladesh's rural population still remains abjectly poor even in the areas where there have been rural infrastructure improvements and other investments.<sup>6</sup> While these interventions have been important and necessary conditions for the poverty reduction efforts in Bangladesh, they have not been sufficient to bring a sustainable change in the level of absolute poverty in Bangladesh. However, non-infrastructure impediments to development prevent the rural population from getting out of poverty. The audit recommends that the Bank and the government examine the non-infrastructure impediments to development and design mitigating interventions.

4.21 Research and empirical evidence suggest that the non-infrastructure impediments to development often tend to be institutional, that is, the formal and informal institutions that shape the incentive structures for economic, social, and political exchanges are important determinants for development and poverty reduction, and maximize the impact of development interventions. Therefore, to maximize the effect of rural infrastructure development on poverty reduction, the audit suggests that the Bank and the GOB work to improve rural institutions that determine the incentive structures within which economic, political, and social exchanges take place.

4.22 There is considerable political activity in rural Bangladesh, which has a bearing on its economic development. The Union Councils are the main focal point for political and social activities. They also control economic activities through committees that manage market stalls in villages. However, the Union Councils have weak organizational capacity and are often vulnerable to capture by powerful local elites, often referred to as "musclemen." These people, often supported by politicians, erode the rule of law at the local level, bully people to vote in a certain way, and distribute political favors. Their involvement in the assignment of market stalls,

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6. In addition to the rural trading and transport infrastructures, the government, as part of its development strategy, has been supporting the establishment of health and family planning institutions, educational institutions, financial institutions, and extension services.

for example, is believed to have reduced the transparency and efficiency with which the market stalls were distributed, with consequences of keeping the lease price of stalls low and probably preventing the very poor and disfranchised from getting market stalls.

4.23 The rural economy in Bangladesh needs a conducive institutional framework to ensure that the benefits of infrastructure and economic development reach their targets. Therefore, the Bank needs to work with GOB to improve and develop rural institutions in Bangladesh. The Union Councils may make a good starting point. Future Bank support in rural areas should consider providing support to Union Councils to increase their organizational capacity and improve the institutional framework within which they are operate. In a better institutional environment, Union Councils could become the focal point for economic development and for dispensing social safety net programs. But first, the rule of law and institutional environment need to be improved.

## 5. Ratings

### Outcome

5.1 The PAR agrees with the ICR in rating the outcome of both projects as *satisfactory*. Both projects substantially achieved their objectives and are providing measurable benefits to the country, which is reflected in the high ERR. The good quality of civil works are improving the flow of traffic and providing good riding quality for both motorized and non-motorized vehicles.

### Institutional Development Impact

5.2 The PAR rates the institutional development impact of RRMP as *modest*, and rates the impact of RRMIMP as *substantial*. These ratings are consistent with the ICR. LGED has benefited greatly from the institutional development efforts of RRMIMP, but the RHD has yet to appreciate the support extended to it to improve its institutional capacity.

### Sustainability

5.3 In the judgment of the audit, the benefits of the project should be sustainable as long as the government continues to provide the necessary funding to maintain the improved roads. From the technical point of view, the roads were built with acceptable quality, and should therefore not pose any sustainability problem, except from flooding, which could wash out the roads and structures. In addition, the institutions responsible for maintaining the road network (i.e., RHD and LGED) have the necessary capacity to do so. The PAR therefore rates the sustainability of both projects as *likely*.

5.4 However, the PAR recommends that a sustainable road maintenance funding arrangement needs to be established to ensure a stable and adequate flow of funding for maintenance. In addition, the problem with truck overloading needs to be controlled through a better axle-load management and control, which would otherwise damage the improved roads soon.

## **Bank Performance**

5.5 The PAR agrees with the ICR in rating Bank performance in both projects as *satisfactory*. The Bank worked closely with the government in identifying projects to support the overall economic development and poverty reduction efforts of the government. The quality of Bank supervision was high and demonstrated professionalism and keen understanding of the client's needs and institutional constraints. The Bank-borrower relationship has been productive in expediting implementation of the projects and making adaptations to changing circumstances.

## **Borrower Performance**

5.6 The PAR rates borrower performance in both projects as *satisfactory*, which is consistent with the ICR. Both LGED and RHD excelled in implementing the projects. Most of the loan covenants were met.

## **6. Lessons Learned and Recommendations**

6.7 The following key lessons and recommendations emerge from this audit.

6.8 ***Examine the non-infrastructure impediments to poverty reduction.*** While the Bank's assistance in developing rural infrastructure has helped increase economic activity and improve quality of life, the rural population of Bangladesh remains, by and large, poor. Therefore, non-infrastructure interventions, such as improving rural institutions, are needed to maximize the impact of infrastructure investments on poverty reduction. Institutional interventions should be geared towards making the Union Councils more efficient, responsive, and accountable to the rural population. This will involve directly supporting Union Councils to increase their organizational capacities, and working with local communities to design institutional interventions to improve the rule of law in rural communities, and reduce the role of "musclemen" in political and economic activities.

6.9 ***Take a sector-program approach.*** The road sector in Bangladesh is nearing maturity and the Bank has accumulated extensive experience in the sector. It is now time, therefore, to move towards a programmatic and sector-wide investment approach. This would help facilitate the development of an institutional framework for long-term sector investment strategies and policy reforms for improved road management and financing.

6.10 ***Rationalize donor coordination.*** The current geographical division of donor activities in Bangladesh may not be based on comparative advantage of the donors and may no longer be suitable with the opening of the Jamuna Bridge. The development and improvement of the road network may require a reorientation from the traditional north-south axis to one that best serves the new geographic configuration of economic activities. Therefore, the Bank needs to work with all donors and the government to ensure investment strategies are coordinated on the basis of rational and comparative advantage criteria.



## Basic Data Sheet

### ROAD REHABILITATION AND MAINTENANCE PROJECT (CREDIT 1827-BD)

#### Key Project Data (amounts in US\$ million)

	<i>Appraisal Estimate</i>	<i>Actual or Current estimate</i>
Total project costs	157.6	161.73
Loan amount	102.0	92.8
Cofinancing	-	55.1
Cancellation	-	9.16
Date physical components completed	12/31/95	12/31/1996
Economic rate of return	35%	17%

#### Cumulative Estimated and Actual Disbursements

	<i>FY88</i>	<i>FY89</i>	<i>FY90</i>	<i>FY91</i>	<i>FY92</i>	<i>FY93</i>	<i>FY94</i>	<i>FY95</i>	<i>FY96</i>	<i>FY97</i>
Appraisal estimate (US\$ thousands)	2.90	11.3	27.80	51.60	73.50	89.7	98.60	101.3	102.0	102.00
Actual (US\$ thousands)	4.85	7.03	16.82	25.12	33.18	46.0	62.79	79.47	94.47	96.50
Actual as % of estimate	167	64	61	49	45	51	64	78	93	95.00
Date of final disbursement:										

Source of actual disbursement: Roads & Highways Department

#### Project Dates

<i>Steps in project cycle</i>	<i>Date Planned</i>	<i>Date Actual</i>
Identification	October 1981	June 23, 1983
Preparation	February 1982	January 22 – February 5, 1985
Appraisal	October 2, 1986	January 7-23, 1987
Negotiations	May 11, 1987	May 13-19, 1987
Board Presentation	April 14, 1987	June 23, 1987
Signing	June 1987	September 2, 1987
Effectiveness	October 1, 1987	February 25, 1988
First tranche release	October 1, 1987	September 20, 1987
Second tranche release	October 1, 1989	January 31, 1993
Project Completion	December 31, 1995	September 30, 1996
Loan Closing	June 30, 1996	December 31, 1996

#### Staff Inputs (staff weeks)

<i>Stage of project cycle</i>	<i>Actual</i>	
	<i>Weeks</i>	<i>US\$</i>
Through appraisal	106.80	261.30
Appraisal-Board	39.60	70.70
Board Effectiveness		
Supervision	173.40	283.60
Completion	6.2	7.4
<b>TOTAL</b>	<b>333.2</b>	



## Basic Data Sheet

### RURAL ROADS AND MARKETS IMPROVEMENT AND MAINTENANCE PROJECT (CREDIT 1940)

#### Key Project Data (amounts in US\$ million)

	Appraisal estimate	Actual or Current estimate
Total project costs	98.3	94.8
Loan amount	62.3	57.0
Cofinancing	23.9	25.16
Cancellation	-	5.15
Date physical components completed	06/30/96	06/30/97
Economic rate of return	25%	25%

#### Cumulative Estimated and Actual Disbursements

	FY88-89	FY89-90	FY90-91	FY91-92	FY92-93	FY93-94	FY94-95	FY95-96	FY96-97	FY97-98
Appraisal estimate	5,800	9,400	30,100	38,500	44,500	51,800	58,900	62,300	-	-
Actual *		8,638	14,420	22,251	28,353	33,946	43,562	51,598	56,120	57,900
Actual as % of estimate		91.89	47.91	57.79	63.71	65.53	73.96	82.82	90.01	92.94
Date of final disbursement:	October 31, 1997									

\*Source of actual Disbursement: Local Government Engineering Department (LGED)

#### Project Dates

Steps in project cycle	Date actual
Identification	1981
Preparation	1983-87
Appraisal	Sept. 21-Oct.15, 1987
Negotiations	May 23-27, 1988
Board presentation	June 24, 1988
Signing	July 29, 1988
Effectiveness	May 05, 1989
Project completion	June 30, 1997
Credit closing	June 30, 1997

#### Staff Inputs (staff weeks)

Stage of project cycle	Actual	
Through appraisal	68.3	100.1
Appraisal-Board	64.4	105.0
Board-Effectiveness	273.3	438.1
Supervision		
Completion	1.3	1.0
Total	407.3	644.2

## Mission Data

Stage of project cycle	Month/year	No. of persons	Staff days in field	Specialized staff skills represented	Performance Rating		Types of problems
					Implementation Status	Development impact	
Through appraisal	1981 to 1987						
Appraisal through Board approval	Sept.'87	3	25	TE, FS, TE			
Board approval thru' effectiveness	Feb.'88	1	14	TE			
Supervision 1	Oct.'88	2	21	TE, TS			
	Oct.'89	2	13	TE, HE	3	1	M
	Apr.'90	3	6	TE, HE, DO	3	1	M
	Sept.'91	2	8	TE, TS	2	1	M
	Feb.'92	3	5	TE, HE, TE	2	1	M
	May '92	5	19	TE, TS, TS, DO, HE	1	1	M
	Nov.'92	4	13	TS, TE, HE, TS	1	1	C
	June'93	2	10	TS, HE	2	1	C
	Nov.'93	4	14	TS, TE, HE, AR	2	2	C
	Feb.'94	3	19	TS, TS, TE	2	2	C
	May'94	4	17	TS, TE, TS, HE	S	S	C
	Nov.'94	3	9	TS, TE, HE	S	s	C,M
	Feb.'95 (partial mission)	2	12	OS, TE	-	-	-
	May'95 (partial mission)	4	8	TS, HE, HE, TE	-	-	-
Nov.'95	4	14	TS, TE, HE, TE	S	S	C,M	
May'96	2	6	TE, HE	S	S	C,M	
Completion	June '97	4	8	TE, HE, HE, US	S	S	-

## Notes:

## Ratings:

Minor Problem: 1; Moderate Problem: 2; Major Problem: 3

Highly Satisfactory: HS; Satisfactory: S; Unsatisfactory: U; Highly Unsatisfactory: HU

## Specialization:

Transport Economist: TE; Highway Engineer: HE; Transport Specialist: TS; Disbursement Specialist: DO

Operations Specialist: OS; Urban Specialist: US; Architect: AR; Financial Specialist: FS

## Problems:

Financial Problem: F; Management Problem: M; Covenant Problem: C