

THE EVALUATION OF
FOUR DONORS' ASSISTANCE IN
THE BANGLADESHI TRANSPORT SECTOR

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OPMAC Corporation

ABBREVIATIONS

A&H: Alignment and Harmonization
ADB: Asian Development Bank
ADP: Annual Development Programme
BBA: Bangladesh Bridge Authority
BR: Bangladesh Railway
CIDA: Canadian International Development Agency
CMS: Central Management System
DfID: Department for International Development
GoB: Government of Bangladesh
GTZ: Deutsche Gesellschaft für Technische Zusammenarbeit
IFAD: International Fund for Agriculture Development
JCASF: Joint Country Assistance Strategy Framework
JBIC: Japan Bank for International Cooperation
JICA: Japan International Cooperation Agency
JMBA: Jamuna Multipurpose Bridge Authority
LCB: Local Competitive Bidding
LCG: Local Consultative Group
LGED: Local Government Engineering Department
LOB: Line of Business
MoC: Ministry of Communication
MOU: Memorandum of Understanding
OECD-DAC: OECD Development Assistance Committee
PMP: Periodic Maintenance Project
PRSP: Poverty Reduction Strategic Paper
RAP: Resettlement Action Plan
RAMS: Road Asset Management System
RDP-21: Rural Development Programme 21
RHD: Road and Highway Department
RIIP-2: Rural Infrastructure Improvement Project II
RIP: Road Improvement Project
SIDA: Swedish International Development Cooperation Agency
STP: Strategic Transport Plan for Greater Dhaka
VOC: Vehicle Operating Costs
WB: World Bank
WHO: World Health Organization

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1. INTRODUCTION

A. Study Background and Objective

In 2006, the Asian Development Bank (ADB), the United Kingdom's Department for International Development (DfID), the World Bank (WB), and the Government of Japan established the Joint Country Assistance Strategy (JCAS) for assistance in Bangladesh. JCAS is a medium to facilitate common understanding on key elements, such as development issues and the outcome of assistance, for the four donors' country assistance strategies. When WB commenced the Country Assistance Evaluation, which reviewed WB's support to Bangladesh from 2001 to 2007, the four donors agreed to carry out a joint evaluation of their assistance with emphasis on alignment and harmonization (A&H) in Bangladesh.

This joint evaluation consists of two parts: an umbrella study and sector evaluation works. Evaluators commissioned by ADB, DfID, and WB assumed the preparation of the umbrella study. Representing Japan, the Japan International Cooperation Agency (JICA)¹ contributed to this joint effort by commissioning this study to OPMAC Corporation. This evaluation is conducted by Nobuyuki Kobayashi (OPMAC Corporation) and Takeo Matsuzawa (PADECO Co., Ltd.). The opinions expressed in this report do not necessarily reflect official views or positions of the Government of Japan, JICA, or any other institution. This study evaluates the four donors' assistance in the transport sector with emphasis on A&H and intends to provide input into the umbrella study.

In the transport sector, ADB, WB, DFID, and Japan, together with relevant government agencies, carried out various A&H activities during the period 2001-2007. For example, ADB, WB, and JICA worked on the preparation of Padma Bridge Project. DfID has supported several government agencies to enhance their capacity for sector strategy, road maintenance, and road safety. The results of DfID-supported analytical and advisory works, in particular for road maintenance funds, have been widely shared through LCG subgroup meetings and workshops. For rural roads, the Government of Bangladesh (GoB) coordinated donors' assistance and assigned project areas to donors for the betterment of efficiency.

The audience of this evaluation is those who are engaged in the preparation of country assistance strategies for Bangladesh and the implementation of A&H activities, especially

¹ On October 1, 2008, the Japan International Cooperation Agency (JICA) merged with Overseas Economic Cooperation Operations (OECOs) of Japan Bank for International Cooperation (JBIC). In this report, both JICA and JBIC OECO divisions before the merger will be referred to as "JICA" unless otherwise needed.

among Japan's aid agencies (Ministry of Foreign Affairs and JICA). This evaluation is designed to assess the four donors' assistance from 2001 to 2007 on the basis of OECD DAC Evaluation Criteria, to draw practical lessons and make recommendations to the audience.

B. Scope, Methodology, and Timing

The scope of this evaluation covers the four donors' assistance from 2001 to the present. The four donors' programs/projects range over various subsectors of the transport sector. This evaluation tracks the input of their projects/programs across the sectors. In order to withdraw concrete recommendations, however, the evaluation focuses on land transport with a strong emphasis on corridor development and rural roads, which are shown in Appendix 5 and 6. This narrower interest is justified because new projects pledged by the four donors after FY2001 are for the improvement of land transport except ADB's Chittagong Port Trade Facilitation. Each evaluation criterion deals with evaluation findings relevant to corridor development and rural roads. Additional topics are also discussed if these topics contain valuable findings.

This evaluation employs the OECD DAC Evaluation Criteria - *Relevance, Efficiency, Effectiveness, Impact, and Sustainability*- as evaluation criteria. The Criteria will be applied as follows:

Relevance: *Relevance* assesses the consistency between GoB's development policies / sector plans and the four donors' assistance in the transport sector. Both common and differing strategic focuses between the Fifth Five Year Plan (national development strategy in FY2001) and Poverty Reduction Strategic Paper (PRSP, an ongoing strategy until FY2008) are identified first. Consistency between the common focuses and four donors' assistance shows how the four donors coped with the essential needs in the sector. This analysis directly deals with the consistency with corridor development and rural roads. In addition, Consistency between new strategic focuses (road maintenance and urban transport) and four donors' assistance illustrates how the four donors aligned with changes in the sector.

Efficiency: *Efficiency* analyzes how and how much coordination activities contributed to the productivity of formation and implementation in the four donors' assistance. In concrete terms, actual A&H cases in the transport sector

are reviewed with an emphasis on how A&H activities affected the transaction costs of relevant parties, in particular GoB, and what the potential risks were. Topics relevant to corridor development and rural roads are joint co-finance for Padma Bridge and area assignment in rural road. In order to withdraw valuable evaluation findings, MOU for railway reform and joint co-finance for emergency disaster damage rehabilitation are analyzed.

Effectiveness/Impact: *Effectiveness* examines to what extent the four donors' assistance jointly supported Bangladesh in coping with issues in the transport sector. *Impact* describes the extent to which the four donors' assistance jointly contributed to economic and social development - considered to be long-term effects of assistance - in Bangladesh. *Impact* also verifies the intended and unintended, direct and indirect, positive and negative changes which came about as a result of the assistance. As both criteria assess the incidence of development results of assistance, they are combined and reviewed at the same time. In this criterion, the development effect of Dhaka-Northwest corridor and Dhaka-Chittagong corridor is reviewed. For the analysis of rural roads, Rural Development Project 21 is chosen. As for negative impact, traffic safety is discussed.

Sustainability: *Sustainability* illustrates the status of the capability of relevant government agencies to maintain the effectiveness of transport infrastructure. In addition, this criterion examines the extent to which the four donors' assistance enhances the maintenance capacity of government agencies. This analysis focuses on two government agencies. One agency is responsible for trunk roads relevant to corridor development and another for rural roads.

The evaluation team visited Bangladesh in September and November 2008. During the missions, the evaluation team interviewed people concerned with the formation and implementation of projects / programs.² In November 2008, the evaluation team discussed their preliminary findings at the meeting of the LCG Transport subgroup. After the review by evaluation staff of the relevant aid agencies, the study was completed in May 2009.

C. Report Structure

Following this introduction, Chapter 2 outlines the current state of the Bangladesh transport

² For the list of organizations interviewed, please see Appendix-1. For the questionnaires to interviewees, please see Appendix-2, Appendix-3, and Appendix-4.

sector and identifies emerging issues. In Chapter 3, evaluation findings are presented in accordance with the OECD-DAC Evaluation Criteria as explained above. Chapter 4, as the conclusion of this evaluation, distills the evaluation findings into “Lessons Learned” and “Recommendations“. We define “Lessons Learned” as practical knowledge to better the formation and implementation of projects / programs and “Recommendations“ as more specific actions which the four donors can pursue.

2. SECTOR BACKGROUND

A. Sector Overview

Bangladesh has the highest road network density in the South Asia region with a network extended over 270,000km³. The total length of road network increased substantially from 4,000 km in 1971. This extensive road network shows that significant investments have been made in road assets. The budget allocation for the road sector also proves a focus on roads. ADP allocation for the transport sector has stayed at 13-20% of ADP since FY1999/2000⁴. The ADP allocation for the Road and Highway Department (RHD) has accounted for 70-90% of the transport sector for the last several years.

Table 2-1: Road Network Density

Country	Km/1000 Sq. km
Afghanistan	53
Bangladesh	2,079
Bhutan	93
India	1,115
Nepal	121
Pakistan	335
Sri Lanka	1,422

(Source: World Bank)

Table 2-2: ADP Budget Allocation

Fiscal Year	Total Amount of ADP (Mil. Taka)	ADP Allocation to Transport Sector (Mil. Taka)	ADP Allocation to RHD (Mil. Taka)
2001/02	160,000	32,300.5	25,193.3
2002/03	171,000	32,468.3	22,828.4
2003/04	190,000	33,881.5	25,056.0
2004/05	205,000	33,668.9	30,294.0
2005/06	215,000	29,952.8	26,356.0
2006/07	216,000	31,919.3	29,447.8

(Source: Ministry of Finance)

³World Bank Website
(<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/EXTSARREGTOPTRANSPORT/0,,menuPK:579604~pagePK:34004175~piPK:34004435~theSitePK:579598,00.html>)

⁴ The allocation for the transport sector excludes investment in rural roads, which is classified in a different sector in ADP.

Motorization has progressed in tandem with the expansion of the road network. The number of registered vehicles increased more than 40% for the five years 2001-2005. This trend is expected to continue in the foreseeable future. The draft version of the Road Master Plan assumes that the number of passenger cars will increase threefold and that of trucks will double in 2005-2015.

The investment in the development of the railway network is not as extensive as that in the expansion of the road network. Train traffic on Jamuna Bridge, which was completed in 1998, is a notable exception. The total length of the railway network is 2835.04km (Broad Gauge: 659.33km, Dual Gauge: 374.83km, Meter Gauge: 1800.88km)⁵. The railway network is split into East and West Zones, both of which connected by Jamuna Bridge.

BR's operational performance lagged behind those of other railway systems in the South Asia region⁶. Although problems in the physical environment such as periodic flood and the absence of sufficient bridging over major rivers are unfavorable for railway operations, operational data for the Bangladesh railway sector suggest that there is considerable room for productivity gain. In particular, passenger-km per wagon and traffic unit per staff are substantially below those in India and Pakistan.

Table 2-3: Railway Operational Indicators

Indicator	Bangladesh	India	Pakistan
Traffic Unit (TU) (bil.)	4.90	826.00	25.35
TU per route-km (mil.)	1.80	12.89	3.31
TU per locomotive (mil.)	17.00	23.63	41.39
Ton-km per wagon (mil.)	0.09	1.50	0.20
Passenger-km per wagon (mil.)	2.80	11.82	13.97
TU thousand per staff	138.00	537.00	310.00

(Source: ADB and WB)

Inland water transport is another major mode of transport. Of the Bangladeshi river system, 6000 km is navigable by modern mechanized vessels in the monsoon season and, out of these routes, 3800km is available year-round. Due to heavy silting, the maintenance of waterways means constant dredging. The lack of budget allocation makes maintenance work a difficult task, though WB supported GoB in investment in inland waterway including

⁵ Ministry of Finance (2007), Bangladesh Economic Review 2007

⁶ ADB and World Bank, Best Practices for Private Sector Investment in Railways

dredging and the refurbishment of dredging fleets until 2001. The maintenance of navigable waterways is subordinate to that of ferry crossing.⁷ Routine maintenance of dredging fleets has not been conducted as planned. According to vessel operators, the waterways of the Dhaka-Chittagong are the only the passage which can ensure the expected level of operations on the basis of river classification. Although topographic and climatic condition in Bangladesh is favorable for inland water transport, an opportunity remains unexploited due to inadequate maintenance of waterway.

Modal share also proves the steady progress of motorization. Today, road transport is the most preferred and the predominant mode both in passenger and freight traffic. Bangladesh increasingly depends on road transport. The share of road transport reached 88% in passenger traffic and 80% of freight traffic in 2005, while other modes of transport have declined steadily. In railway transport, even in absolute terms, passenger-km peaked in the 1980s and Ton-km stagnated.

Table 2-4: Modal Share (Passenger)⁸

	Total Passenger-km	Road	Railway	Inland Water Transport
1975	17 bil.	54%	30%	16%
1985	35 bil.	64%	20%	16%
1989	57 bil.	68%	17%	15%
1997	90 bil.	72%	11%	17%
2005	111.5 bil.	88%	4%	8%

(Source: Inception Report for the Bangladesh Railway Sector Improvement Project)

Table 2-5: Modal Share (Freight)

	Total ton-km	Road	Railway	Inland Water Transport
1975	2.6 bil.	35%	28%	37%
1985	4.8 bil.	48%	17%	35%
1989	6.3 bil.	53%	17%	30%
1997	12 bil.	65%	7%	28%
2005	19.6 bil.	80%	4%	16%

(Source: Inception Report for the Bangladesh Railway Sector Improvement Project)

⁷ World Bank, People's Republic of Bangladesh Revival of Inland Water Transport: Options and Strategies (Report No.38009), 2007

⁸ Bangladeshi Railway Sector Improvement Project-Reform Consultancy Services, Inception Report, 2007

Several factors works lie behind the prominent shift in transport mode. Significant investment in road networks is one of the reasons. Deterioration in quality of railway services can also explain this shift. Even on the Dhaka-Chittagong line, the busiest railway service in the country, broken rails and signal malfunctioning frequently cause delays. Due to the decrepit infrastructure, the number of delayed passenger services has been increasing since 2000. In the last several years, MoC has recognized overdependence on road transport and has made efforts to develop a multimodal transport system. An Integrated Multimodal Transport Policy, which is expected to set the direction toward more balanced development and integration among the major transport modes, is being established.

In investment in infrastructure, the transport sector has absorbed a substantial portion of ADP. In both allocation and expenditure of ADP, the transport sector was among the highest during the evaluation period.⁹ Rural development, which includes rural roads, is another sector which absorbs a substantial amount of investment. Investment by the four donors', excluding rural roads, is estimated at USD 841 million and accounts for a third of ADP expenditure in the transport sector.

Table:2-6: ADP Allocation and Expenditure for the Transport Sector

unit: Crore Tk.

	FY2001/02	FY2002/03	FY2003/04	FY2004/05	FY2005/06	FY2006/07
Total ADP Allocation	16000	17100	19000	20500	21500	21600
Transport	3230.05	3246.83	3388.15	3366.89	2995.28	3191.93
(% of total)	20.2%	19.0%	17.8%	16.4%	13.9%	14.8%
Total ADP Expenditure	14090	15434	16817	18771	19472	17206
Transport	2799.60	2912.38	3034.12	3030.96	2784.54	2580.55
(% of total)	19.9%	18.9%	18.0%	16.1%	14.3%	15.0%

(Source: Ministry of Finance)

B. Government Agencies and their role

The MoC is responsible for all aspects concerning the development, operation, and maintenance of major land transport such as road and railway in Bangladesh. The agencies under MoC include RHD, the Bangladesh Bridge Authority (BBA), and Bangladesh Railways (BR).

⁹ In ADP, the transport sector does not include investment in rural roads.

RHD is responsible for the development and maintenance of the main road network of the country comprised of National, Regional and Zila roads with an approximate length of 21,000 km and with 18,258 bridges and structures of different types. The annual budget for RHD in the FY 2007/08 was Tk.34,630 million, of which Tk.25,470 million (73.5%) was for development and Tk.9,160 million (26.5%) for revenue budget including maintenance.

BR is the sole operator of railway services in Bangladesh and is in charge of the development and maintenance of railway the infrastructure. BR's railway service, in particular its passenger business, is not commercially viable. After the day-to-day operation of railways was separated from MoC in 1995, revenue from railway operations stayed below expenses. Passenger services account for 84% in transport units and 71% in revenue, freight service 16% in transport units and 29% in revenue (FY2006/07).¹⁰

BBA, formerly Jamuna Multipurpose Bridge Authority, is responsible for the construction, operation and maintenance of bridges exceeding 1,500 meters in length. Two completed bridges (Jamuna Bridge and Muktepur Bridge) and one in the planning stage (Padma Bridge) are under the jurisdiction of BBA. In FY2006/07, the toll revenue from Jamuna Bridge was Tk. 1461.9 million. Jamuna Bridge generates a sufficient amount of toll revenue, for BBA to finance routine and periodic maintenance of Jamuna Bridge.

Regarding rural roads, Local Government Engineering Department (LGED) is under the Ministry of Local Government, Rural Development, and Cooperatives. LGED implements a wide variety of development programs in rural areas, one of which is the development and maintenance of rural roads classified as upazila, union, and village roads. A total of 112,629 km (dirt road: 64,691km, paved road: 47,938km) upazila and union roads, and 572,458 meter bridge/culvert were constructed and rehabilitated during FY1991/92 to FY2005/06. A sizable budget, Tk. 2 billion for FY 2003/04 and Tk. 3.4 billion for FY 2004/05 was allocated for maintenance.

C. Emerging Issues

The progress of motorization has driven new issues to center stage in the transport sector. Road maintenance is one of these issues. Passengers and cargo rely more on road transport than ever before. Heavier road traffic causes wear and tear of road assets at a more rapid pace. Due to the lack of timely and proper maintenance many of the roads and

¹⁰ ADB(2007), Bangladeshi Railway Sector Improvement Project-Reform Consultancy Services, Inception Report

bridges have deteriorated before the expiry of their economic life, causing higher transportation and rehabilitation costs. The expected economic returns assumed for prolonged benefits during planning were not been realized without proper maintenance.

GoB has recently paid serious attention to the maintenance of infrastructure. GoB has taken steps to invigorate measures for the maintenance of road assets, through more allocation of resources in the Annual Budget. The budget for maintenance activities at RHD increased from Tk. 3,120 million in FY00/01 to 7,655 million in FY06/07.

The progress of motorization has also spotlighted road safety as an urgent issue. The cost of road accidents is estimated at 2% of GDP and the number of road accidents has stayed at a high level. Traffic statistics are furthermore understated due to a weak reporting system. The fatality rate is also surprisingly high in Bangladesh, with over 100 deaths per 10,000 versus 4 in Malaysia and 12 in India¹¹. People of 14-44 years-old, predominantly male, accounted for more than 50% of those in fatal accidents. These figures suggest that fatal accidents are likely to involve earners. The heavy burden of traffic accidents is mainly on the families who suffer from the loss of income earners.

Table 2-7: Number of Traffic Accidents

	2001	2002	2003	2004	2005	2006
Total Accidents	2,808	3,703	3,912	3,322	3,197	3,405
-Fatal	2,029	2,599	2,752	2,447	2,424	2,668
-Grievous	642	904	921	664	631	610
-Simple Injury	137	200	239	211	142	127

(Source: Bangladesh Road Transport Authority)

In urban areas, the improvement of urban transport is expected to alleviate the seriousness of issues such as road accidents, traffic congestion and air pollution, many of which are caused by rapid motorization. The number of road accidents in major cities (Dhaka, Chittagong, Khulna, and Rajshahi) accounts for 20-30% in Bangladesh. In conjunction with the prevalent use of two-stroke engines and the lack of official automobile inspection, vehicle emission is a main contributor of air pollution in urban areas. Based on annual average of concentration at Dhaka during 2003, NO₂ was close to the national standard and surpassed the WHO standard.¹² Emission control remains an issue, even though ADB

¹¹ Ministry of Communication, (Draft) Road Mater Plan

¹² World Bank (2006), Bangladesh Country Environmental Analysis

supported GoB in the establishment of vehicle inspection centers.

GoB has started sketching the development of urban transport in Dhaka where rapid urbanization has amplified the issues caused by motorization. MoC is establishing the Strategic Transport Plan for Greater Dhaka (STP). STP proposes the development of a mass transit system, including bus rapid transit and urban railways, and the introduction of traffic management.

3. EVALUATION

A. Relevance

(1) Approach

The approach takes several steps. The Evaluators initially identified both common and new strategic focuses between the Fifth Five Year Plan (FY1997/98-FY2001/02) and PRSP (FY2005/06-FY2007/08). The Fifth Five Year Plan is the national development strategy at the beginning of the evaluation period (FY 2001-2007), whereas PRSP is the one at the end of the period. As a next step, the relevancy between the common focuses of the two national strategies and the four donors' assistance, including JCAS and actual investment, was reviewed. This analysis shows whether or how the four donors' assistance addressed the unchanged and essential needs in the sector throughout the evaluation period. Lastly, analysis was made of how the four donors' assistance coped with changes in the two policies, i.e. the new strategic focuses to be reviewed.

The evaluability of the relevance between GoB's transport policy and the four donors' assistance has a certain reservation. The alignment between GoB's current development policies and the four donors' assistance has become less direct than before. The Fifth Five Year Plan indicated what the government would invest in, and consistency between GoB's transport policy and the four donors' assistance in the transport sector can be shown with clarity. On the other hand, PRSP specifies development goals (what the strategy intends to achieve) rather than outputs (what the government needs to invest in). Also, in the transport sector, GoB approved few master plans to identify and prioritize investment opportunities and to provide comparable information with the four donors' assistance in the transport sector. This suggests that there are a few clues for rigorous analysis of the relevance between PRSP and the four donors' assistance.

(2) Consistency with Unchanged Strategic Focuses

The transport strategy in the Fifth Five Year Plan centered on the enhancement of five strategic corridors (Dhaka-Chittagong, Dhaka-Northwest, Dhaka-Khulna, Dhaka-Sylhet, and Khulna-Northwest) reinforced by the comprehensive development of rural transport. The improvement of the five corridors and further penetration to off-road hinterlands are among the key elements of the transport strategy.¹³ These strategic focuses remain in PRSP, which defines the development of strategic national and regional corridors as emerging challenges for pro-poor growth in transport infrastructure. Transport Sector Coordination Wing under Planning Commission drafted a strategic framework for the

¹³ These strategic focuses are stated in "17.6.1 Objective" of the transport section in the Fifth Five Year Plan.

preparation of master plans and development programs/projects. This strategic framework recognized that these corridors would play an important role in the national economy and set planning guidelines along with the traffic volume of these corridors. Besides corridor development, PRSP stresses that rural road network investments should be in quality of network rather than network expansion.¹⁴

Consistency between GOB's transport policy and the four donors' assistance strategies in the transport sector is not easily evaluated with clarity, though the Evaluators reviewed whether or not the outcome of JCAS fitted the unchanged strategic focuses in the national strategies. JCAS recognized the importance of corridor development. In "Pillar 1: Improve the Investment Climate" of JCAS, the improvement of the Dhaka-Chittagong corridor is presented as a strategy outcome during 2006 - 2009. In light of the fact that Chittagong port generates sizable traffic demand for the Dhaka-Chittagong corridor, the completion and concession of a new container terminal, one of the milestones in the Pillar 1, also illustrates the four donors' strategic priority in corridor development.

Given that corridor development and the enhancement of rural transport are major themes in the transport strategy for the evaluation period, the four donors' assistance aligns with these themes in the national development strategies. As shown in Appendix-5, Appendix-6, and Appendix-7, investment in trunk roads, mostly in corridor development, and rural roads, accounted for more than a half and a quarter respectively of disbursement in the evaluation period. WB's contribution to the development of rural roads is obvious. WB accounts for more than 50% out of the four donors' total disbursement in rural roads. Investment in railway is the third largest and derives from the railway passage in the Jamuna Bridge, which is financed by ADB, and the improvement of the Dhaka-Chittagong line.¹⁵ The pledges of the four donors during FY2001-F2007 also illustrate the same emphasis on these two themes and weigh in the diversification of transport modals (as shown in Appendix-7).

(3) Response to New Strategic Focuses

PRSP includes sustainable strategy for road maintenance as one of the key issues in transport infrastructure. Unlike other key issues such as the further development of strategic corridors and Chittagong port, road maintenance was not given emphasis in the Fifth Five Year Plan. Moreover, PRSP promotes further study on the establishment of an autonomous road maintenance fund. Importance of road maintenance is inherited from the

¹⁴ These strategic focuses are found in "4. Critical Infrastructure" and "5.C.5 Infrastructure development "

¹⁵ For the further details of the four donors' disbursement data, please see Appendix-6 to Appendix-10.

National Land Transport Policy (NLTP). Precedent to PRSP, NLTP was approved by MoC in 2004. NLTP urged that the protection of road assets requires proper maintenance and proposed research on road maintenance funds and road user charges.

In tandem with more attention on the sustainability of road assets, donors stepped up their assistance to road maintenance. DfID initiated budget support for RHD in FY2005. After FY 2004, Japan financed maintenance works of both RHD and LGED with its Japan Debt Cancellation Fund. In addition, DfID-funded TSMR has assisted GoB in exploring the mechanisms and operational procedures of road maintenance funds.

PRSP is more concrete in the development of urban transport than the Fifth Five Year Plan was. PSRP points out that the pressure on the urban transport system, which has arisen with the prevalence of car ownership, has put a strain on transport infrastructure in most cities. It has promoted investment in a mass transit system. The Fifth Five Year Plan urged that urban transport be a vital component in transport strategy. After several years of preparation, GoB approved WB-assisted STP, a master plan for urban transport in Dhaka, in 2008. The lack of a master plan is one factor in the lack of assistance in urban transport. During the evaluation period, the four donors did not support investment in urban transport except the Dhaka Urban Transport Project funded by WB.

As mentioned above, the programming of national development strategy shifted its focus from output to development goals. The linkage between PRSP and development projects / programs has been more obscure than previous national development strategies. The most recent strategy, PRSP II for FY 2009-2011, does not detail investment either, though it identifies key issues and sets performance indicators by utilizing analytical work from unapproved master plans. In order to mediate between the national development strategy and projects / programs, master plans are required to shape investment opportunities in consideration of development goals and indicate investment priority and time frame. With its advisory activities, ADB supports the establishment of a road master plan and DfID does the same in preparing master plans for railway and inland water. However, GoB has not officially approved any of the above mentioned master plans.

(4) Evaluation Findings

The four donors' assistance is consistent with the common focuses in both the Fifth Five Year Plan and PSRP. The national development strategy during the evaluation period emphasizes that the development of trunk roads and rural roads is a crucial task in the

transport sector. The four donors' assistance in these subsectors accounts for a substantial portion of their support in the transport sector.

The attention to road maintenance, the further emphasis on urban transport, and the outcome oriented nature of PRSP are major changes in the national transport strategy that took place during the evaluation period. Although the four donors addressed the first change in their assistance, their slow response to other changes has slightly dented relevance to the national strategy. First, PRSP regards road maintenance as a new strategic issue in the transport sector. DfID and Japan have tackled this issue with technical assistance for maintenance capability and budget support for road maintenance.

Second, PRSP is more concrete on the causes of and countermeasure against traffic congestion in urban areas. STP, the blueprint of the urban transport in Dhaka, was approved in 2008 but investment has not been made so far. In order to avoid an overlap in assistance and to ensure the efficient investment in the subsector, GoB and donors need to establish development goals for urban transport in Dhaka, to identify necessary assistance including capacity building of executing agencies, and to select a lead donor agency in key assistance areas.

Lastly, the method of programming in the national development strategy has changed. As PRSP is more outcome-oriented, it mentions few projects / programs to invest in. Master plans play a vital role in linking investment and national plans. Through various coordination activities among the four donors in the transport sector, several master plans have been drafted. Although GoB was also involved in development of the master plan and the line ministries confirmed the consistency between draft master plans and their policy, GoB usually did not officially approve these. Delays in the approval of mater plans latently jeopardize the usefulness of planning efforts. It is desirable that GoB hastens the approval process of master plans. In order to strengthen the linkage between national development strategy and projects / programs, assistance by donors for the establishment of master plans needs to be continued. Continuous assistance by donors to establish sub-sector master plans would develop the mechanism to align sector investment programs, which assures the policy alignment through PRSP development. Furthermore, the establishment of master plans would improve the evaluability of relevance between GoB's transport policy and donors' assistance. More rigorous evaluation would provide useful information for better alignment of GoB's development strategy and donors' supports.

B. Efficiency

(1) Approach

Efficiency measures how economically inputs are converted to development results in terms of time and resources. In this evaluation, which places emphasis on A&H, we review this criterion by assessing how, and how much, actual A&H cases bore expected results such as reductions in transaction costs for GoB agencies and achievements unobtainable by a single donor.

After the review of Japanese assistance in the transport sector during the evaluation period, four types of A&H activities have been identified; Memorandum of Understanding (MOU), joint co-finance, parallel co-finance, and area assignment.¹⁶ MOU is an official agreement on policy framework and / or demarcation of assistance. Joint co-finance is a scheme to fund projects / programs in which donors share not only development outcomes but also, to some extent, the implementation process. Parallel co-finance is a scheme to fund projects / programs in which donors follow their administrative procedures independently and have common development outcomes. Area assignment is a demarcation method to be applied to multi-site projects / programs.

Table 3-1: A&H Activities in the Cases to be Examined

Case	MOU	Joint Co-finance	Parallel Co-finance	Area Assignment
Railway Reform	x		x	
Padma Bridge Project		x		
Rural Roads			x	x
Disaster Damage Rehabilitation		x		

(Source: ADB, DfID, Japan, and WB)

The Evaluators selected four cases in which Japan participated so that A&H modalities in the transport sector could be covered adequately. Cases examined are following; first, a case when the donors agreed on policy framework to support institutional reform and invested in the railway sector by parallel co-finance; Second, a case where donors funded a gigantic bridge project through a joint co-finance scheme; third, a case where donors split project areas under the strong leadership of an executing agency in rural roads; lastly, a case where donors supported disaster recovery over a cyclone-hit area through a joint co-finance scheme.

¹⁶ For review result, please see Appendix -13

(2) Railway Reform – MOU and Parallel Co-finance

Background: From its past experience of investment in the railway sector, ADB realized that the improvement of sector performance rested on the implementation of institutional reform. ADB initiated policy dialogue on reform agenda with the Bangladesh Railway (BR), the sole operator of railway services in Bangladesh, well ahead of the approval of the Railway Sector Investment Program. Without attention to ongoing policy dialogue, there would have been the risk that other donors' support in the railway sector would have weakened ADB's efforts. JICA and WB, both of which were potential financiers in the railway sector, recognized the risk and decided to formally share the reform agenda with ADB. JICA and WB understood that a better provision of railway services required not only investment in infrastructure but also institutional reform. When preparing the projects, the three agencies coordinated their mission schedules and had meetings several times in Dhaka as well as once in Tokyo and discussed potential areas of support in the sector and how the reform agenda should be imbedded in conditions for providing loans. In addition, the three agencies and GoB organized a workshop on reform strategy. The workshop aimed at learning from railway restructuring in other countries, such as Romania and Japan. Through policy dialogue with ADB, GoB was well informed about these joint efforts.

Alignment and Harmonization: On September 14, 2006, ADB, JICA, and WB signed the Memorandum of Understanding for the Bangladesh Railway Sector Program (MOU). The objective of the MOU is to outline the coordination framework for their support to BR. The MOU includes the Unified Program Matrix, which is based on policy dialogue between BR and the three donors with the lead of ADB.¹⁷ The matrix shows what policy action BR needs to pursue prior to the provision of loans. The matrix tied the provision of loans to BR's policy actions. GoB confirmed the reform agenda in the MOU.

After signing the MOU, ADB, JICA and WB separately approved loans in accordance with the matrix. For example, the implementation of the Line of Business (LOB), which is one of the first steps of corporatization, is tied with investments financed by the three donors. The introduction of the LOB is one of the conditions for releasing the second tranche of the Bangladesh Railway Investment Program financed by ADB. JICA finances two investment components under the Dhaka-Chittagong Railway Development Project on the condition of the official implementation of the LOB. WB approves the second phase of Railway Reform

¹⁷ The Unified Reform Matrix is available at the program document of WB's Railway Reform Programmatic Development Policy Credit (<http://www.worldbank.org/>).

Programmatic Development Policy Credit if railway reform, including the LOB, is progressed sufficiently.

Table 3-2: Assistance in the Railway Subsector

	Project	Approval Date	Amount
ADB	Railway Sector Investment Program	2007/2/13	USD 430 mil. ¹⁸
JICA	Dhaka-Chittagong Railway Development Project	2007/12/11	JPY 12,916 mil (Approx. USD 123 mil.)
WB	Railway Reform Program Development Policy Credit	2006/10/19	USD 40 mil.

(Source: ADB, JICA, and WB)

Results to present: The MOU resulted in BR's official decision on the introduction of LOB. GoB formally approved the preliminary structure of LOB. Based on functionality, BR was to be streamlined into seven departments. The preliminary structure separates two profit centers, passenger service and freight service, from cost centers. The actual implementation of LOB is now ongoing with the support from ADB advisory work. The joint monitoring mission initially planned in the MOU has not yet been conducted, though information sharing among the three donors remains active.

The MOU itself does not include a timeframe for reform agenda. Each donor individually set a timeframe for reform agenda in loan negotiations. The three donors shared the most key dates of reform except the preparation of the draft Railway Reform Act. This inconsistency has complicated the setting of milestone dates in the implementation phase of the reform

Transaction costs: Transaction costs increase if each donor pursues reform agenda separately. The reform issues and the matrix were mainly defined by interaction between GoB and the leading agency ADB. GoB discussed reform agenda with ADB instead of with the three donors. GoB and the three donors aligned in the formation of reform agenda at the initial stage. Each donor then approved and administrated its loan independently and, thus, can contain transaction costs at reasonable level. The transaction costs for BR have consequently decreased.

¹⁸ USD430 million on the total financing facility with the first 2 loans approved at USD130 million and the remaining loans subject to institutional reforms

Observation: The MOU in the railway subsector allows for and has resulted in lower transaction costs than in the hypothetical case when each donor would pursue reform individually. The MOU enables GoB and the three donors to align in setting the direction in the railway reform and effectively supports the implementation of the reform. The three donors shared the most key dates of reform agenda except the preparation of the draft Railway Reform Act. This has caused confusion between GOB and the donors. Monitoring mechanism is the area which needs to be enhanced.

(3) Project Formation of Padma Bridge-Joint co-finance

Background: The Padma River separates the southwest region of Bangladesh from other parts of the country. The river blocks smooth access to the third populous city Kuhlina and The second largest seaport Mongla, both of which are located in the southwest region. Land transport has to detour through the northwest region before reaching the southwest. Uneasy access to other regions is one of factors to arrest the development of the southwest region. Bridging the river, however, requires the substantial amount of investment, presumably over USD 1 billion.

Taking into account the magnitude of the investment amount necessary for the Padma Bridge, co-financing among three donors (ADB, WB, and Japanese Government) has been indispensable. Project formation for Padma Bridge was commenced with a feasibility study supported by JICA. The study was completed in March 2005. ADB furthers project formation with its funding to the detail design of the bridge. ADB approved USD 17.6 million finance for the Padma Bridge Design Project in December 2007. WB includes the bridge in posed lending list of its country assistance strategy for FY2006-2009. As the detail design is ongoing, the executing agency BBA frequently discusses with the three donors on important issues such as funding and resettlement.

In the disaster damage rehabilitation for Cyclone Cidr, ADB arranged a joint co-financing scheme and assumes administrative works in the implementation phase.¹⁹ ADB's leadership resulted in a reduction of transaction costs for GoB. However, no one donor was able to take a leadership role in a similar way to the case of disaster damage rehabilitation, because the impact of the project is quite wide and significant. If different guidelines, procedures and requirements for each of the three donors were to be requested, such a huge transaction cost may cause poor efficiency. Lessons learned from the experience of Jamuna Bridge, where three donors provided co-financing in the 1980's and 1990s', should

¹⁹ For further details, please see "3.B. (5) Disaster Damage Rehabilitation – Joint Co-finance".

have been used in feed-back for the project implementation design of Padma Bridge, although some points have been already taken into consideration.

In order to secure efficiency, a) responsibility among development partners, b) preparation before construction, c) harmonization of the procedures of the three donors and d) monitoring of implementation are to be considered.

Responsibility among development partners: Various important decisions should be made by GoB in a timely fashion. Thus the status of BBA should be kept in line with the ministry, so that the secretary of BBA can report and discuss directly with members of the cabinet. Similar prompt action in the case of Jamuna Bridge (such as the level of traffic charges) was achieved by direct report and discussion initiated by the secretary of BBA. The status of BBA was changed after Jamuna Bridge was completed. In order to satisfy one of the conditionality of ADB's Padma Bridge Design Project, the status of BBA became the same as the ministry. The donors need to ensure that this status would be maintained for efficient decision making.

The consultant for supervision is to be appointed as "the Engineer" as defined in the FIDIC Guideline, so that decisions for implementation can be made by the Engineer while the contract is agreed and professional judgment respected. This is a lesson learned from the experience of Jamuna Bridge. In the Jamuna Bridge project, the consultant having the same responsibility and duty as "the Engineer" was highly evaluated by the donor in the securing of efficient implementation. Although GoB, as a project owner, could make claims and adjustments after thorough examination, disbursement to the contactors could be executed in advance as the Engineer confirmed progress and payment.

Preparation before construction: Land acquisition and resettlement for the project of the project affected persons are very important in the preparation for smooth implementation. In the project formation of Jamuna Bridge, the World Bank took a leadership role in developing Resettlement Action Plan (RAP). As for Padma Bridge, three donors have their own safeguard policies and close attention has been paid in order to execute the policy precisely. Harmonization between the policies of three donors requires a high transaction cost for GoB. On the other hand, GoB is preparing a "National Resettlement Policy" (NRP) reflecting the experience of the Jamuna Bridge and other projects (Background and discussion regarding NRP are summarized in Box 1 below). When NRP was officially set up, harmonization efforts among the three donors were made with due respect to NRP.

Despite its importance, NRP does not define the role of an NGO, because GoB had also to consider the capacity development of the Deputy Commissioner. Therefore, the donors have seriously considered and recommended the role of NGO, as there can thus be better access to the local community, if it is appropriate to give some responsibility to the NGO.

Cost for land acquisition and resettlement is increasing, and thus the smooth implementation of payment for land acquisition and cash grant support for affected people has become even more critical than for Jamuna Bridge. There are many opinions in support of the view that such a cost should be treated as eligible for finance by donors. Ways to avoid speculation for the cost should be carefully considered before such a change in eligibility is made.

Although various careful arrangements are made, disputes may remain. Arbitration is the procedure to settle disputes defined in the contract, but from the experience of Jamuna Bridge, dispute resolution committees are considered as pragmatic to solve problems in a friendly as well as economical manner. Dispute resolution committees are to be established before construction starts, so that any intervention can be avoided.

Box1: National Resettlement Policy

Reflecting the experience of the Jamuna Bridge Project, the Government of Bangladesh is setting up a “National Resettlement Policy”. This is planned as a substitution to the existing Land Acquisition and Compensation Act 1982. A draft prepared in July 2007 has been examined by the line ministries and experts. After official cabinet approval in December 2008, the policy would be ratified under the new government. Although the guidelines and safeguard policies of the development partners have been taken into consideration, specific modifications may be allowed if a development finance agency requires in a particular feature of the project.

The principal idea of the “National Resettlement Policy” (hereinafter referred to as “National Policy”) is to cover the all kinds of Project Affected Persons (hereinafter referred as “PAP”) using the “market price”. The “market price” is an equivalent concept of maximum allowable replacement value, which was introduced when the Resettlement Action Plan for Jamuna Bridge Project was developed. In addition, vulnerable PAP, even if they have no land ownership, should be supported by some income generation activities, training, better access to micro finance and so on. In order to avoid fraudulent cases, survey of the land by the consultants should include videos, photographs and other visible

evidence. As for the land of “Char”, which is temporally appears and is cultivated in the middle of the river, and which was one of the issues when the Jamuna Bridge Project was implemented, National Policy consider that as far as long-time ownership is confirmed, erosion or loss of “Char” land is to be compensated.

Prevailing market prices of land is a very sensitive issue. The transaction price of land is often reported to be lower than the actual transaction due to tax-saving intentions. “National policy” requests that a record is made of all transactions in a timely and accurate manner. Reflecting the above reality, an incremental factor of up to 400% of the registered price is proposed by the draft. The final draft suggests that a committee should be established to examine the incremental factor. Not only inaccurate registration but also delays in payment cause substantial shortages in replacing the same value of land. According to comments from NGO who have been involved in resettlement for development projects, 3 years are the maximum length in securing the appropriateness of the compensation level.

The actual operation of land acquisition and resettlement is executed by the Deputy Commissioner (hereinafter referred to as “DC”). However, capacity as well as transparency is not expected for all DC. As the DC is legally required to be a land owner, the DC may face conflict of interest regarding land transactions and / or land pricing. Weak relationship access to PAP is another reason. As prompt dealing is important, as mentioned above, the staffing and ways of the business of DC offices is not satisfactory. Therefore an NGO is considered to be an appropriate entity for execution since several development projects have followed the experience of the Jamuna Bridge Project. As civil servants and officials believe that DC or the government is responsible for execution, development partners should take a role to raise points to discuss when NGO should be involved. Although every effort is made to execute transparent procedure, disputes may not cease. On the other hand, it may cause the serious delay of the project if unanimous agreement is required. Therefore, National Policy considers that disputes should be settled separately by the Grievance Committee.

Harmonization of the procedures of the three donors: As for disbursement, harmonization of the procedures of the three donors is the key to achieving efficient implementation. In the case of Jamuna Bridge, when the Engineer approved payment, 1/3 (one third) of such payment was automatically requested equally to each of the three donors. Because of differences of currencies for each loan, as well as the method of exchange, adjustment of the deviation between the request amount and actual receipt, if any, became the burden of the GoB. As for procurement for Jamuna Bridge, the approval of each of the three donors

required a lot of communication. For this reason, Panel of Expert (POE), the milestone meeting and the Co-financers' Monitoring Committee (CMC) worked to resolve the differences of opinion among donors.

The reporting requirements (timing and contents) of the donors are also to be harmonized. If different forms of report are required for the same event, this burden on GoB may cause delays and the efficiency of the project is hampered.

Monitoring of Implementation: For the Padma Bridge Project, POE has already been established. Opinions regarding particular technical issues are sometimes different even among donors, therefore neutral and professional opinion is required for compromise. POE for the Padma Bridge Project consists of foreign as well as Bangladesh experts so that sufficient and persuasive explanation to GoB is also secured. Experience through implementation of the Project might be valuable material for academics.

A milestone meeting was held every three months at the project site during the implementation of Jamuna Bridge in order to discuss every issue in the presence of representatives of the three donors. Expected risks and action to be taken were shared with GoB and each donor at the meeting and face to face discussions deepened mutual understanding. Such regular meetings become an extra burden for donors but this is considered useful for efficiency. For the Jamuna Bridge Project, CMC, at which resident representatives of three donors discussed intensively with GoB was also effective in efficient decision-making for project implementation. For the Padma Bridge Project, CMC has been established. Critical issues such as funding allocation and resettlement action plans are discussed at the venue.

Observation: The formation of Padma Bridge is a typical case of joint co-finance. The construction of Padma Bridge involves various arrangements such as POE, Dispute Resolution Committees, comprehensive RAP/EFAP and so on. Inevitably, this results in higher transaction costs. Compliance with the safeguard policies of the three donors increases transaction costs further. Joint co-financing is, however, a suitable modality in the light of the enormous amount of investment and the undividable scope of the project.

(4) Rural Roads – Area Assignment and Parallel Co-finance

Background: As nearly 80% of the population resides in rural areas, rural development has been considered the most essential component of the country's development strategies.

Over decades, GoB has concentrated on rural development with a greater emphasis on poverty alleviation in its development efforts. In 1996, the Rural Infrastructure Strategy Study was undertaken by the Local Government Engineering Department (LGED) and the Planning Commission in association with WB. The study emphasized the need to improve Growth Centers, GC-connecting feeder roads and institutional capacity for efficient implementation. The study recommended community participation in planning, implementation and monitoring.

In conjunction with the wide recognition of the importance of rural development in Bangladesh, this multifaceted new strategy in rural development drew attention from a number of donors. LGED became one of the busiest executing agencies implementing rural development projects funded by both multilateral and bilateral donors including the four donors.

As donors required LGED to follow different procedures in project administration, such as procurement and reporting, LGED envisaged that, without preemptive measures, administrative work could overburden its staff. LGED proactively assigned donors to several districts all over the country to implement the same kind of projects. This approach was applied to Rural Development Project 21 (RDP-21), which began implementation in the late 90s, and to subsequent programs. In RDP-21, ADB and JICA supported rural roads by parallel co-finance.²⁰ Subsequently, the four donors assisted rural roads in other programs implemented by LGED.

Alignment and Harmonization: In RDP-21, LGED proactively coordinated the donors and took a practical approach in achieving the project. The selection of a particular donor for a particular project generally progresses in the following manner:

- GoB makes requests to all donors interested in the transport sector. Informal discussions take place with prospective donors.
- When the interests of the donors have been expressed, GoB invites the interested donors to a series of meetings, focusing on which donor would like to work on which projects and in which districts.
- The donors usually have continuing interests in particular sectors and areas, based on their experiences of engagement. The government takes these into account when approaching donors. The government rarely approaches a donor which has never worked in a particular sector or area.

²⁰ For the area assignment in the rural road component of RDP-21, please Appendix-14.

In RDP-21, a parallel co-financing scheme was established under LGED's strong initiative. JICA (Northern Rural Infrastructure Development Project) supported rural roads in five districts of the northern region while ADB (Third Rural Infrastructure Development Project) financed the same type of projects in eight districts of the northwest region. Other types of project such as cyclone shelters and capacity development were implemented by IFAD and SIDA.

Area assignment is a common practice among RDP-21 and other programs implemented by LGED. In general, donors have the perception that LGED play a leading role in the discussion on which donor work on which projects and in which districts. Except for unusual cases such as emergency disaster damage recovery, one certain donor is assigned to a certain type of project in a certain district.

Procurement is another example of improved efficiency in implementation under the initiative of GoB. In 2002, a new bidding document and format were introduced by GoB in accordance with the Public Procurement Regulation 2003 (PPR 2003) for public procurements. For rural road projects implemented by LGED, regardless of funding sources, PPR 2003 is applied to the Local Competitive Bidding (LCB), the most common practice for the procurement of construction works, consulting services, equipment, and materials. Exceptions were seen only in the procurement of equipment and materials which were not locally available. Since the contract packages were small and scattered over the country, the prevalent use of LCB can be justified.

Advantages: LGED assigns most of its staff at district and upazila offices. LGED's district offices pursue missions critical in project implementation because the district offices prepare procurement documents and keep project records to satisfy donors' reporting requirements which vary from donor to donor. The rationale behind the importance of the district offices is familiarity with local environment. GoB's current public procurement guidelines have 10 different sets of unit costs region by region. LGED staff at the district offices prepare price estimations for procurement more efficiently than staff at central-level. Furthermore, the participatory nature of rural development projects requires close collaboration between beneficiaries and LGED staff. Thus, knowledge of the local environment plays a crucial role in the successful implementation of projects.

Area assignment enables district offices to streamline project administration as it minimizes

the risk that several donors flock into a certain type of project in a certain districts. Compared to meeting several donors' reporting requirements at the same time without area assignment, the preparation of reporting documents for one donor reduces transaction costs at the district office and minimizes the risk of duplicate disbursement to the same project.²¹

Potential risk: LGED leads coordination among donors and plays a vital role in the selection of projects and areas. LGED assumes greater responsibility in project formation. Political intervention and the lack of reliable information in project areas may result in inappropriate decisions. In order to prioritize projects and areas in accordance with the needs of beneficiaries, LGED needs to carefully reflect local people's needs in project planning and implementation.

Observation: Area assignment allowed GOB to reduce transaction costs in the implementation phases with a bearable increase in transaction costs at the formation phase. This success is attributable to LGED's strong leadership. On the other hand, this A&H scheme is potentially prone to political intervention to LGED. In addition, the lack of reliable information in project areas may lead to inappropriate decisions. Needs assessment is crucial in area assignment.

(5) Disaster Damage Rehabilitation – Joint Co-finance

Background: Floods occurred twice over short periods in 2007. The first flood from the end of July to mid-August inundated approximately 30% of the country, while the second flood from the end of August to mid-September spread over about 42% of the land mass. Cyclone Sidr struck the country during 15-16 November, 2007. The floods and Cyclone Sidr affected 25 million people. According to a joint assessment by ADB, JICA, and WB in September-November 2007, the losses from the two floods was estimated at USD 1 billion. GOB approximates the loss resulted from Cyclone Sidr at USD 2 billion. ADB commenced the preparation of a project to mitigate flood damage in July 2007. In a response to Cyclone Sidr, the scope of the project included both short-term disaster relief and the rehabilitation of damaged infrastructure. The rehabilitation of national and rural roads is also part of the project scope.

Past experience in joint co-financing in rural road projects is also important as background

²¹ According to a donor, duplicate disbursement is one of the risks in small-scale multisite projects. A disburse request from a executing agency had already been financed by another donor.

information. ADB, DfID, GTZ, and KfW have jointly supported LGED in the implementation of the Rural Infrastructure Improvement Project II (RIIP-2) since 2006. The scope of the project consisted mainly of capacity building and the improvement of rural roads. A part of DfID's assistance is on a joint basis to be administrated by ADB while the whole portions of GTZ and KfW were provided on a parallel basis. Differences in disbursement methods turned a delay in project implementation into an issue which affected the scope of project. As DfID could not carry the unused amount of grant over to the next fiscal year, a delay in project implementation contributed to a reduction in the amount of finance available. Joint co-financing between different aid modalities did not easily fit rural road projects.

Alignment and Harmonization: Three donors (ADB, CIDA, and JICA) participated in a joint co-financing scheme, namely the Emergency Disaster Damage Rehabilitation (Sector) Project. Because of its experience in disaster damage rehabilitation in Bangladesh, ADB led in the formation and implementation of project and the donors commissioned the administration of joint co-financing to ADB. As a result of harmonization efforts, LGED dispensed with detailed negotiations with several donors and streamlined disbursement procedures. The transaction costs for GOB, especially for LGED, were substantially reduced. Under this joint co-financing scheme, there are two types of aid modality: a loan of USD 180 million (120 million from ADB and 60 million from JICA) and a grant of USD10 million (CIDA) at the time of appraisal.²²

The assistance is not extendable with a limit of 30 months. Available funds are expected to be disbursed by June 2010. For more prompt disbursement, the initial advances to imprest fund accounts was set at 20% of applicable funds, doubling the 10% in previous assistance for disaster damage. With funds in imprest fund accounts, executing agencies could make payments without a prior concurrence of ADB.

²² Subsequently, Government of Netherlands and OPEC Fund for International development joined the co-financiers. GON provides \$24 million for Water Resources Component and OFID provides \$20 million for the remaining three components.

Table 3-3: Source and Use in Emergency Disaster Damage Rehabilitation Project*

Source	USD	Use	USD
ADB	120 mil.	Quick-Disbursing Component (Import financing)	75.56 mil.
JICA	60 mil.	Rural Infrastructure Component	33.57 mil.
CIDA	10 mil.	Municipal Infrastructure Component	20.89 mil.
GOB	30 mil.	Roads Component	46.43 mil.
		Water Resources Component	31.70 mil.
		Others	11.85 mil.
Total	220mil.	Total	220 mil.

*At the time of appraisal of Emergency Disaster Damage Rehabilitation (Sector) Project

(Source: ADB)

Results to present: There has been no serious delay in disbursement. The nature of the project requires the quick implementation. More allocation to impressed accounts has also worked. Prompt disbursement prevented the shrinkage of project scope, which occurred in the joint co-financing project RIIP-2. Although it might be too early to draw conclusions, disaster damages rehabilitation can be assistance suitable for joint co-financing in the transport sector.

Observation: The difference in disbursement methods blocked the smooth implementation of RIIP-2 funded by joint co-finance and resulted in shrinkage of the project scope. On the other hand, Emergency Disaster Damage Rehabilitation (Sector) Project has not faced a serious obstacle arising from the difference in disbursement methods. The nature of assistance for disaster damage rehabilitation spurred both GOB and donors to faster implementation. The careful arrangements also enabled quick disbursement and prevented disbursement delays.

(6) Evaluation Findings

A&H activities are more active in the evaluation period than before. More diversified modalities of A&H are employed. Conventional A&H modalities aimed at infrastructure development focus mainly on efficient and effective investment in infrastructure. On the other hand, the MOU in railway reform facilitates the improvement of a service provider. The MOU tied reform agenda with the loan provisions of the three donors and created momentum for reform. The MOU helped GoB and the donors to align in the reform agenda and prevented a proliferation of reform agendas. The MOU reduced transaction costs for BR.

As a result of reviewing several A&H modalities; the Evaluators agree that the modality of A&H needs to be selected in accordance with the purpose and nature of A&H. This lesson should be noted when the A&H involves high transaction costs. The review of the cases in the transport sector suggests that joint co-finance, an A&H modality with high transaction costs, is a viable option when the project scope is undividable or the nature of the project hastens the implementation process.

C. Effectiveness/Impact

(1) Approach

It is not feasible to assess in a rigorous manner the development results of the whole investment of the four donors in the transport sector as several uncontrolled factors affects performance indicators. Instead, we have reviewed and synthesized past evaluations with the supplemental analysis of statistical data and seek evaluation findings. We have selected corridor development and rural roads, both of which were strategically emphasized in the Fifth Five Year Plan and PRSP, as the main themes. Out of the five major corridors, two major ones were chosen in consideration of the four donors' past investment and national importance. For rural roads, RDP-21 was chosen because of the availability of evaluation.

(2) Dhaka-Northwest Corridor

Donors' assistance: The Dhaka-Northwest Corridor is one of the five main corridors where the Fifth Five Year Plan urged development efforts to be concentrated. In accordance with this national policy, donors continued to support GoB in investment in this corridor even after the completion of Jamuna Multipurpose Bridge in 1998. For the evaluation period (FY2001-2007), ADB and Japan financed the improvement of access roads between the bridge and Dhaka while WB supported the construction of a new highway (Nalka-Hatikamrul-Bompara Road) in the Northwest region under the Third Road Rehabilitation and Maintenance Project.²³

Indicators: The Evaluators review the outcome of the four donors' support in this corridor by traffic volume and travel time. As the northwest region lags behind, both economically and socially, the impact of corridor development in livelihood and living standards is to be examined.

²³ For further details of the investment of the corridor, please see Appendix-15.

Traffic conditions: Traffic growth in the Dhaka-Northwest corridor can be well-depicted in the traffic volume of the Jamuna Bridge, the only river-crossing point over the Jamuna River. Traffic data for last 10 years since its opening are presented in Table 3-4. Only motorized traffic is allowed to use the bridge. Heavy vehicles such as buses and trucks account for more than 70% of the traffic. One study in 2006 showed that trucks account for 45% while buses 35%. The average growth of traffic per annum has been 13% or more since the opening which is higher than the projected growth rate during the design study.²⁴ This rate is higher than the national average of 8% for road traffic. Annual Average Daily Traffic (AADT) increased from 2,446 vehicles a day in 1999 to 7,176 vehicles in 2008. At present more than 2.6 million vehicles are using the bridge per annum.

Table 3-4: Yearly Traffic Report

Unit: number of vehicles

Year	MC	LV	SB	LB	ST	MT	LT	Total	AADT	Growth
1999	81,293	224,048	82,766	211,941	18,423	297,616	3,715	919,802	2,446	
2000	41,084	210,275	92,245	236,638	24,719	323,864	1,834	930,659	2,550	4.2%
2001	38,718	207,556	113,645	294,372	40,113	411,235	4,431	1,110,070	3,041	19.3%
2002	36,582	207,782	91,034	365,630	56,495	458,211	7,185	1,222,919	3,350	10.2%
2003	30,765	214,854	25,805	463,576	68,355	513,178	10,444	1,326,977	3,636	8.5%
2004	26,804	177,616	24,284	436,961	86,766	550,378	18,331	1,321,140	4,893	34.6%
2005	42,155	289,910	30,720	632,938	134,709	771,500	28,381	1,930,313	5,289	8.1%
2006	48,078	325,570	27,376	683,070	164,791	804,071	27,538	2,080,494	5,700	7.8%
2007	36,380	367,540	25,362	754,136	243,766	905,213	18,412	2,350,809	6,441	13.0%
2008	40,546	408,808	24,434	791,342	333,040	1,004,792	16,194	2,619,156	7,176	11.4%

MC: Motor Cycle, LV: Light Vehicle, SB: Small Bus, Large Bus: LB, ST: Small Truck, MT: Medium Truck, LT: Large Truck
(Source: BBA)

²⁴ STUP Consultants(2006), Final Report on Traffic Survey, Data Collection and Traffic Forecasting (ADB TA 4652-BAN: Preparing the Padma Multipurpose Bridge Project)

Table 3-5: Average Daily Traffic Data (projected and actual)

Year	PREDICTED (Number of Vehicles)			ACTUAL (Number of Vehicles)		
	LV	BUS	TRUCK	LV	BUS	TRUCK
1998				526	552	657
1999	227	384	1253	580	836	903
2000	247	424	1364	602	1059	1130
2001	268	446	1474	563	1194	1404
2002				588	1321	1538
2003				612	1326	1662
2004				658	1710	2428
2005				795	1819	2561
2006				892	1947	2730
2007				1007	2136	3199

(Source: BBA)

The reasons for high traffic growth in this corridor can be explained by several factors such as suppressed demand realized, and national and regional road networks on the northwest having improved connecting bridges to district and upazila towns. A reduction in travel time has induced more and different types of traffic. A rapid increase of bus traffic supports observational evidence of more frequent coach services between the two halves of Bangladesh. Shorter travel time stimulates the traffic of perishable products such as vegetables and fruits toward Dhaka.

Jamuna Bridge reduced travel time substantially by eliminating the ferry crossing. Before the construction of the bridge, ferry services were the only means to cross the Jamuna River. According to a survey conducted by BBA in 1997, the crossing at Sirajganj-Bhuapur, 7km upstream from the bridge, took 8-12 hours, and the Aricha-Nagarbari crossing, 75km downstream, 12-48 hours. By contrast, the Jamuna Bridge has enabled vehicles to cross the river in just 12-18 minutes.

Socio economic conditions: The economic and social impact can be observed by analysis of panel data on both side of the Jamuna River. In comparison with those in the east bank, households in the northwest bank, who were expected to benefit from corridor development, experienced a larger increase in household income after the completion of

the Jamuna Bridge.²⁵ In particular, an increase in agricultural income contributed to this gain. The cropped area for the modern variety of rice increased by 24% in the northwest bank, as opposed to a 4% decline on the east bank. Cropping intensity in the northwest bank increased while that in the northwest bank decreased. Cropping patterns suggests that farming in the northwest bank is more commercialized than before. The northwest of the country is dependent on agriculture and food surplus areas. The bridge has encouraged them to transform subsistence agriculture to semi-commercial agriculture. Farmers are now producing for markets and exporting rice, corn and other cereals, all sorts of vegetables, and fruits to Dhaka and other destinations in the eastern zone.

Table 3-6: Household Income

Household Income (US\$)	Northwest Bank			Eastern Bank		
	97/98 (A)	03/04 (B)	(B)-(A)	97/98 (C)	03/04 (D)	(D)-(C)
Agricultural Income	523	622	99	536	581	54
Non-Agricultural Income	707	790	83	717	699	101
Household Income	1230	1412	182	1253	1280	155
# of HH Members	5.45	5.30	-0.15	5.40	5.31	-0.06
Income per capita	225	266	41	232	241	32

(Source: Impact Assessment of the Jamuna Multipurpose Bridge Project on Poverty Reduction)

Furthermore, the better transport infrastructure has improved credit access in the northwest region. Notable changes after the completion of Jamuna Bridge have been more finance from NGOs and less reliance on other sources of credit, in particular high-cost borrowings from money lenders. Better access to the northwest region may be one of the factors in disseminating the use of NGOs.

Table 3-7: Sources of Credit

Sources of Credit (% of households)	Northwest Bank			Eastern Bank		
	97/98 (A)	03/04 (B)	(B)-(A)	97/98 (C)	03/04 (D)	(D)-(C)
Commercial banks	10.0	8.0	-2.0	8.0	9.0	-1.0
NGOs	4.2	20.2	16.0	6.0	12.0	6.0
Money lenders	15.1	3.2	-11.9	15.7	10.0	-5.7
Friends/relatives	17.2	11.5	-5.7	18.2	12.7	-5.5
All sources	46.5	42.9	-3.6	47.0	43.7	-3.3

(Source: Prof. Abdul Bayes, "Impact Assessment of the Jamuna Multipurpose Bridge Project on Poverty Reduction")

²⁵ Prof. Abdul Bayes (2007), Impact Assessment of the Jamuna Multipurpose Bridge Project on Poverty Reduction

There are some signs that living standards in the project area have improved. Focus group interviews at seven villages in the project area revealed a positive impact after the completion of the Jamuna Bridge. Houses were built with more modern materials such as corrugated iron. A vast majority of women recognized more food intake and better health conditions.²⁶ The Jamuna Bridge presumably resulted in higher income and more availability of goods. These positive changes have contributed to the betterment of social well-being in the project area.

(3) Dhaka-Chittagong Corridor

Donors' assistance: the Dhaka - Chittagong corridor is the economic lifeline of the country and is served by three modes of transport: rail, road and inland waterway. It serves 30% of the total country population, 40% of the GDP and 90% of maritime trade. Because of its importance of economy and capacity constraint, the corridor was one of the five main corridors in the Fifth Five Year Plan and its development remains emphasized in PRSP.

In the last two decades, ADB and Japan have supported GoB in investing in the corridor.²⁷ Most sections of the corridor are 2-lane roads with the exception of a small section of 4-lane road (Kanchpur Bridge to Meghna Bridge, 20 km). Before the evaluation period (FY2001-2007), under ADB-financed Road Improvement Project and Road Overlay and Improvement Project, the corridor was developed to a standard 2-lane road by massive investment including the widening of bridges and the construction of bypasses. With the support of Japan, two major bridges, Meguna and Meguna Gumti Bridges, were completed in 1991 and 1995 respectively. During the evaluation period, ADB continued to finance the improvement of the corridor with the Jamuna Bridge Access Road. In 2006 and 2007, ADB, WB, and Japan agreed to finance railway, though the investment in railway infrastructure has yet to start. With the Chittagong Port Trade Facilitation Project, ADB is financing the improvement of roads within Chittagong port.

Indicators: the Evaluators review the outcome of the three donors' support in this corridor by traffic volume and travel time in road transport. As the area alongside of the corridor is the growth engine of the country, broader socio-economic effects, such as the impact of corridor development, are to be examined. However, the socio economic impact of the Dhaka – Chittagong corridor is not easily identified and measured because factors other

²⁶ Bangladesh Consultants Ltd.(2003), Survey and Assessment of the Jamuna Bridge Impact on Agricultural Production in the Northwest Region

²⁷ For further details of the investment in the corridor, please see Appendix-16

than project intervention affect indicators. For this reason, historical changes in socio-economic data are to be cited as presumed evidence for the incidence of impact.

Traffic conditions: Traffic growth in the Dhaka-Chittagong corridor has been rapid during last 10 years. Of the total AADT, approximately 70% of vehicles carrying passengers are large buses (2,735), medium buses (2,952), and light vehicles including minibuses (8,868).²⁸ To and from the Chittagong Port and Dhaka, 7,536 trucks carry at least 75,000 tons daily. This comes to about 27 million tons of goods and commodities in a year. 6,023 buses carry more than 210,805 passengers per day, i.e. more 76.9 million passengers in a year. The annual passengers in cars and light vehicles are 5.2 million per annum²⁹. As indicated in Table 3-8, Traffic counts at two survey points (Kanchpur in the outskirts of Dhaka and Fauzdarhat at Chittagong) show that motorized traffic has increased at a rapid pace. The construction of the Meguna and Meguna Gumti Bridges has reduced travel time between Dhaka and Chittagong from 8-10 hours to 5-6 hours.³⁰

Table 3-8: Traffic Volume of Dhaka-Chittagong Corridor

Unit: number of vehicles per day

Station Name	Year	Source	Motorized Traffic	Non-motorized Traffic	Grand Total
Dhaka (Kanchpur)	2001	RIP Study	16764	1320	18084
	2004	STP	24209	1077	25286
	2007	RHD	26917	1276	28193
Chittagong (Fauzdarhat)	1998	RIP Study	16345	826	17171
	2004	RHD	23987	680	24667
	2007	RHD	29266	1046	30312

(Source: ADB, WB, and RHD)

Chittagong port is a major source of freight traffic and its traffic generation continues to gain momentum. Total cargo handled in Chittagong port doubled from 10,189 ton in FY95/96 to 18,189 ton in FY06/07. The Dhaka – Chittagong corridor, in particular in road transport, serves the mushrooming growth of cargo. Many bridges are narrow and worn-out as maintenance works can not be carried out properly due to the high pressure of traffic movement. In addition to the narrow width of the road, non-motorized transport vehicles

²⁸ ADB(2006), Final Report on Traffic Survey, Data collection and Traffic Forecasting, PPTA for Padma Multipurpose Bridge Project (ADB TA - 4562)

²⁹ JBIC(2006), SPECIAL ASSISTANCE FOR PROJECT FORMATION (SAPROF) FORDHAKA - CHITTAGONG TRUNK RAILWAY TRANSPORTATION CAPACITY ENHANCEMENT PROJECT

³⁰ Ministry of Foreign Affairs of Japan (2001), Country Assistance Evaluation: Bangladesh (FY2001)

and pedestrians share the same road which causes congestion and traffic accidents. Moreover, the two-lane road along with narrow bridges is not suitable for carrying containers. This has constrained the movement of containers from the port and hampers external trade and the export-import business.

The Dhaka – Chittagong corridor plays a crucial role in trade by connecting the largest port and production facilities in Eastern and Central Bangladesh. Export has grown rapidly in recent years and accounts for 20% of an increase in Gross National Income during FY 2000-FY2007.³¹ In particular, the garment industry is one of the major beneficiaries, with its export via the Chittagong port doubling from 720,457 ton in FY2001 to 1,554,017 ton in FY2006. The garment manufacturing industry accounts for 6% of an increase in GDP during FY2000-2006.

There are signs that the corridor might contribute to the improvement of livelihood. Dhaka and Chittagong Divisions, the region where the corridor runs, experienced a sharper decrease in poverty indicators. Although this result is not purely attributable to the corridor, it is not irrational to assume a plausible link between poverty reduction and the economic stimulus brought by the corridor.

Table 3-9 : Poverty Indicators in Dhaka and Chittagong Divisions

	National			Dhaka Division			Chittagong Division		
	2000	2005	Change	2000	2005	Change	2000	2005	Change
Poverty Headcount (Lower Poverty Line)	34.30%	25.10%	9.20%	34.50%	19.90%	14.60%	34.50%	19.90%	14.60%
Poverty Gap (Lower Poverty Line)	7.50%	4.60%	2.90%	5.70%	2.20%	3.50%	8.10%	3.60%	4.50%
Squared Poverty Gap (Lower Poverty Line)	4.60%	1.30%	3.30%	4.70%	2.10%	2.60%	3.90%	1.70%	2.20%

(Source: Report of the Household Income and Expenditure Survey 2005)

(4) Rural Road - RDP-21

Donors' assistance: Rural Development Project 21 (RDP-21) was implemented from 1998 to 2006 over 13 administrative districts in Dhaka and Rajshahi Divisions. The distinguishing feature of RDP-21 is the simultaneous development of road and market facilities at growth centers. The project was intended to stimulate the demand for market facilities by easier access. ADB and Japan supported a rural road component as well as market facility components. Under the component for rural roads, the project upgraded 165 upazila roads totaling 1,538km, and contributed to all-weather traffic. Improvements included widening

³¹ Bangladesh Bureau of Statistics (2007), Statistical Yearbook of Bangladesh 2007

and / or raising embankments, pavement of roads, and the construction of bridges and culverts. At the formation phase of RDP-21, the project area accommodated more than 30 million inhabitants, approximately 25% of the total population of the country. Most inhabitants depended on agriculture or agro-based activities. Half of this population maintained a livelihood below the poverty line.

Indicators: The Evaluators review traffic volume and vehicle operating costs as the immediate effect of rural road development. Livelihood and living standards including employment and access to social services are regarded as an impact of donors' assistance.

Traffic conditions: A traffic survey in 2003 revealed that all types of vehicle except animal- or human-towed carts increased after the improvement of 19 upazila roads³². A substantial increase in buses and auto-rickshaws implies that inhabitants at project areas have benefited from motorization. The survey also estimated that vehicle operating costs (VOCs) dropped to 38.9% for passenger and 35.7% for goods, using traffic data. Among those for vehicles, the VOCs of light vehicle, bus, motor cycle, and rickshaws made savings at or above 40%

Table 3-10: Traffic Volume of 19 Upazila Roads in RDP-21

Unit: Number of Vehicles

	AADT		Growth
	Before	After	
1. Motor Cycle	26.37	62.55	137.2%
2. Auto-rickshaw	5.26	28.26	437.3%
3. Car/Jeep	2.07	3.3	59.4%
4. Light Vehicle	2.72	14.99	451.1%
5. Bus	1.81	10.68	490.1%
6. Truck	8.18	12.57	53.7%
7. Bicycle	158.32	430.79	172.1%
8. Cart	17.02	1.72	-89.9%
9. Rickshaw	129.86	256.87	97.8%
10. Rickshaw Van	58.83	132.89	125.9%

(Source: LGED)

³² LGED(2004), Annual Post Development Report on Benefit Analysis and Evaluation(2003)-January 2004

Socio economic conditions: Easier access to markets has provided inhabitants nearby with both employment and business opportunities. According to a survey in 2001, income generating activities of beneficiaries have prospered³³. In addition to employment from economic activities in growth centers, the construction and maintenance of rural roads have created direct employment.

Table 3-11: Small Trade of Income Generating Activities

	Very Much		Much		Somewhat		No Change	
	Before	After	Before	After	Before	After	Before	After
Improvement of Small Trades/Income Generating Activities	0.1%	13%	6%	45%	22%	35%	65%	6%

(Source: LGED)

Table 3-12: Employment Opportunities

	Very Easy		Easy		No Change		Not known	
	Before	After	Before	After	Before	After	Before	After
Availability of Employment Opportunities	1%	6%	11%	69%	88%	22%	1%	3%

(Source: LGED)

Furthermore, smooth traffic to growth centers, where schools, healthcare facilities and municipality offices are located, has contributed to the accessibility of social services. With the completion of rural roads, accessibility to education has improved substantially. Similar positive results have been seen in the accessibility to other social services. Although many children are still out of school, accessibility to schools is no longer the prime reason which prevents children from attending. Before intervention, lack of roads was the primary reason for non-schooling of children (78% of respondents) and poverty was the second (14%). After the improvement / construction of rural roads, poverty became the biggest reason (78%).³⁴

³³ LGED(2002), Annual Post Development Report on Benefit Analysis and Evaluation-February 2002

³⁴ LGED(2002), Annual Post Development Report on Benefit Analysis and Evaluation-February 2002

Table 3-13: Access to Social Services

	Very Easy		Easy		Somewhat		No Change	
	Before	After	Before	After	Before	After	Before	After
Access to Educational Institutions	3%	59%	18%	32%	21%	8%	57%	2%
Access to Health /Family Planning /Social Facilities	1%	25%	9%	58%	24%	16%	64%	1%

(Source: LGED)

(5) Traffic Safety

As an unintended and negative impact, road safety is one emerging issue. As mentioned in “2-C: Emerging Issue”, traffic accidents, roughly 80% of which are fatal, have remained at a high level. Traffic accidents involve income earners and, thus, give an economic blow to low- and middle-income households. A high incidence of fatal accidents has been reported in the Dhaka-Chittagong corridors where donors have supported investment. As shown in Appendix-11, several sections of Highway No.1 (Dhaka-Chittagong corridor) recorded larger numbers of fatal accidents among road arteries.

Despite a high fatality rate, road safety has been more neglected than maintenance issues. Both issues were ones which GoB has been in the primary position to tackle following the completion of projects. ADB supported the road audit on roads with high accident rate while DfID supported the establishment of road safety statistics up to 2005. Unlike road maintenance, where the four donors officially convey the necessity of actions to GoB, road safety has so far just been an ad-hoc discussion topic at the LCG transport subgroup. DfID’s advisory works on road safety were shared at the LCG transport subgroup several times. Nevertheless, information sharing at the LCG transport subgroup has not led to joint action among donors. The advisory works have not resulted in decisive actions to prevent traffic accidents.

(6) Evaluation Findings

The four donors’ assistance to corridor development and the improvement of rural roads is meaningful for both economic development and poverty reduction. Although it is difficult to show the extent of contribution, the support for corridor development has induced traffic demand and presumably contributed to the livelihood in project areas. On rural roads, the Evaluators recognize that RDP-21 has improved accessibility to social services among benefices and has stimulated income generating activities.

The Jamuna Bridge has resulted in a wide range of effects. For example, farmers on the northwest bank of the Jamuna River have changed their cropping pattern. Farmers would benefit more if additional support is provided, such as support for agricultural product marketing improvement and the agricultural process industry. Similar wide-ranging effects are expected from the construction of the Padma Bridge. It might be advisable to prepare a regional development program in the southern and southwestern part of Bangladesh in tandem with the implementation of the Padma Bridge.

As pointed out in “2.C. Emerging Issues”, there have been traffic accident increases with the progress of rapid motorization. Ownership, an issue occurring after the completion of projects, is a matter in which GoB should be concerned. Nevertheless, donors could take joint actions to accelerate the efforts of GoB.

As for rural road development, expansion and improvement plans are developed not only from the point of view of transportation, but also to the benefit of most of the people who live in the project area. Accessibility to social services, such as education, health, public markets, union parishad³⁵ and so on, is carefully considered. In addition to the positive effect from the development of rural roads, the maintenance of rural roads itself create income generating activities by the employment of residents who live near to the project areas³⁶. Therefore, rural road development has a great impact on poverty reduction. It is evaluated as one of the effective operations of “Inclusive Development.”

D. Sustainability

(1) Approach

The sustainability of investment financed by donors depends on the maintenance capability of government agencies in charge of maintenance. Multifaceted analysis of maintenance capability requires not only the current status of infrastructure but also various factors such as maintenance programming, budget allocation, and actual execution. In addition, donors' efforts to improve the capabilities of the relevant agencies for maintenance are to be reviewed. In order to employ this comprehensive approach, we have narrowed down the scope of analysis to road maintenance. This narrower scope can be justified by donors' investment and traffic volume. First, trunk roads and rural roads account for approximately 80% of the four donors' disbursement for the evaluation period. Furthermore, the vast majority of passenger and freight traffic depends on road transport.

³⁵ Union parishad is a self-governing organization at village-level. Members are selected through election.

³⁶ This subject is to be reviewed in “3 Evaluation -D. Sustainability”

(2) Trunk Roads

Current conditions of Road Network: The average roughness of roads across the country shows that RHD maintain the condition of National Roads relatively well but that Regional and Zila Roads have continued to deteriorate. The International Roughness Index (IRI) of National Roads is slightly below 5.0 where the unevenness of the pavement surface causes unpleasant vibration. Other classes of roads surpass this threshold. The improvement and construction of roads supported by the four donors are mostly those of National Roads. The figures seem to suggest that the road assets which the four donors assisted are maintained properly. Nevertheless, the deterioration of Regional and Zila Roads handicaps the four donors' assistance as regards the overall outcome. As Regional and Zila Roads are critical linkages between trunk and rural roads, the undesirable conditions of these two classes of roads negatively affects the effect of road network on rural areas.

Table 3-14: Average Roughness (IRI in m/km) of Roads under RHD

Year	National Road	Regional Road	Zila Road	Average
2003	4.1	4.8	5.9	5.6
2004	4.6	6.0	7.0	5.9
2005	4.2	7.0	8.2	6.5

(Source: RHD)

Programming of maintenance activities: Over the years, RHD has developed network management systems to assist in its task of road maintenance. DfID has supported RHD in establishing the systems since the mid-90s. The Institutional Development Component under Road Rehabilitation and Maintenance Project and Transport Sector Management Reform (TSMR), both of which are TA projects funded by DfID, played a vital role in the improvement of maintenance programming. The systems consist of two components: "Road and Bridge Asset Management System (RAMS)" and "Central Management System for RHD (CMS)". The RAMS was designed to prepare comprehensive annual programs while CMS was designed to improve the accountability and efficiency of all RHD field offices. RHD prepares an Annual Maintenance and Rehabilitation Needs Report based on the RAMS maps. The RAMS map presents the recommendations for essential works to be undertaken for annual bridge and road maintenance based on economic priorities. RAMS map is an excellent instrument for selecting roads and bridges for maintenance or

rehabilitation on the basis of priorities and it is easily understood by road engineers as well as non-engineers. RAMS was utilized for the formation of JICA's Eastern Bangladesh Bridge Improvement Project.

The RAMS map is a result of the introduction of the Highway Development and Management system (HDM-4), the core part of the RAMS. RHD staff are able to produce the RAMS map. However, there has been no major update of the RAMS database since 2004. Obsolete data for key variables such as road conditions and traffic jeopardize the credibility of output from the RAMS. CMS maintains various data such as tender information. Much data is publicly available but access to data needs to be via the Internet CMS serves internally due to the lack of internet access among beneficiaries, especially in rural area, and does not enable external monitoring of maintenance works.

Maintenance budget: The following tables represent the RHD maintenance budget, including salaries (Table 3-15) and expenditure on periodic maintenance for 2001-2007 (Table 3-16). The tables show increases both in the budget allocation for maintenance and the contracted amount of periodic maintenance.

Table 3-15: RHD Maintenance Budget (2001-2007)

Year	Amount Allocated * (Million Tk.)
2000/01	3120.0
2001/02	3310.0
2002/03	3170.0
2003/04	3550.0
2004/05	4523.0
2005/06	4369.9
2006/07	7655.0

*Budget allocation from GoB

(Source: RHD Maintenance Wing)

The draft Road Master Plan estimated that RHD's budget requirement for road maintenance is Tk.244,834 million (periodic: Tk. 230,910 million, routine: Tk. 13,924 million) for the next 20 years. The maintenance requirement for the first year is estimated at Tk. 5,593 million (periodic: Tk. 5,000 million, routine: Tk.593 million) and this will increase as the road network expands. In recent years, the maintenance budget has increased due to a larger budget allocation from GoB. The budget allocation from GoB was

Tk.4,523 million, Tk.4,370 million, and Tk.7,655 million respectively in FY2004/05, FY2005/06 and FY2006/07. The government has directed Tk.1.5 billion from revenue budget for periodic maintenance projects (PMP) and another Tk.3.0 billion for rehabilitation from donors' assistance in FY2005/06. For the evaluation period, ADB supported road maintenance. Road maintenance components have been included in ADB funded projects, namely Road Maintenance and Improvement Project, Road Network Improvement and Maintenance Project and Road Network Improvement and Maintenance Project II Since FY2004/05, DfID's budget support and Japan Debt Cancellation Fund (JDCF) has provided additional funding to PMP. Despite its recent increase, PMP continues to be allocated an insufficient allocation below the estimated amount in the draft Road Master Plan.

Table 3-16: Budgets, Contracts and Expenditure, Periodic Maintenance Project (2001-2007)

Year	budget (GOB)	Budget (JDCF+DFID)	Total Budget	New Contract	Carry Over	total works contracted	expenditure	carry over of liability to next year
1	2	3	4	5	6	7	8	9
2000-01	459.9	0.0	459.9	1003.0	0	1003.0	459.9	543.1
2001-02	790.7	0.0	790.7	1100.3	543.1	1643.4	790.7	852.7
2002-03	1000.0	0.0	1000.0	1117.5	852.7	1970.1	1000.0	970.1
2003-04	2000.0	0.0	2000.0	3629.9	970.1	4600.0	2000.0	2600.0
2004-05	0.0	3392.1	3392.1	1793.9	2656.1	4450.0	3392.1	1057.9
2005-06	1563.0	2960.0	4523.0	4900.3	1173.7	6074.0	3450.3	2623.7
2006-07	1000.0	1050.0	2050.0	(1825.6)	2911.8	2911.8	792.6	-
Totals			14,215.7	1354.49			11,885.6	

note 1: The carry over figures are shown as original contract values in column 8 but include contract variations in the following year in column 5;

note 2: The figure shown for new contracts 2006-07 has not yet been committed as contracts are unsigned. It is not included in the total.

(Source: RHD, PMP Status Report prepared by TSMR)

Despite the recent increases in the maintenance budget, the implementation of maintenance works is still hectic. The planning and procurement of PMP is not conducted in a timely manner. In FY2007-08, for example, the invitation to tenders for the first tranche of PMP was published on October 31, 2008, a three month delay from the original schedule. RHD consecutively failed to spend allocations on time and was responsible for the accumulation of a considerable carryover. As a result, the increase in the expenditure for road maintenance does not match that in the budget allocation.

Road maintenance, particularly the establishment of the road maintenance fund, has been

a major topic at the LCG transport subgroup for last several years. The four donors took joint action beyond the framework of the LCG subgroup. The four donors had common policy dialogue with GoB and submitted joint debriefing notes to the caretaker government. The maintenance budget and the restructuring of RHD was one of the issues in this joint policy dialogue.

Contract management: In addition to slow planning and implementation, the quality of maintenance works is another issue faced by RHD. DfID supported RHD in implementing an external audit which covered both financial and technical aspects. In June 2007, external auditors concluded an audit of maintenance contracts. The audit revealed deficiencies including irregular prequalification, the lack of material testing and substandard construction works and, consequently, recommended the employment of independent supervision consultants.³⁷ However, this recommendation has not been endorsed. DfID formally suspended support for the maintenance budget because of continued fiduciary risk to the organization.

The government audit reviews relevant documents on maintenance but it does not inspect the quality of maintenance works. Implementation, Monitoring, and Evaluation Division do not examine the condition of roads unless financed by ADP. Maintenance contract data is stored in RHD's database and accessible via the Internet. Given the limited internet access especially in rural areas, it is not easy for road users to have information on maintenance activities in their neighborhoods. The chances for external reviews on maintenance works are limited. With more disclosure on maintenance contracts to stakeholders who directly benefit from better quality of roads, RHD ought to be more accountable for maintenance activities.

(3) Rural Roads

Current conditions: LGED is responsible for sub-district road (feeder road B: 17,889 km), union roads (8,513km) and village roads. In this responsibility, LGED is headed by the Chief Engineer who is supported by 4 Additional Chief Engineers, 7 Superintending Engineers, 17 Executive Engineers and 18 Assistant Engineers at the headquarter, 10 Superintending Engineers at the circles (10 regions), 64 Executive Engineers and 152 Assistant Engineers at the district level and 481 Upazila Engineers at the Upazila/Thana level (2008 March).

³⁷ TSMR, Monitoring RHD Periodic Maintenance Status Report- December 2007

LGED categorizes maintenance as Routine Maintenance which is divided into 4 (off-pavement maintenance, road-side tree plantation and care-taking, on-pavement maintenance and road safety and traffic sign maintenance), Periodic Maintenance (surface dressing, spot repair in combination with surface re-sealing and replacement of damaged layers including refurbishment of sub-base and base course) and Emergency Maintenance. Latest performance of maintenance activities categorized mentioned above is shown in Table 3-17. The total amount is considered significant if it is compared to the budget amount Tk. 20,000 Lakh³⁸ for FY 2003/04 and Tk. 34,000 Lakh for FY 2004/05.

Table 3-17: Maintenance Activities by LGED (2007/08)

unit: km/m, Lakh Taka

		No. of Contract	Total Length (km/m)	Total Amount (Lakh Taka)
Routine Maintenance	Off-Pavement	23,706	23,706	5,013.00
	Tree Plantation	-	-	-
	On-Pavement	64	-	375.00
	Safety	-	-	-
Periodic Maintenance	Surface Dressing	957	2,223.03	7,784.91
	Spot Repair	1,838	3,130.36	21,222.94
	Replacement	944	2,299.06	22,842.49
	Structure Maintenance (m)	2,588	29,344.8m	12,428.29
Emergency Maintenance	Road	599	685	861.0
	Structure(m)	208	550m	403.0

(Source: LGED)

Programming of maintenance activities: The executive engineer, who is stationed at the district, is responsible for the collection of data maintenance. Data is compiled at the planning section and the Road Asset Management System (RAMS) is set up. RAMS has all information on roads (length, width, paved / unpaved, construction year and so on), data relating to the condition of roads (traffic volume, maintenance records, road surface conditions and road roughness) and social data (schools, clinics / hospitals, government office, local market and so on). Integration to GIS (Geographic Information System) means that all information mentioned above can be shown on the map. This integration system was developed with the technical assistance of Japan initially and LGED has upgraded the system. Technical assistance included training of engineers at Rural Development

³⁸ 1 Lakh=100,000

Engineering Center (RDEC), which was financed by a Japanese ODA loan.

When maintenance plan analysis takes place and the priority and level of maintenance work is decided, the necessity of maintenance investment can easily be examined through traffic volume, roughness and surface condition. In addition, accessibility to public services such as schools and clinics / hospitals is considered. As the institutional target of LGED, the maximization of beneficiaries of the project should be well designed. This is along with the idea of inclusive development. In other words, roads are evaluated as transportation service providers and not just as hard infrastructure. As an unexpected effect, this system may be utilized for general election commission in that it recognizes the accessibility and convenience for local people in voting. RAMS contains data on demography and road networks and would enable the commission to set ballot stations at accessible locations.

Accuracy and reliability of data is secured by regular data updating by the sub-district engineers. Incentives and penalties relating to timing and accuracy of data have been introduced. Fraudulent data is penalized and mistakes in data input are automatically checked by the system itself. Data sharing with planning sections and sub districts also works as a double check.

Maintenance budget: Some rural road maintenance activities are financed by the donors, but the main source of funding is GoB Revenue Budget. Although the budget allocated in the fiscal year 2000/01 was Taka 1.18 billion, the budget was increased up to 3.7 billion Taka in 2004/05. According to LGED, 95 percent of the maintenance budget is spent within the fiscal year. Such high performance is achieved by the schedule as follows;

July-September : field surveys and data collection
October-December : analysis, prioritization and plan in each upazila
January-June (Dry season) : implementation of maintenance works

Contract management: Routine maintenance work for unpaved roads (1km for each contract) is carried out by LCS (Labor Contract Society) and maintenance work for paved roads is carried out by a contractor selected through tendering. Although the regular contract period is one year, LGED started performance based routine maintenance contracts for 3 years, separately for pavement portions and earthen shoulders and slopes maintenance portion. This means that as far as the contractor shows the satisfactory performance, as defined in the contract, a sustainable contract is secured, However, this system has been introduced on an experimental basis in 10 upazilas only.

LCS is organized by a sociologist, assigned by LGED at district level, with the help of local administration, particularly the Union Parishad. 30 percent of payment to LCS is retained as a saving for the participants of LCS and is used for capacity development such as support for income generating activities.

Although maintenance contracts for paved roads are few and only local contractors can participate in tender, the quality of work is ensured by comparison of test results at central and district level laboratories. As such tests have made mandatory, test results must be included with the contractor's bills, otherwise the bill will not be paid.

(4) Evaluation Findings

RHD sustains the usefulness of National Roads, the road class in which the four donors assist RHD investment. LGED properly maintains rural roads by the effective use of RAMS. On the other hand, Regional and Zila Roads are the weakest link in the Bangladesh road network because of their deteriorating condition. The weakness of the feeder road network might latently block the full incidence of benefit from National Roads and rural roads. This defect potentially hinders access to economic opportunities in rural area. The reasons behind this defect include lagged and unreliable data in the RAMS database at RHD, inadequate budget allocation to PMP, and delayed and irregular appointments of maintenance contractors.

The weak management of maintenance contracts accelerates the deterioration of the road network. This also deters donor assistance, including support for maintenance funding and capacity development. Given that donors' assistance often works as a catalyst for reform, the delay in assistance could result in the further deterioration of road network.

The use of RAMS shows a stark difference between RHD and LGED, though the nature of the road assets which the agencies maintain requires different levels of technological capability. As RHD collect road condition data on an irregular basis, outdated data often generates unreliable outputs. This is one of the reasons that RHD pays inadequate attention to RAMS maps. Slow maintenance programming causes a delay in the entire maintenance schedule and results in unused budget. On the other hand, LGED conducts a periodic collection of road condition data and completes its programming process before the end of fiscal year. LGED uses most of the allocated budget for road maintenance. The benefit of RAM encourages the prevalent use of RAMS and has accelerated the

institutionalization of RAMS at LGED.

Irregularities in maintenance contracts are rampant in RHD. This finding coincides to some extent with the result of the survey of project managers.³⁹ In the transport sector, the proportion of project directors who have witnessed irregularities in their projects is among the highest. The enhancement of contract management in a more accountable manner is a crucial task for the sustainability of road assets.

³⁹ ADB conducted the survey for Joint Evaluation Product.

4. LESSONS LEARNED AND RECOMMENDATION

Lesson Learned #1: In order to cope with the changes in the planning of national policy, it is necessary to bridge the gap between PRSP and projects / programs supported by donors. Master plans should tie investment to development goals in PRSP and indicate investment priority and time frame.

Recommendation: Donors should continue to support relevant agencies to establish master plans in the transport sector.

- PRSP is more outcome-oriented while the 5th Five Year Plan specified outputs.
- After the introduction of PRSP, the link between national policy and projects / programs has become less direct.
- Many efforts to establish master plans have been made but GoB approved few master plans.

Lesson Learned #2: Rapid motorization has created gaps in donors' assistance such as in the area of urban transport in Dhaka and traffic safety. Although GoB is in a primary position to tackle these issues, donors could have made joint efforts to accelerate GOB's actions.

Recommendation: Policy framework and division of labor needs to be established for these new issues which are taken care of by neither GoB nor donor.

- The number of fatalities by road accident has remained at a high level.
- Traffic congestion and air pollution are very severe in Dhaka. A few efforts to alleviate these issues have been made.
- Before tackling these issues, GoB and donors require a policy framework.

Lesson Learned #3: A&H modality needs to be selected in accordance with purpose. There is no single coordination modality to fit all situations.

- Joint co-finance requires high transaction costs but is effective for large and undividable infrastructure projects.
- MOU and parallel co-finance can define division of labor and share a reform agenda with transaction costs increased moderately or reduced.

Lesson Learned #4: Transaction costs of joint co-financing are high. Furthermore, the use of different disbursement methods risks delay in the implementation of projects. The use of parallel co-finance should be adopted except in cases when joint co-financing is the only viable option.

- Defining the scope of the project required extensive coordination in the case of Jamuna Bridge.
- The lack of coordination consumes unnecessary resources to set LAP/RAP for Padma Bridge.
- For RIIP-2, differences in the disbursement method reduced the amount of available funds.

Lesson Learned #5: MOU enables donors to share a reform agenda and drives sector reform by tying the reform agenda and loan administration. Transaction costs can be reduced or remain at a bearable level. In order to establish an MOU in an efficient manner, it is desirable that a certain donor assumes a leadership role

Recommendation: It is desirable that the progress of railway reform is assessed in periodic joint meetings between GoB and donors.

- There was possibility that three donors may pursue different reform agendas. Sharing reform agenda reduced transaction costs.
- MoC decided to implement an LOB structure at BR. MOU set this decision as a prior action to assistance by the donors.
- The reform agenda for the railway subsector lacks a monitoring mechanism. This may weaken the momentum of railway reform.

Lesson Learned #6: Ex-post review of maintenance contracts contributes to the quality of work and fair payment. External audit on RHD's maintenance contracts is a remarkable form of progress.

Recommendation: In order to ensure accountability and create an environment for ex-post review, donors should support RHD so that the stakeholders could have easier access to the information on maintenance contracts and monitor maintenance works.

- External audits identified irregular procedures in maintenance contracts.
- Government audits could not identify these irregularities because they do not conduct physical inspection of maintenance works financed by recurrent budget.
- The residents along national roads have little access to maintenance database which are reachable only via internet.
- Easier access to the information on maintenance contracts can expose RHD to the necessity of accountability.

Appendix-1: List of Organizations/Persons Interviewed

Government of Bangladesh:

Bangladesh Bridge Authority

Bangladesh Railway

Local Government Engineering Department

Planning Commission - Transport Sector Coordination Wing

Implementation, Monitoring, and Evaluation Department

Road and Highway Department

Donors:

Asian Development Bank

Department for International Development

Japan Bank for International Cooperation

Japan International Cooperation Agency

Ministry of Foreign Affairs of Japan (Embassy of Japan in Bangladesh)

World Bank

Others:

Abdul Monem Limited (contractor of development projects in the transport sector)

Prof. Jamilur R.Choudhury (member of the Panel of Experts for Jamuna Bridge)

Mr.Abdul Muyeed Chowdhury (former Executive Director of JMBA)

Christian Commission for Development in Bangladesh

WSP International (consulting firm for Transport Sector Management Reform Project)

Appendix-2: The Questionnaire for Bangladesh Government Agencies (September 2008)

The Evaluation of Four Donors' Assistance in the Transport Sector: Questionnaire for the Government of Bangladesh

Background:

In 2006, the Asian Development Bank (ADB), the World Bank (WB), the United Kingdom's Department for International Development (DfID), and Japan, which consists of the Government of Japan - the Ministry of Foreign Affairs (MOFA), the Japan Agency for International Cooperation (JICA), and the Japan Bank for International Cooperation (JBIC), established the Joint Country Assistance Strategy Framework (JCASF) for their assistance in Bangladesh. As the JCASF defined a common approach to the key development issues, four donors' country assistance strategies aligned with the JCASF. When WB commenced the Country Assistance Evaluation, which reviews WB's supports to Bangladesh from 2001 to 2007, the four donors (ADB/WB/DfID/Japan, hereafter "G4") agreed to carry out a joint evaluation of their assistance with special emphasis on the alignment and harmonization (A&H) in Bangladesh. On behalf of Japan, JBIC contributes to this joint effort by conducting an evaluation on four donors' assistance in the transport sector with A&H focused.

Evaluators

JBIC commissions Mr. Takeo Matsuzawa at PADECO Co., Ltd. and Mr. Nobuyuki Kobayashi at OPMAC Corporation to conduct this evaluation. Mr. Rafiqul Islam at BCL Associates supports them during this evaluation.

Objective:

The main objective of this questionnaire is to obtain information on the formation and implementation process of projects/programs in the transport sector, especially in respect of A&H, and the results of G4's assistance as a whole.

Evaluation Criteria

For the evaluation on G4's assistance in the transport sector, the DAC Evaluation Criteria (i.e. (1) Relevance, (2) Efficiency, (3) Effectiveness, (4) Impact, and (5) Sustainability) are employed. The Criteria will be applied to this evaluation as follows:

Evaluation Criteria	
(1) RELEVANCE	This criterion will focus mainly on the consistency between the Bangladesh development policies/sector plans and four donor's assistance strategies.
(2) EFFICIENCY	This criterion will analyze how much A&H activities (i.e. LCG meeting, joint projects, division of labor, conduct of advisory and analytical activities, use of country system, etc.) contributed to the productivity of formation and implementation process of four donors' assistance.
(3) EFFECTIVENESS	This criterion will examine how much four donors' assistance jointly supported Bangladesh in coping with issues in the transport sectors.
(4) IMPACT	This criterion will describe the extent to four donors' assistance jointly contributed to economic and social development in Bangladesh. This criterion will verify intended and unintended, direct and indirect, positive and negative changes as a result of the assistance.
(5) SUSTAINABILITY	This criterion will illustrate the status of relevant governments' capabilities to maintain the effectiveness of transport infrastructure. In addition, this criterion will examine the extent to which four donors' assistance enhances the maintenance capacity of the government agencies.

Information of Respondent:

Name:	Designation:	Since (Month/Year)
Tel:	Fax:	Email:

Questions:

It would be highly appreciated if you could please fill out this questionnaire form by the time of interview, which is expected to be held in the forth week of September 2008. You can skip a question on which you do not have sufficient information:

Relevance

a. Country Assistance Strategies (For MOC):

1. What were major changes of transport sector policy between 2001 and 2008? Please refer to relevant sections of policy documents (i.e. PRSP, Road Master Plan, etc.). Was there any policy change in the development of five major corridors?

2. Was the development of two corridors (Dhaka- Chittagong and Dhaka-Northwest) placed emphasis in Bangladesh national policy/sector policy? Was the development of two corridors placed emphasis in donors' country assistance strategies?

3. Did each donor take suitable components in the corridor development? Was there more appropriate allocation of components among donors?

4. Was there any internal mechanism to check the consistency between G4-funded projects/programs and Bangladesh national policy/ transport sector policy?

5. What percentage of expenses in the transport sector comes from four donors?

Efficiency

b. Alignment and Harmonization - General (All ministry and agencies)

6. Was there any process which G4 should have coordinated in the formation, implementation, and monitoring and evaluation of projects/programs? If yes, what was a process?

c. Rural Road (For LGED):

7. LGED assigned a certain area to a donor (For Example, JBIC-funded the Greater Falidpur Rural Infrastructure Development Project). Did assigning areas to donors shorten the time for the formation and/or implementation of rural road projects? If yes, how did this approach contribute to efficiency in the formation and/or implementation?

8. What did LGED learn from the formation and/or implementation of projects in an earlier stage? How were these lessons used in projects in a later stage?

9. What were other benefits of assigning areas to donors? How was efficiency in the formation and/or implementation improved?

d. Railway (For BR):

10. Did ADB, WB, and JBIC timely pledge railway projects? Was there any project which was not in tandem with other projects in terms of timing?

11. ADB, WB, and JBIC signed the Minutes of Understanding (MOU) on the reform of the railway sector. Did the MOU initiate reform? Did the MOU shorten the time for the formation and/or implementation of railway projects? Compared with implementing the Project separately without the MOU, was there any advantage?

12. Was there any mechanism to reduce time and/or workload in the formation and/or implementation of the railway projects? Did the Project Coordination Committee reduce time and/or workload in the implementation of the railway projects?

e. Jamuna Multipurpose Bridge (For BBA)

13. Did co-financers learn monitoring methods from other donors' practices? Did different monitoring practices burden your organization with additional tasks?

14. Were there issues (such as maintenance and approach roads) that co-financers needed to work together after the completion of Jamuna Bridge? What kind of action has been taken?

f. Other Alignment and Harmonization (All ministry and agencies)

15. Did G4-funded advisory and analytical activities help you understand issues in the project implementation in the transport sector and take appropriate actions? Did these actions reduce time and/or workload?

Effectiveness/Impact

g. Corridor Development (For MOC, BBA, BR, and RHD)

16. What were contributing factors to volume increase in two corridors? Were G4-funded projects/programs relevant to the contributing factors?

17. What were contributing factors to reduction of traveling time in two corridors? Were G4-funded projects/programs relevant to the contributing factors?

h. Rural Road (For LGED)

18. What kind of development indicator has improved after the construction of rural roads? Was there any study on the impact of rural roads?

19. What was the synergy effect of connecting rural roads and trunk roads? Was there any study on the synergy effect between rural roads and trunk roads?

i. Jamuna Multipurpose Bridge (For BBA)

20. Jamnura Bridge required large-scale resettlement and potentially had negative effect on environment. Was there consultation with negatively affected communities by Jamnura Bridge? Is there consultation with affected communities by Padma Bridge? What were lessons learned from Jamuna Bridges?

j. Road Safety (For RHD)

21. What kind of advisory and analytical activities did G4 conduct in road safety between 2001 and 2007? What were the results of these activities?

22. Did G4-funded advisory and analytical activities help you understand road safety issue and take appropriate actions?

Sustainability

k. Road Maintenance (For RHD)

23. What kind of advisory and analytical activities did G4 conduct in road maintenance between 2001 and 2007? What were the results of these advisory and analytical activities? Did these activities contribute to the improvement of maintenance programming?

24. Did G4-funded advisory and analytical activities help you understand road maintenance issue and take appropriate actions?

25. How did G4-funded advisory and analytical activities improve road maintenance? Was the procurement of maintenance works transparent? Did the implementation of maintenance works require less time? Please give us examples(s).

l. Jamuna Multipurpose Bridge (For BBA)

26. How much was toll revenue in each year after 2001? How much was maintenance expenses in each year after 2001? Did maintenance require funding from GoB's general budget? Is there any room to raise toll price without reducing traffic volume?

m. Rural Road (For LGED)

27. Was there any different arrangement of road maintenance between LGED-funded roads and donor-funded roads? More budget? Did different type of group maintain roads?

28. Labor Contracting Societies (LCS) and NGOs played a vital role in road maintenance of rural roads. What were advantages and disadvantages of the use of LCSs and NGOs in the maintenance rural road? Did LCSs/NGOs provide services which could not be provided by private companies?

Thank you for your cooperation.

Appendix-3: The Questionnaire for the Four Donors (September 2008)

The Evaluation of Four Donors' Assistance in the Transport Sector: Questionnaire for Donors

Background:

In 2006, the Asian Development Bank (ADB), the World Bank (WB), the United Kingdom's Department for International Development (DfID), and Japan, which consists of the Government of Japan - the Ministry of Foreign Affairs (MOFA), the Japan Agency for International Cooperation (JICA), and the Japan Bank for International Cooperation (JBIC), established the Joint Country Assistance Strategy Framework (JCASF) for their assistance in Bangladesh. As the JCASF defined a common approach to the key development issues, four donors' country assistance strategies aligned with the JCASF. When WB commenced the Country Assistance Evaluation, which reviews WB's supports to Bangladesh from 2001 to 2007, the four donors (ADB/WB/DfID/Japan, hereafter "G4") agreed to carry out a joint evaluation of their assistance with special emphasis on the alignment and harmonization (A&H) in Bangladesh. On behalf of Japan, JBIC contributes to this joint effort by conducting an evaluation on four donors' assistance in the transport sector with A&H focused.

Evaluators

JBIC commissions Mr. Takeo Matsuzawa at PADECO Co., Ltd. and Mr. Nobuyuki Kobayashi at OPMAC Corporation to conduct this evaluation. Mr. Rafiqul Islam at BCL Associates supports them during this evaluation.

Objective:

The main objective of this questionnaire is to obtain information on the formation and implementation process of projects/programs in the transport sector, especially in respect of A&H, and the results of G4's assistance as a whole.

Evaluation Criteria

For the evaluation on G4's assistance in the transport sector, the DAC Evaluation Criteria (i.e. (1) Relevance, (2) Efficiency, (3) Effectiveness, (4) Impact, and (5) Sustainability) are employed. The Criteria will be applied to this evaluation as follows:

Evaluation Criteria	
(1) RELEVANCE	This criterion will focus mainly on the consistency between the Bangladesh development policies/sector plans and four donor's assistance strategies.
(2) EFFICIENCY	This criterion will analyze how much A&H activities (i.e. LCG meeting, joint projects, division of labor, conduct of advisory and analytical activities, use of country system, etc.) contributed to the productivity of formation and implementation process of four donors' assistance.
(3) EFFECTIVENESS	This criterion will examine how much four donors' assistance jointly supported Bangladesh in coping with issues in the transport sectors.
(4) IMPACT	This criterion will describe the extent to four donors' assistance jointly contributed to economic and social development in Bangladesh. This criterion will verify intended and unintended, direct and indirect, positive and negative changes as a result of the assistance.
(5) SUSTAINABILITY	This criterion will illustrate the status of relevant governments' capabilities to maintain the effectiveness of transport infrastructure. In addition, this criterion will examine the extent to which four donors' assistance enhances the maintenance capacity of the government agencies.

Information of Respondent:

Name:	Designation:	Since (Month/Year)
Tel:	Fax:	Email:

Questions:

It would be highly appreciated if you could please fill out this questionnaire form by the time of interview, which is expected to be held in the fourth week of September 2008. You can skip a question on which you do not have sufficient information:

Relevance

a. Country Assistance Strategies (For ADB, WB, and DfID):

1. Was the development of two corridors (Dhaka- Chittagong and Dhaka-Northwest) placed emphasis in Bangladesh national policy/sector policy? Was the development of two corridors placed emphasis in donors' country assistance strategies?

2. Did each donor take suitable components in the corridor development? Was there more appropriate allocation of components among donors?

3. Was there any internal mechanism to check the consistency between projects/programs and Bangladesh national policy/ transport sector policy?

4. How did the GOB participate in the programming of assistance to the transport sector? Was there policy dialogue between the GOB and your organization? Was there any improvement in the programming?

Efficiency

b. Alignment and Harmonization – General (For all donors):

5. What are advantages and disadvantages of each modality (MOU, co-financing, and area assignment, LCG subgroup, etc.)?

6. How many joint missions among ADB, WB, DfID, and Japan in the transport sectors were held from 2001 to 2007? Did the number increase after the establishment of the Joint Country Assistance Framework in 2006?

7. What were actual cases of A&H (co-financing, MOU, area assignment, etc.)? What are advantage and disadvantages?

c. Rural Road (For all donors):

8. LGED assigned a certain area to a donor (For Example, JBIC-funded the Greater Falidpur Rural Infrastructure Development Project). Did assigning areas to donors shorten the time for the formation and/or implementation of rural road projects? If yes, how did this approach contribute to efficiency in the formation and/or implementation?

9. What did LGED learn from the formation and/or implementation of projects in an earlier stage? How were these lessons used in projects in a later stage?

10. What were other benefits of assigning areas to donors? How efficiency in the formation and/or implementation was improved?

d. Railway (For ADB, WB, and JBIC):

11. Did ADB, WB, and JBIC timely pledge railway projects? Was there any project which was not in tandem with other projects in terms of timing? Do you think that the earlier involvement of other donors would reduce the formation and/or implementation of the railway projects?

12. ADB, WB, and JBIC signed the Minutes of Understanding (MOU) on the reform of the railway sector. Did the MOU initiate reform? Did the MOU shorten the time for the formation and/or implementation of the railway projects? Compared with implementing the projects separately without the MOU, was there any advantage?

13. Was there any mechanism to reduce time and/or workload in the formation and/or implementation of the railway projects? Did the Project Coordination Committee reduce time and/or workload in the implementation of the railway projects?

e. Jamuna Multipurpose Bridge (For ADB, WB, and JBIC)

14. Did co-financing negatively affect the efficiency of the formation and/or implementation of Jamuna Bridge? If yes, were there any actions to reduce time and/or workload? What were lessons applied to Padma Bridge?

15. Did co-financers learn monitoring methods from other donors' practices?

16. Were there issues (such as maintenance and approach roads) that co-financers needed to work together after the completion of Jamuna Bridge? What kind of action has been taken?

f. Other Alignment and Harmonization (For ADB, WB, and JBIC)

17. Did G4's advisory and analytical activities help you understand issues in the project implementation in the transport sector and take appropriate actions? Did these actions reduce time and/or workload?

18. Did LCG transport subgroup help you obtain reduce time and efforts for formation and/or implementation of projects? If yes, please give us example(s).

Effectiveness/Impact

g. Corridor Development (For all donors)

19. What were contributing factors to volume increase in two corridors? Were G4's projects/programs relevant to the contributing factors?

20. What were contributing factors to reduction of traveling time in two corridors? Were G4's projects/programs relevant to the contributing factors?

h. Rural Road (For all donors)

21. What kind of development indicator has improved after the construction of rural roads? Was there any study on the impact of rural roads?

22. What was the synergy effect of connecting rural roads and trunk roads? Was there any study on the synergy effect between rural road and trunk roads?

i. Jamuna Multipurpose Bridge (For ADB, WB, and JBIC)

23. Jamnura Bridge required large-scale resettlement and potentially had negative effect on environment. Was there consultation with negatively affected communities by Jamnura Bridge? Is there consultation with negatively affected communities by Padma Bridge? What were lessons learned from Jamuna Bridges?

j. Road Safety (For all donors)

24. What kind of advisory and analytical activities did G4 conduct in road safety between 2001 and 2007? What were the results of these activities?

25. Did G4's advisory and analytical activities help you understand road safety issue and take appropriate actions?

Sustainability

k. Road Maintenance (For all donors)

26. What kind of advisory and analytical activities did G4 conduct in road maintenance between 2001 and 2007? What were the results of advisory and analytical activities? Did these activities contribute to the improvement of maintenance programming?

27. Did G4's advisory and analytical activities help you understand road maintenance issue and take appropriate actions?

28. How did advisory and analytical activities improve road maintenance? Was the procurement of maintenance works transparent? Did the implementation of maintenance works require less time? Please give us examples(s).

l. Jamuna Multipurpose Bridge (For ADB, WB, and JBIC)

29. Do you think the price of toll is high enough? Is there any room to raise toll price without reducing traffic volume?

m. Rural Road (For all donors)

30. Labor Contracting Societies (LCS) and NGOs played a vital role in road maintenance of rural roads. What were advantages and disadvantages of the use of LCSs and NGOs in the maintenance rural road? Did LCSs/NGOs provide services which could not be provided by private companies?

Thank you for your cooperation.

Appendix-4: The Questionnaire for Bangladesh Government Agencies and the Four Donors
(November 2008)

The Evaluation of Four Donors' Assistance in the Transport Sector:
Questionnaire for the Government of Bangladesh and Development Partners

Background:

In 2006, the Asian Development Bank (ADB), the World Bank (WB), the United Kingdom's Department for International Development (DfID), and Japan, which consists of the Government of Japan - the Ministry of Foreign Affairs (MOFA), the Japan Agency for International Cooperation (JICA), and the Japan Bank for International Cooperation (JBIC), established the Joint Country Assistance Strategy Framework (JCASF) for their assistance in Bangladesh. As the JCASF defined a common approach to the key development issues, four donors' country assistance strategies aligned with the JCASF. When WB commenced the Country Assistance Evaluation, which reviews WB's supports to Bangladesh from 2001 to 2007, the four donors (ADB/WB/DfID/Japan, hereafter "G4") agreed to carry out a joint evaluation of their assistance with special emphasis on the alignment and harmonization (A&H) in Bangladesh. On behalf of Japan, JBIC contributes to this joint effort by conducting an evaluation on four donors' assistance in the transport sector with A&H focused.

Evaluators

JBIC commissions Mr. Takeo Matsuzawa at PADECO Co., Ltd. and Mr. Nobuyuki Kobayashi at OPMAC Corporation to conduct this evaluation. Mr. Rafiqul Islam at BCL Associates supports them during this evaluation.

Objective:

The main objective of this questionnaire is to obtain information on the formation and implementation process of projects/programs in the transport sector, especially in respect of A&H, and the results of G4's assistance as a whole.

Evaluation Criteria

For the evaluation on G4's assistance in the transport sector, the DAC Evaluation Criteria (i.e.(1) Relevance, (2) Efficiency, (3) Effectiveness, (4) Impact, and (5) Sustainability) are employed. The Criteria will be applied to this evaluation as follows:

Evaluation Criteria	
(1) RELEVANCE	This criterion will focus mainly on the consistency between the Bangladesh development policies/sector plans and four donor's assistance strategies.
(2) EFFICIENCY	This criterion will analyze how much A&H activities (i.e. LCG meeting, joint projects, division of labor, conduct of advisory and analytical activities, use of country system, etc.) contributed to the productivity of formation and implementation process of four donors' assistance.
(3) EFFECTIVENESS	This criterion will examine how much four donors' assistance jointly supported Bangladesh in coping with issues in the transport sectors.
(4) IMPACT	This criterion will describe the extent to four donors' assistance jointly contributed to economic and social development in Bangladesh. This criterion will verify intended and unintended, direct and indirect, positive and negative changes as a result of the assistance.
(5) SUSTAINABILITY	This criterion will illustrate the status of relevant governments' capabilities to maintain the effectiveness of transport infrastructure. In addition, this criterion will examine the extent to which four donors' assistance enhances the maintenance capacity of the government agencies.

Information of Respondent:

Name:	Designation:	Since (Month/Year)
Tel:	Fax:	Email:

Questions:

It would be highly appreciated if you could please fill out this questionnaire form by the time of interview, which is expected to be held from November 16 to 20. You can skip a question on which you do not have sufficient information:

1. Relevance

1-1.(For MOC, PC-TSCW) What were major changes of transport sector policy between 2001 and 2008? Please refer to relevant sections of policy documents (i.e. PRSP, Road Master Plan, etc.). Was there any policy change in the development of five major corridors?

1-2. (For MOC, PC-TSCW) Was the development of transport corridors placed emphasis in Bangladesh national policy/sector policy between 2001 and 2008? Was there any change in the selection of corridors?

1-3. (For MOC, PC-TSCW) Was there any mechanism to check the consistency between donors' projects/programs and Bangladesh national policy/ transport sector policy?

1-4. (For MOC,PC-TSCW) Was there policy dialogue between the GOB and JSP donors? Did JSP make

any policy recommendation in the transport sector (such as road maintenance budget)? Was there any improvement in transport sector policy?

1-5 (For MOC,PC-TSCW) Does PRSP define infrastructure needs in detail and ensure relevance between donor-funded projects/programs and development goals? Are master plans required to ensure relevance between donor-funded projects/programs and development goals?

2. Efficiency

General

2-1. (For PC-IMED) How does your organization obtain information on ongoing projects/programs supported by donors? Does your organization take any action to solve an implementation issue which an executing agency needs support from other government ministry/agency? If yes, please specify actions.

Railway

2-2. (For MOC, ADB, and WB) Would the formation of railway projects require more workloads and time if each donor separately pursued reform agenda?

2-3. (For MOC) Did the MOC officially confirm a reform agenda, which the MOU defines in its attached matrix?

2-4. (For MOC, ADB, WB) How does the MOC monitor the progress of reform? Is the MOC satisfied with the progress of reform? Please elaborate reasons behind satisfaction/dissatisfaction.

2-5. (For ADB, WB) Did ADB, WB, and JBIC periodically conduct the joint review of reform implementation as mentioned in the MOU? If not, please elaborate the reason not to conduct joint review? Does the periodic review require substantial efforts? Is it too early to review the progress of reform? Is there any mechanism to substitute the periodic review?

Jamuna Bridge/Padma Bridge

2-6. (For BBA, ADB, WB) In comparison with a project funded by a single donor, did transaction costs of Jamuna Bridge increase or decrease in following procedures?

1) Defining the scope of work

(substantially increased / increased/ same/ decreased/ substantially decreased)

2) Sharing the safeguard policy

(substantially increased/ increased/ same/ decreased/ substantially decreased)

3) Procurement of goods and services

(substantially increased/ increased/ same/ decreased/ substantially decreased)

4) Disbursement of fund

(substantially increased/ increased/ same/ decreased/ substantially decreased)

2-7. (For BBA, ADB, WB) If you selected “substantially increased” or “increased”, please describe how transaction costs increased.

2-8. (For BBA, ADB, WB) Does the implementation of Padma Bridge require a lead donor institution which took care of the inter-donor coordination as that of the Jamuna did so? What are advantages and disadvantages of having a lead donor?

2-9. (For BBA, ADB, WB) Did the balancing function of the Panel of Expert (POE) contribute to the coordination among donors for Jamuna Bridge? Did the POE contribute to the efficient implementation of the Jamuna Bridge Project? If yes, please elaborate how POE contribute to the efficient implementation?

Rural Road

2-10. (For LGED) Did G4 agree to apply the Public Procurement Regulations 2003 to the Local Competitive Bidding in principle? Was there any mismatch with G4' procurement guidelines? Was the mismatch resolved? Is there any difficulty in concurrence of contracts?

2-11. (For LGED) Did the Public Procurement Act 2006 replace the Public Procurement Regulations 2003? Did G4 agree to apply the Public Procurement Act 2006 to the Local Competitive Bidding in principle? Does the change-over process enhance transparency of procurement? If yes, how was transparency of procurement enhanced?

2-12. (For LGED) Did G4 agree to apply the Public Procurement Act 2006 to the International Competitive Bidding in principle? Was there any mismatch with G4' procurement guidelines? Was the mismatch resolved?

2-13. (For DfID and ADB) What is rationale behind the co-financing of the Rural Infrastructure Improvement Project II? Can the rationale be applied to parallel financing? Was the reduction of transaction costs for LGED and/or donors expected?

2-14. (For DfID and ADB) What are reasons for a delay in the implementation of the Rural Infrastructure Improvement Project II

Disaster Damage Rehabilitation

2-15. (For ADB, WB, LGED) How did the joint damage and needs assessment among the GOB, ADB, WB, JBIC contribute to the formation of the scope of donors' assistance? Did the assessment help define the scope of donors' assistance? Did the assessment help the GOB and donors to share the objective of

donors' assistance?

2-16. (For ADB, LGED) Is the disburse of the Emergency Disaster Damage Rehabilitation Project quick enough? Is there any process which can be skipped or shortened?

2-17. (For ADB) Was there any attempt to include other donors (except ADB, CIDA, and Japan) for the Emergency Disaster Damage Rehabilitation Project? If yes, what prevented them from joining in the project?

2-18. (For ADB) Was there any coordination effort with other donors (except ADB, CIDA, and Japan)? Was the result of the joint damage and needs assessment shared with other donors?

2-19. (For ADB) Did the formation of the project require more workloads in comparison with co-financed projects? If yes, what was a process which required more efforts?

2-20. (For ADB) Did the implementation of the project require more workloads in comparison with a co-financed project? If yes, what was a process which required more efforts?

2-21. (For ADB) Did the implementation of the project require more workloads in comparison with a usual project? If yes, what was a process which required more efforts?

3. Effectiveness/Impact

Rural Road

3-1 (For LGED) How does your organization monitor effects of rural roads? If yes, please specify indicators. Did your organization set targets for effects of rural roads? How do you assess social impacts on beneficiaries?

4. Sustainability

General

4-1. (For PC-IMED) Does PC-IMED evaluate projects conducted by RHD and LGED? Does PC-IMED review maintenance contracts of RHD and LGED? Does PC-IMED have access to information on maintenance contracts of RHD and LGED? Does PC-IMED have access to audit results prepared by the Office of the Comptroller and Auditor General?

Trunk Road

4-2. (For DfID) Is there any improvement in the management of maintenance contracts after external audit?

4-3. (For DfID) Does the Central Management and Monitoring System (CMS) supported by DfID contribute to more transparent procurement of maintenance works? Does the CMS contribute to more efficient procurement of maintenance works?

4-4 (For PC-IMED) Does RHD properly maintain road assets? Is RHD allocated sufficient budget for road maintenance? Does RHD have the sufficient number of skilled staff? Does RHD disclose sufficient information of maintenance contracts?

Rural Road

4-5. (For LGED) How frequently did LGED collect IRI data? Did LGED collect other data on road conditions?

4-6. (For LGED) Are IRI data classified by road category (Upazila, Union, and Village) between 2001 and 2007 available? Are road conditions improved in general?

4-7. (For LGED) How did the Rural Engineering Development Center (REDC) contribute to road maintenance? Did JICA Expert contribute to REDC's services? If yes, please specify types of service which REDC can deliver.

4-8. (For LGED) What are merits of connecting GIS with road inventory? How does it contribute to road maintenance (less time for maintenance planning, more appropriate selection of road, etc?)

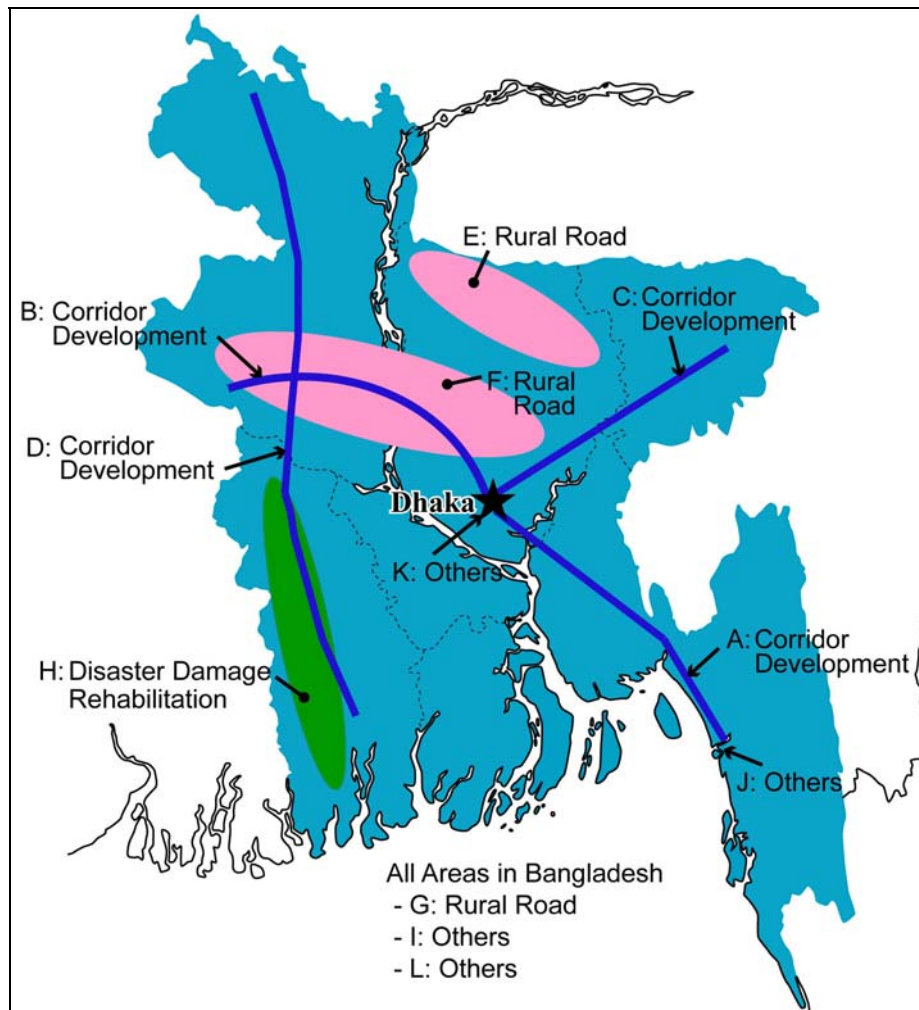
4-9. (For LGED) How long does it take for maintenance planning? Is the planning process completed before the beginning of fiscal year? Can LGED deplete allocated budget every year?

4-10. (For LGED) Did LGED conduct ex-post examination on the quality maintenance work? How LGED examine the quality of work? How does LGED cope with substandard works?

4-11. (For PC-IMED) Does LGED properly maintain road assets? Is LGED allocated sufficient budget for road maintenance? Does LGED have the sufficient number of skilled staff? Does LGED disclose sufficient information of maintenance contracts?

Thank you very much for your cooperation.

Appendix - 5: Project Approved before FY 2001 and disbursed during FY 2001 - FY 2007



Corridor Development

- A: Dhaka-Chittagong Corridor
 - ADB: Jamuna Bridge Access Roads
 - ADB: Road Maintenance and Improvement
- B: Dhaka-Northwest Corridor
 - ADB: Jamuna Bridge Access Roads
 - ADB: Jamuna Bridge Railway Link
 - Japan: Jamuna Bridge Access Roads Project
 - WB: Third Road Rehabilitation and Maintenance Project
- C: Dhaka-Sylhet Corridor
 - DfID: Construction of the Bhairab Bridge and Operation and Maintenance Consultancy
 - WB: Third Road Rehabilitation and Maintenance Project
- D: Khulna-Northwest Corridor
 - Japan: Rupsa Construction Project

Rural Road

- E: RDP-21
 - Japan: Northern Rural Infrastructure Development Project
- F: WB: Second Rural Roads & Markets Improvement
- G: All Areas in Bangladesh
 - DfID: Rural Bridge Project
 - Japan: The Project for Improvement of Portable Steel Bridges for Feeder Roads

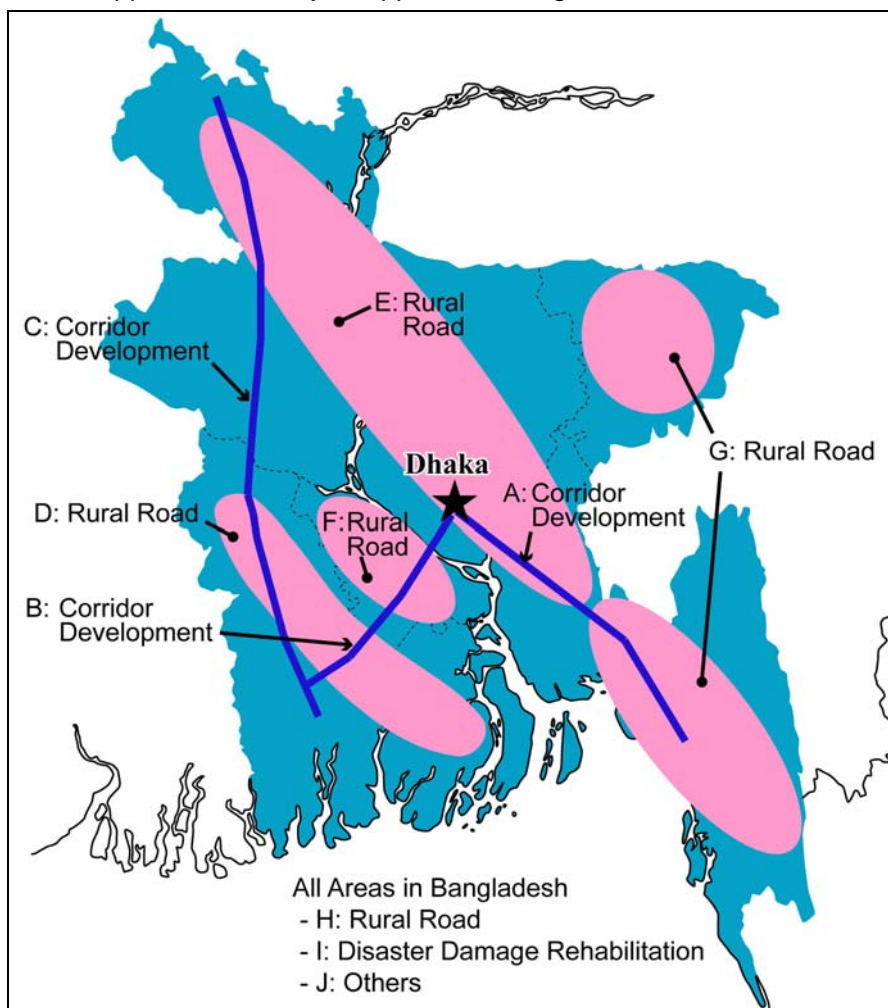
Disaster Damage Rehabilitation

- H: ADB: Southwest Flood Damage Rehabilitation

Others

- I: DfID: Bridge Replacement Project
- J: Japan: Chittagong Airport Development Project
- K: WB: Dhaka Urban Transport
- L: WB: Third Inland Water Transport

Appendix - 6: Project Approved during FY 2001 - FY 2007



Corridor Development

A: Dhaka-Chittagong Corridor

- ADB: Chittagong Port Trade Facilitation
- ADB: Railway Sector Investment Program - Subproject1
- Japan: Dhaka-Chittagong Railway Development Project
- WB: Railway Reform Programmatic Development Policy Credit

B: Dhaka- Khulna Corridor

- ADB: Padma Multi-purpose Bridge Design Project
- Japan: Feasibility Study of Padma Bridge

C: Khulna-Northwest Corridor

- ADB: Road Network Improvement and Maintenance
- ADB: Road Network Improvement and Maintenance Project II
- Japan: Paksey Bridge Construction Project (I)(II)

Rural Road

D: ADB: Rural Infrastructure Improvement

- E: Second Rural Infrastructure Improvement**
- ADB: Second Rural Infrastructure Improvement
- DfID: Second Rural Infrastructure Improvement
- Japan: Greater Falidpur Rural Infrastructure Development Project

Japan: Eastern Bangladesh Rural Infrastructure Development Project

H: All Areas in Bangladesh

- DfID: Local Government Engineering Department Portable Steel Bridging
- Japan: The Project for Improvement of Steel Bridges for Roads in Rural Areas
- Japan: The Project for the Provision of Portable Steel Bridges on Upazila and Union Roads
- WB: Rural Transport Improvement Project
- WB: Rural Transport Improvement Additional Financing
- WB: Municipal Services Additional Financing

Disaster Damage Rehabilitation

- I: Disaster Damage Rehabilitation**
- ADB: Emergency Disaster Damage Rehabilitation (Sector) Project
- Japan: Emergency Disaster Damage Rehabilitation Project

Others

- J: DfID: Sector Budget Support for Roads and Highways Department**

Appendix - 7: Four Donor's Disbursement Data

Total Disbursement for FY2001-FY2007 (by approval timing)

Donor	Type	Pledged Amount (USD mil.)	Disbursed Amount (US\$ mil.)							Total
			FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	
Four Donors	Before FY2001	1428.46	195.25	147.01	168.82	112.18	94.37	39.37	16.36	775.10
Four Donors	After FY2001	1431.01	29.13	41.68	50.99	46.85	75.94	65.51	144.16	454.25
	Total	2859.47	224.38	188.69	219.80	159.03	170.31	104.88	160.52	1229.35

Total Disbursement for FY2001-FY2007 (by subsector)

Donor	Subsector	Pledged Amount (USD mil.)	Disbursed Amount (US\$ mil.)							Total
			FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	
Four Donors	Trunk Road	1090.78	111.22	117.26	133.04	114.94	101.34	51.91	26.20	655.90
Four Donors	Rural Road	785.25	49.19	36.74	25.36	22.49	56.90	48.72	63.69	303.09
Four Donors	Railway	391.09	31.22	9.45	7.90	0.00	0.00	0.00	41.38	89.96
Four Donors	Port	30.60	0.00	0.00	0.00	0.00	0.01	0.20	1.13	1.34
Four Donors	IWT	42.56	3.49	0.00	0.00	0.00	0.00	0.00	0.00	3.49
Four Donors	Airport	107.52	13.69	0.75	1.56	0.00	0.00	0.00	0.00	16.00
Four Donors	Urban	177.00	8.06	10.51	21.82	18.13	12.06	4.05	0.00	74.63
Four Donors	Multi Sector	234.66	7.51	13.99	30.12	3.48	0.00	0.00	28.11	83.21
	Total	2859.47	224.38	188.69	219.80	159.03	170.31	104.88	160.52	1227.62

Project Approved during FY 2001-FY2007

Donor	Subsector	Pledged Amount (USD mil.)	# of Projects
Four Donors	Trunk Road	351.92	5
Four Donors	Rural Road	491.43	11
Four Donors	Railway	281.09	3
Four Donors	Port	30.60	1
Four Donors	Multi Sector	145.00	2
	Total	1300.05	22

Appendix - 8: Disbursement Data (ADB)

Projects approved before FY2001

Donor	Name	Subsector	Type	Approval Date	Pledged Amount (USD mil.)	Disbursed Amount (US\$ mil.)								
						FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	Subtotal	
ADB	Jamuna Bridge Access Roads	Trunk Road	Loan	5-Nov-96	72	9.40	4.07							13.47
ADB	Jamuna Bridge Railway Link	Railway	Loan	2-Oct-97	110	31.22	9.45	7.90						48.58
ADB	Southwest Road Network Development	Trunk Road	Loan	16-Nov-99	115	16.62	13.63	13.23	15.77	21.04	5.85			86.14
ADB	Road Maintenance and Improvement	Trunk Road	Loan	29-Nov-00	72.00	0.36	4.18	9.43	6.72	9.34	11.51	6.83		48.37
ADB	Road Maintenance and Improvement (OCR)	Trunk Road	Loan	29-Nov-00	22.00	0.24	0.07	2.82	2.24	3.14	4.63	2.78		15.92
ADB	Southwest Flood Damage Rehabilitation	Trunk Road /Rural Road	Loan	21-Dec-00	54.80	7.51	13.99	30.12	3.48	0.00	0.00			55.10
Total					445.8	65.35	45.39	63.51	28.21	33.52	21.99	9.61		267.57

Projects approved in and after FY2001

Donor	Name	Subsector	Type	Approval Date	Pledged Amount (USD mil.)	Disbursed Amount (US\$ mil.)								
						FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	Subtotal	
ADB	Road Network Improvement and Maintenance	Trunk Road	Loan	10-Oct-02	65					0.03	1.1	3.68		4.81
ADB	Rural Infrastructure Improvement	Rural Road	Loan	2-Dec-02	60								0	0
ADB	Road Network Improvement and Maintenance Project II	Trunk Road	Loan	20-Nov-03	126						0.51	1.55		2.06
ADB	Chittagong Port Trade Facilitation	Port	Loan	20-Dec-04	30.6					0.01	0.2	1.13		1.34
ADB	Second Rural Infrastructure Improvement Project	Rural Road	Loan	18-Aug-06	96.1									0.00
ADB	Railway Sector Investment Program-Subproject1(OCR)	Railway	Loan	13-Feb-07	100								0.99	0.99
ADB	Railway Sector Investment Program-Subproject1	Railway	Loan	13-Feb-07	30								0.39	0.39
ADB	Padma Multi-purpose Bridge Design Project	Trunk Road	Loan	5-Dec-07	17.6									0.00
ADB	Emergency Disaster Damage Rehabilitation (Sector) Project	Multi sector	Loan	4-Feb-07	120									0.00
Total					645.30	0.00	0.00	0.00	0.00	0.04	1.81	7.74		9.59

Total Disbursement for FY2001-FY2007 (by approval timing)

Donor	Type	Pledged Amount (USD mil.)	Disbursed Amount (US\$ mil.)							
			FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	Total
ADB	Before FY2001	445.8	65.35	45.39	63.51	28.21	33.52	21.99	9.61	267.57
ADB	After FY2001	645.30	0.00	0.00	0.00	0.00	0.04	1.81	7.74	9.59
Total		1091.1	65.35	45.39	63.51	28.21	33.56	23.80	17.35	277.16

Total Disbursement for FY2001-FY2007 (by subsector)

Donor	Subsector	Pledged Amount (USD mil.)	Disbursed Amount (US\$ mil.)							
			FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	Total
ADB	Trunk Road	489.60	26.62	21.95	25.48	24.73	33.55	23.60	14.84	170.77
ADB	Rural Road	156.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ADB	Railway	240.00	31.22	9.45	7.90	0.00	0.00	0.00	1.38	49.96
ADB	Port	30.60	0.00	0.00	0.00	0.00	0.01	0.20	1.13	1.34
ADB	Multi Sector	174.80	7.51	13.99	30.12	3.48	0.00	0.00	0.00	55.10
Total		1091.10	65.35	45.39	63.51	28.21	33.56	23.80	17.35	277.16

Appendix - 9: Disbursement Data (DfID)

Projects approved before FY2001

Donor	Name	Subsector	Type	Approval Date	Pledged Amount (UK£ mil.)	Disbursed Amount (GBP mil.)							Subtotal	
						FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007		
DfID	Construction of the Bhairab Bridge and Operation and Maintenance Consultancy	Trunk Road	Grant	1-Aug-98	21.74	6.30	4.04	2.61	0.36	0.10	0.03	0.01	13.45	
DfID	Rural Bridges Project (LGED)	Rural Road	Grant	1-Feb-98	4.50	0.20							0.20	
DfID	Bridge Replacement Project	Trunk Road	Grant	1-Feb-00	12.00	0.27	0.26	0.65	0.16	0.62	3.27	2.61	7.83	
					Total	38.24	6.76	4.31	3.26	0.52	0.72	3.30	2.62	21.49
					Total (USD)	68.10	9.81	6.94	5.82	1.00	1.24	6.47	5.24	38.26

Projects in and after FY2001

Donor	Name	Subsector	Type	Approval Date	Pledged Amount (UK£ mil.)	Disbursed Amount (GBP mil.)							Subtotal	
						FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007		
DfID	Sector Budget Support for Roads and Highways Department	Trunk Road	Grant	1-Sep-04	36.00					12.00	8.00		20.00	
DfID	Local Government Engineering Department Portable Steel Bridging	Rural Road	Grant	1-Jul-06	6.92								0.00	
DfID	Second Rural Infrastructure Improvement	Rural Road	Grant	1-Jun-07	29.00								0.00	
					Total	71.92	0.00	0.00	0.00	0.00	12.00	8.00	0.00	20.00
					Total(USD)	128.09	0.00	0.00	0.00	0.00	20.66	15.70	0.00	36.37

*Fiscal Year-end: March

Total Disbursement for FY2001-FY2007 (by approval timing)

Donor	Type	Pledged Amount (US\$ mil.)	Disbursed Amount (USD mil.)							Total
			FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	
DfID	Before FY2001	68.10	9.81	6.94	5.82	1.00	1.24	6.47	5.24	38.26
DfID	After FY2001	128.09	0.00	0.00	0.00	0.00	20.66	15.70	0.00	36.37
Total		196.19	9.81	6.94	5.82	1.00	21.91	22.18	5.24	74.63

Total Disbursement for FY2001-FY2007 (by subsector)

Donor	Subsector	Pledged Amount (US\$ mil.)	Disbursed Amount (USD mil.)							Total
			FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	
DFID	Trunk Road	124.20	9.52	6.94	5.82	1.00	21.91	22.18	5.24	72.61
DFID	Rural Road	71.99	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.29
Total		196.19	9.81	6.94	5.82	1.00	21.91	22.18	5.24	72.90

Exchange Rate	Avg. 01-07	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007
USD/GBP	1.7809	1.4504	1.6118	1.7847	1.9314	1.7219	1.9630	2.0034

Appendix - 10: Disbursement Data (Japan)

Projects approved before FY2001

Donor	Name	Subproject	Type	Approval Date	Pledged Amount (Yen mil.)	Disbursed Amount (JPY mil.)							
						FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	SubTotal
Japan	Chittagong Airport Development Project	Airport	Loan	28-Jun-95	12501.00	1804.30	89.36	167.11					2060.76
Japan	Jamuna Bridge Access Roads Project	Trunk Road	Loan	27-Jun-97	6206.00	878.69	605.88	819.52	532.38	216.33	224.95	171.62	3449.37
Japan	Northern Rural Infrastructure Development Project	Rural Road	Loan	29-Jun-99	6593.00	1389.99	1477.01	774.62	470.77	388.24	85.47		4586.11
Japan	The Project for Improvement of Portable Steel Bridges for Feeder Roads	Rural Road	Grant	11-Jan-01	N/A	226.00	701.00						927.00
Japan	Rupsa Construction Project	Trunk Road	Loan	29-Mar-01	8300.00	2484.71	1653.11	1530.94	1120.24	672.67	504.51		7966.18
Total					33600.00	6783.69	4526.35	3292.19	2123.39	1277.24	814.93	171.62	18989.42
Total (USD)					289.00	51.47	37.75	30.74	20.39	10.83	6.85	1.51	159.54

Projects approved in and after FY2001

Donor	Name	Subsector	Type	Approval Date	Pledged Amount (Yen mil.)	Disbursed Amount (JPY mil.)							
						FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	SubTotal
Japan	Greater Falidpur Rural Infrastructure Development Project	Rural Road	Loan	29-Mar-01	4055.00	701.07	1095.26	741.49	312.84	434.23	563.21	126.74	3974.84
Japan	The Project for Improvement of Steel Bridges for Roads in Rural Areas	Rural Road	Grant	6-Aug-01 12-Jun-02	N/A	588.00	363.00						951.00
Japan	Paksey Bridge Construction Project(II)	Trunk Road	Loan	20-Mar-03	9209.00	2549.88	3539.36	3586.96	3007.58	191.59		525.66	13401.04
Japan	Eastern Bangladesh Rural Infrastructure Development Project	Rural Road	Loan	16-Mar-05	11345.00					1010.59	502.87	3180.95	4694.41
Japan	The Project for the Provision of Portable Steel Bridges on Upazila and Union Roads	Rural Road	Grant	10-Nov-05 9-Jul-06 15-Aug-07	N/A					679.00	700.00	611.00	1990.00
Japan	Dhaka-Chittagong Railway Development Project	Railway	Loan	11-Dec-07	12916.00								0.00
Japan	Emergency Disaster Damage Rehabilitation Project	Multi sector	Loan	25-Feb-08	6960							3205.00	3205.00
Total					44485.00	3838.95	4997.62	4328.45	3320.42	2315.41	1766.09	7649.35	28216.29
Total (USD)					382.62	29.13	41.68	40.42	31.89	19.63	14.85	67.10	244.69

*Approval Date and Pledged Amount are based on the Exchange of Notes

** Grant data are provided by the Ministry of Foreign Affairs of Japan

***Grant data from general grant aid and Grassroots Human Security

****Fiscal Year-end: March

*****USD=JPY 92.595

(As of December 11, 2008)

Total Disbursement for FY2001-FY2007 (by approval timing)

Donor	Type	Pledged Amount (US\$ mil.)	Disbursed Amount (JPY mil.)							Total
			FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	
Japan	Before FY2001	289.00	51.47	37.75	30.74	20.39	10.83	6.85	1.51	159.54
Japan	After FY2001	382.62	29.13	41.68	40.42	31.89	19.63	14.85	67.10	244.69
Total		671.62	80.60	79.43	71.15	52.28	30.45	21.70	68.60	404.23

Total Disbursement for FY2001-FY2007 (by subsector)

Donor	Subsector	Pledged Amount (US\$ mil.)	Disbursed Amount (JPY mil.)							Total
			FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	
Japan	Trunk Road	203.98	44.87	48.36	55.44	44.76	9.16	6.13	6.12	214.83
Japan	Rural Road	189.17	22.04	30.33	14.16	7.53	21.29	15.57	34.37	145.29
Japan	Railway	111.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Japan	Airport	107.52	13.69	0.75	1.56	0.00	0.00	0.00	0.00	16.00
Japan	Multi sector	59.86	0.00	0.00	0.00	0.00	0.00	0.00	28.11	28.11
Total		611.76	80.60	79.43	71.15	52.28	30.45	21.70	40.49	404.23

Exchange Rate	Avg. 01-07	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007
JPY/USD	116.26	131.80	119.90	107.10	104.12	117.97	118.95	114.00

Appendix - 11: Disbursement Data (WB)

Projects approved before FY2001

Donor	Name	Subsector	Type	Approval Date	Pledged Amount (US\$ mil.)	Disbursed Amount (US\$ mil.)								
						FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	Total	
WB	Second Rural Roads & Markets Improvement	Rural Road	Loan	19-Dec-96	133	26.86	6.41	0.63						33.90
WB	Third Road Rehabilitation and Maintenance Project	Trunk Road	Loan	1-Oct-98	273	30.22	40.01	46.30	44.45	36.72				197.70
WB	Dhaka Urban Transport	Urban	Loan	19-Jan-99	177	8.06	10.51	21.82	18.13	12.06	4.05	0.00		74.63
WB	Third Inland Water Transport	IWT	Loan	20-Apr-99	42.56	3.49								3.49
Total					625.56	68.63	56.93	68.75	62.58	48.78	4.05	0.00		309.72

Projects approved in and after FY2001

Donor	Name	Subsector	Type	Approval Date	Pledged Amount (US\$ mil.)	Disbursed Amount (US\$ mil.)								
						FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	Total	
WB	Rural Transport Improvement Project	Rural Road	Loan	19-Jun-03	190.00			10.57	14.96	35.61	33.15	29.32		123.61
WB	Railway Reform Programmatic Development Policy Credit	Railway	Loan	19-Oct-06	40.00							40.00		40.00
WB	Rural Transport Improvement Additional Financing	Rural Road	Loan	10-Jan-08	20.00							0.00		0.00
WB	Municipal Services Additional Financing	Rural Road	Loan	10-Jan-08	25.00							0.00		0.00
Total					275.00	0.00	0.00	10.57	14.96	35.61	33.15	69.32		163.61

Total Disbursement for FY2001-FY2007 (by approval timing)

Donor	Type	Pledged Amount	Disbursed Amount (US\$ mil.)							
			FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	Total
WB	Before FY2001	625.56	68.63	56.93	68.75	62.58	48.78	4.05	0.00	309.72
WB	After FY2001	275.00	0.00	0.00	10.57	14.96	35.61	33.15	69.32	163.61
Total		900.56	68.63	56.93	79.32	77.54	84.39	37.20	69.32	473.33

Total Disbursement for FY2001-FY2007 (by subsector)

Donor	Subsector	Pledged Amount	Disbursed Amount (US\$ mil.)							
			FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	Total
WB	Trunk Road	273.00	30.22	40.01	46.30	44.45	36.72	0.00	0.00	197.70
WB	Rural Road	368.00	26.86	6.41	11.20	14.96	35.61	33.15	29.32	157.51
WB	Railway	40.00	0.00	0.00	0.00	0.00	0.00	0.00	40.00	40.00
WB	IWT	42.56	3.49	0.00	0.00	0.00	0.00	0.00	0.00	3.49
WB	Urban	177.00	8.06	10.51	21.82	18.13	12.06	4.05	0.00	74.63
Total		900.56	68.63	56.93	79.32	77.54	84.39	37.20	69.32	473.33

Appendix - 12: TA Grant Data

TA Grant: FY 2001-2007

Organization	Name	Type	Approval Date	Pledged Amount (USD mil.)
ADB	Chittagong Port Trade Facilitation	PP	2-Jul-03	0.50
ADB	Chittagong Port Efficiency Improvement	AD	20-Dec-04	0.70
ADB	Institutional Support for Railway Reforms	AD	10-Oct-06	2.00
ADB	Regional Rail Traffic Enhancement	PP	13-Jul-07	0.12
ADB	Jamuna Bridge Impact Study	AD	3-Jul-01	0.15
ADB	Rural Infrastructure Improvement	PP	19-Sep-01	0.44
ADB	Northwest Road Corridor Development	PP	29-Oct-01	0.15
ADB	Road Network Improvement and Maintenance II	PP	30-Oct-01	0.60
ADB	Support to the Roads and Highways Department for Safeguard Policy Compliance	AD	23-Nov-04	0.50
ADB	Padma Multipurpose Bridge	PP	22-Sep-05	0.80
ADB	Development of Transport Corridors for Trade Facilitation	PP	26-Jul-06	0.95
DFID	Consolidation of the Institutional Development Component of Third Road Rehabilitation and Maintenance Project (Phases II & III)	AD	1-Nov-93	33.14
DFID	Sector Budget Support for Roads and Highways Department	AD	1-Sep-04	5.93
DFID	Local Government Engineering Department Portable Steel Bridging: international monitoring consultants	AD	31-Mar-08	0.12
DFID	Transport Sector Management Reform Programme	AD	19-Apr-06	5.48
DFID	Rural Infrastructure Improvement Project II	AD	1-Jun-07	8.96
Japan	Rural Development Engineering Center Setting-up Project	AD	1-Sep-02	0.73
Japan	F/S of Padma Bridge	PP	1-Mar-03	6.18
Japan	Road/Bridge Maintenance Advisor	AD	28-Jun-05	0.49
Japan	Rural Development Engineering Center Setting-up Project (Phase 2)	AD	28-Jun-05	0.63
Japan	Other Advisors	AD		1.32
Japan	Training	AD		4.22
			Total	74.08

*AD:Advisory Work, PP:Project Preparation

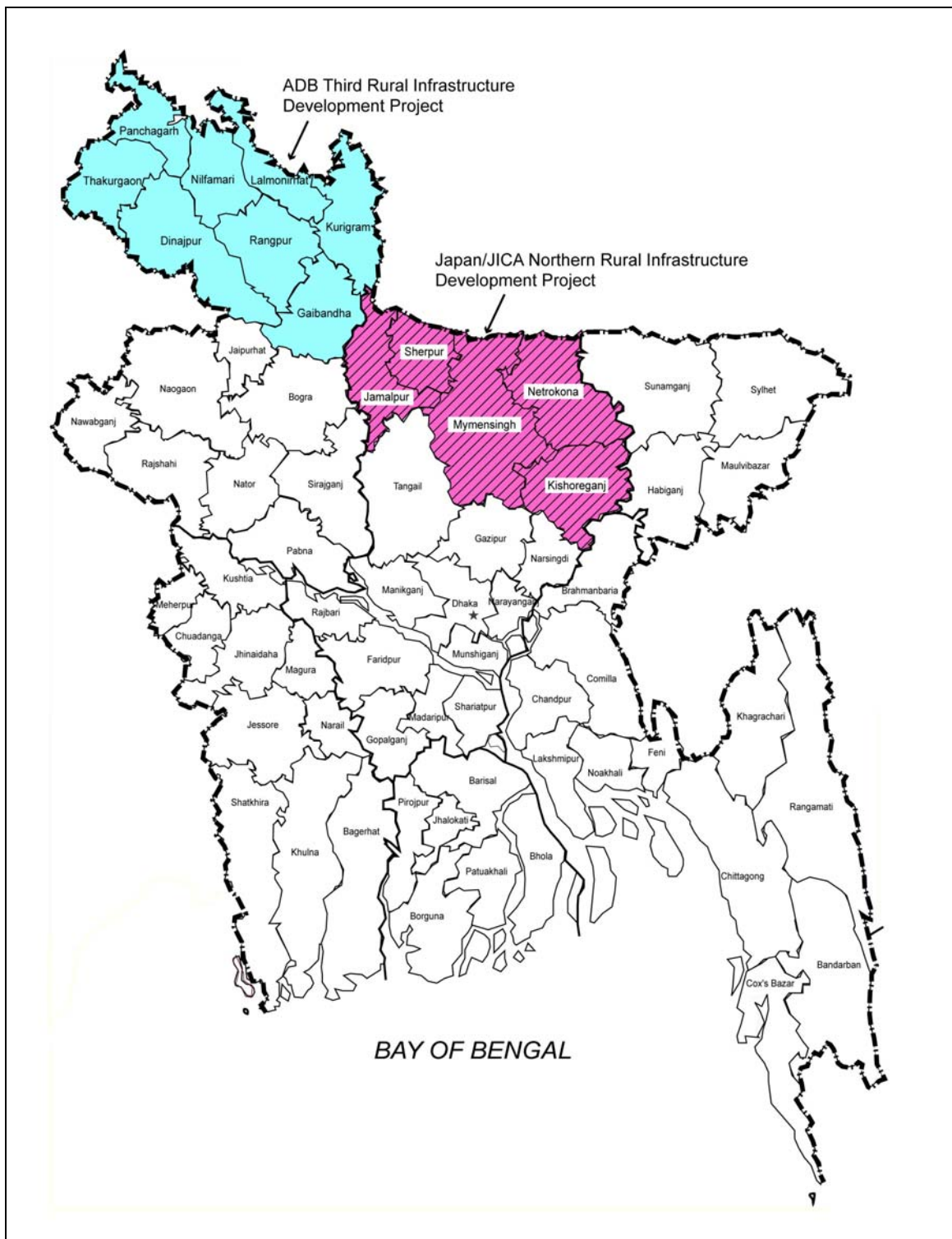
**USD=GBP 0.6751

***USD=JPY 92.595

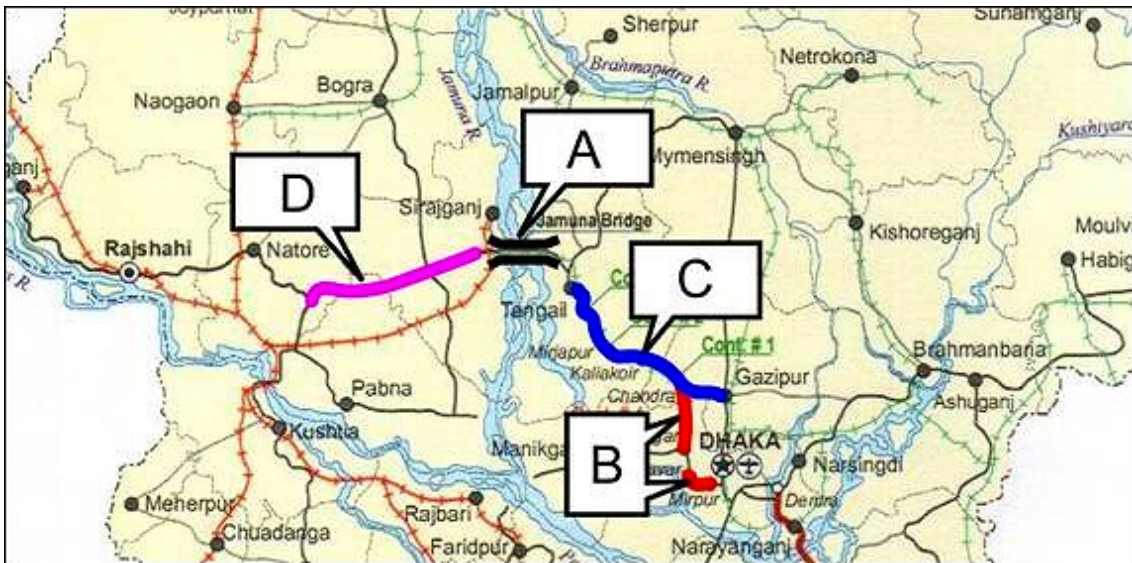
Appendix - 13: A&H Activities in Japanese Assistance during the Evaluation Period

Name of Project	MOU	Joint Co-finance	Parallel Co-finance	Area Assignment	A&H Activities
Chittagong Airport Development Project					N/A
Jamuna Bridge Access Roads Project			X		ADB and JICA supported RHD in the improvement of national roads between Dhaka and Jamuna Bridge.
Northern Rural Infrastructure Development Project			X	X	ADB and JICA were engaged in development of rural roads in assigned areas over the Northern Bangladesh.
The Project for Improvement of Portable Steel Bridges for Feeder Roads					N/A
Rupsa Construction Project					N/A
Greater Falidpur Rural Infrastructure Development Project					N/A
The Project for Improvement of Steel Bridges for Roads in Rural Areas			X		DFID and Japan supported LGED in construction/rehabilitation of small bridges across Bangladesh.
Paksey Bridge Construction Project(I)(II)					N/A
Eastern Bangladesh Rural Infrastructure Development Project					N/A
The project for the Provision of Portable Steel Bridges on Upazila and Union Road					N/A
Dhaka-Chittagong Railway Development Project	X		X		ADB, JICA, and WB signed the MOU on railway reform and finance the rehabilitation of the Dhaka-Chittagong line
Emergency Disaster Damage Rehabilitation Project		X			ADB, CIDA, and JICA supported LGED in rehabilitation of several types of small scale infrastructure.

Appendix 14: Area Assignment of the Rural Road Component of RDP-21



Appendix -15: Dhaka- Northwest Corridor Map

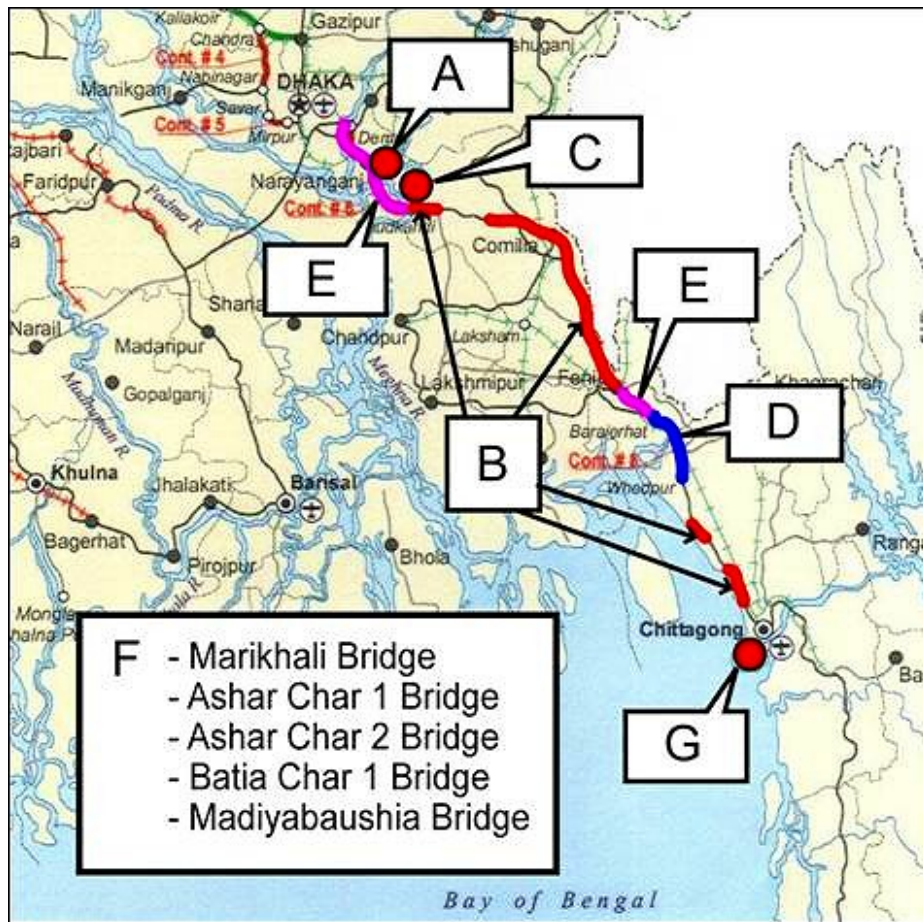


No.	Project	Donor	Approved Date	Pledged Amount	Project Scope
A	Jamuna Multipurpose Bridge Project	ADB	Mar-94	USD 200 mil.	Bridge, River Training, Approach Roads
		Japan	Mar-94	USD 200 mil.	
		WB	Feb-94	USD 200 mil.	
B	Jamuna Bridge Access Roads Project	ADB	Nov-96	USD 72 mil	Improvement of Highway
C	Jamuna Bridge Access Roads Project	Japan	Jul-97	USD 67 mil**	Improvement of Highway
D	Third Road Rehabilitation and Maintenance Project	WB	Jan-98	USD 273 mil.	Construction of Highway

*Original Amount is JPY 21,562 mil.(USD1:JPY107.81 as of 1994)

**Original amount is JPY 6206 mil. (USD1=JPY 92.595 as of Dec 11,2008)

Appendix-16: Dhaka-Chittagong Corridor Map



No.	Project	Donor	Approved Date	Pledged Amount	Project Scope
A	Construction of the Meghna Bridge	Japan	1986	USD 86mil*	Construction of Bridge on NH1
B	Road Improvement	ADB	Aug-87	USD 137 mil.	Improvement of NH1
C	Construction of the Meghna Gumti Bridge	Japan	1991	USD 89mil**	Construction of Bridge on NH2
D	Road Overlay and Improvement	ADB	Dec-93	USD 68 mil.	Improvement of NH1
E	Jamuna Bridge Access Roads Project	ADB	Nov-96	USD 72 mil	Improvement of highway
F	Reconstruction of Small and Medium Bridges on Dhaka-Chittagong Highway	Japan	1997	USD 31 mil.***	Reconstruction of five bridges on NH1
G	Chittagong Port Facilitation Project	ADB	Dec-04	USD31 mil.	Control access road in Chittagong Port

*Original amount is JPY 7957 mil. (USD1=JPY 92.595 as of Dec 11,2008)

**Original amount is JPY 8203 mil. (USD1=JPY 92.595 as of Dec 11,2008)

***Original amount is JPY 2837 mil. (USD1=JPY 92.595 as of Dec 11,2008)

Appendix-17: Number of Fatal Accidents in Major Highways

Highway No.	Road Section	Length (km)	Fatal Accidents 2003 (No.)	Fatalities 2003 (No.)	Fatality Accident Rate **
N1	Jatrabari-Katchpur	8.0	25	27	35.9
N1	Katchpur-Daudkandi	30.0	22	23	36.8
N1	Daudkandi-Mainamati	45.0	37	64	23.1
N1	Comilla (Mainamati)-Feni	64.0	26	33	16.1
N1	Feni-Chittagong	89.0	52	74	9.3
N1	Chittagong-Keranirhat	51.0	19	23	19.7
N1	Keranirhat-Coxs Bazar	100.0	18	26	8.1
N1	Coxs Bazar-Teknaf	79.0	5	10	14.1
N2	Katchpur-Shahepratap	35.0	16	18	13.2
N2	Shahepratap-Bhairab	38.9	37	37	42.2
N2	Ashuganj-Sarail	12.0	6	8	37.0
N2	Sarail-Sreemangal	97.6	4	4	2.5
N2	Sreemangal-Moulvibazar	18.0	2	2	5.1
N3	Banani Rail Crossing-Tongi Bridge	10.0	6	6	2.8
N3	Tongi-Joydevpur	12.5	6	6	4.6
N3	Joydevpur-Mymensingh	90.0	8	12	6.6
N4	Joydevpur-Kaliakoir	21.0	7	7	6.3
N4	Kaliakoir-Tangail	43.0	14	27	8.3
N4	Tangail-Elenga	10.5	3	6	7.4
N4	Elenga-Madhupur	36.6	2	2	2.0
N5	Mirpur Bridge-Nabinagar	22.0	15	20	17.0
N5	Nabinagar-Manikganj	29.3	11	11	6.5
N5	Manikganj-Aricha	24.0	14	16	28.4
N5	Kashinathpur-Hatikamrul	56.5	13	17	22.1
N5	Hatikamrul-Bogra	61.4	19	33	10.0
N5	Bogra-Gobindaganj	32.0	3	8	13.3
N5	Gobindaganj-Rangpur	71.4	2	3	1.9
N5	Beldanga-Panchagarh	77.0	6	8	6.9
N5	Panchagarh-Banglabandha	58.0	9	9	17.7
N6	Kashinathpur-Dasuria	62.0	3	4	3.4
N6	Natore-Rajshahi	48.0	14	26	22.4
N7	Kamarkhali-Magura	15.0	4	7	13.2
N7	Magura-Jhenaidah	28.0	7	8	22.0
N7	Jhenaidah-Jessore	45.0	23	23	25.2
N7	Jessore-Khulna	61.0	4	5	2.1
N8	Mutafapur-Barisal	59.5	7	7	15.3
N8	Barisal-Patuakhali	38.0	6	9	25.5
N6	Dasuria-Natore	40.2	41	67	76.7