AFRICAN DEVELOPMENT FUND

PROJECT COMPLETION REPORT

MCHINJI-KASUNGU-MSULIRA ROAD PROJECT

REPUBLIC OF MALAWI

TRANSPORT DIVISION
INFRASTRUCTURE DEPARTMENT-NORTH, EAST & SOUTH REGION
OCTOBER 2005

EQUIVALENTS AND ABBREVIATIONS
CURRENCY EQUIVALENTS

			PCR	Appraisal
1 UA	=	MK	166.90	3.76750

WEIGHTS AND MEASURES

1.00 meter (m)	=	3.281 ft.
1.00 kilometre (km)	=	0.621 mile
1.00 square kilometre (km^2)	=	0.386 square mile (mi^2)
1.00 hectare (ha)	=	2.471 acres
1.00 kilogram (kg)	=	2.205 lbs.

FISCAL YEAR : 1st July – 30th June

ABBREVIATIONS

AADT	=	Average Annul Daily Traffic
ADB	=	African Development Bank
ADF	=	African Development Fund
CRD	=	Central Road Division
EA	=	Executing Agency
EIRR	=	Economic Internal Rate of Return
EU	=	European Union
FE	=	Foreign Exchange
GOM	=	Government of Malawi
HDM	=	Highway Development and Management
ICB	=	International Competitive Bidding
LC	=	Local Cost
MIS	=	Management Information System
MOW	=	Ministry of Works
MOTW	=	Ministry of Transport and Works
NRA	=	National Roads Authority
NPV	=	Net Present Value
ROMAC	=	Roads Maintenance and Construction
TA	=	Technical Assistance
VOC	=	Vehicle Operating Cost

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LIST OF ANNEXES

MALAWI
MCHINJI-KASUNGU-MSULIRA ROAD PROJECT
PROJECT COMPLETION REPORT: PROJECT MATRIX

Design Team: DR Rao & D. Gebremedhin

Narrative Summary	Verifiable Indicators		Means of Verification	Assumptions/ Risks
	Reappraisal (1997)	PCR (2005)		
Sector Goal 1.1 Upgrading of essential road network in central region of Malawi.	1.1 Increase in the upgraded/ rehabilitated national/ rural roads in the country. 1.2 Overall growth in traffic.	1.1 During 1993-2005, total length of the road network increased from 11,751 km to 15,451 km 1.2 Traffic on the road network is increasing by 3% per year.	1.1 Annual road construction and pavement evaluation data from MOW. 1.2 Traffic Statistics 1.3 Annual Road Condition Surveys.	**(Goal to Super goal)** **Adequate Government commitment**
Project Objective 2.1 To increase transport service levels and road safety by improving road surface conditions to reduce vehicle operating costs and to improve Roads Department staff capabilities.	2.1 Increase in the number of trained engineers 2.2Improved operations in Road Dept. 2.3. Increase in vehicle traffic by 4-6% per year	2.1. Five road engineers/ planners successfully trained 2.2 With the on-the-job and academic training of road engineers/ planners, the NRA is now capable of managing the road construction/ maintenance programs. 2.3 The 2005 PCR traffic estimate is 7% and 12% higher than the Appraisal estimate of Michinji-Kasungu and Kasungu – Msulira sections respectively. 2.4 VOC reduced by 22% in the year 1999 when the road is opened to traffic.	2.1. Annual performance audit reports of NRA 2.2 Calculate VOC using Highway Development and Management Model. 2.3 Measure roughness 2.4 NRA traffic survey.	**(Project Objective to Goal)** 2.1 Maintenance effectively carried out. 2.2 Measures are instituted by Malawi Govt to minimize non-transport barriers and harmonize axle loads.
Outputs 3.1 Upgraded two lane bitumen standard road between Mchinji and Msulira completed 3.2 Trained road engineers/planners	3.1 138 km 2-lane bitumen surfaced road completed between Mchinji and Msulira by the end of 1997. 3.2 On the job training of 5 highway engineers/ transport planners	3.1 138 km 2-lane bitumen surfaced road completed between Mchinji and Msulira by April 1998. 3.2 Five highway engineers/ transport planners trained.	3.1 Progress Reports from the Borrower and Bank supervision missions 3.2 Borrower's PCR 3.3 Final Completion Report	(Output to Project Objective) 1. Availability of counterpart funds
Activities **4.1 Civil Works** a) Procurement of supervision consultant and civil works contractor b) Actual upgrading of the project road and supervision **4.2..Techical Assistance** a) Procurement of consultants for T.A. services and carrying out the studies. b) Actual conduct of the T.A. services and studies.	**Inputs/Resources** **Inputs (UA million)** Civil works 18.61 Supervision 1.46 Tech. Asst. 0.92 Contingencies. Physical & Price 5.52 Total **26.51** **Resources (UA million)** ADF 21.70 GOM 4.81 Total **26.51** **EIRR (%) = 19**	**Inputs/Resources** (1) **Inputs (UA million)** Civil Works 23.34 Supervision 1.53 Tech. Asst. 0.57 Total **25.44** **Resources (UA million)** ADF 19.41 GOM 6.03 Total **25.44** **EIRR (%) = 20.6**	4.1 Appraisal Estimates. 4.2 Quarterly Progress Reports 4.3 Supervision Reports 4.4 Final Completion Report 4.6 Borrower's PCR 4.5 Disbursement Records	4.1 All procurement actions are on schedule. 4.2 Payments for invoices are not delayed and there are no cost overruns. 4.3 GOM to ensure timely payment of counterpart funds. 4.4 Effective supervision by the Bank, Consultant and MOW/ NRA.

- Project Matrix was not presented in the Appraisal Report. The above is a retrospective Matrix.

BASIC PROJECT DATA

1. Country : Malawi
2. Project : Mchinji-Kasungu- Msulira Road Project
3. Loan Number : 2100150000685 – Original Loan (OL)
   2100150000691- Supplementary Loan (SL)
4. Borrower : Government of Malawi
5. Beneficiary : Government of Malawi
6. Executing Agency : Ministry of Works (MOW)

A. LOAN DETAILS

Description	At Re-Appraisal	Actual
1. Loan (Original and Suppl) Amount in UA million	ADF 21.70	ADF 19.41
2. Service Charge	0.75% per annum on amounts disbursed and outstanding.	
3. Repayment Period	40 years	
4. Grace Period	10 years	
5. Repayment	1% of the principal each year from the eleventh to twentieth year inclusive and 3% each year thereafter.	
6.Loan Negotiation Date		
7. Loan Approval Date		18-12-1990 (OL) 02-10-1997 (SL)
8. Loan Signature Date		31-01-1991 (OL) 25-03-1998 (SL)
9.Date of Entry into Force		28-02-1991 (OL) 05-05-1998 (SL)

B. PROJECT DATA

1. Project Cost

Item of Cost	Project Cost (in UA million)	
	At Re-Appraisal	Actual
Foreign Exchange Component	21.57	19. 28
Local Cost Component	4. 94	6. 16
Total Cost	**26.51**	**25. 44**

2. Source of Finance

Source of Finance	In UA Million							
	At Re-Appraisal				Actual			
	F.E.	L.C.	Total	%	F.E.	L.C.	Total	%
ADF	21.57	0.13	21.70	82	19.28	0.13	19.41	77
GOM	-	4.81	4. 81	18	-	6.03	6.03	23
Total	**21.57**	**4.94**	**26.51**	**100.0**	**19.28**	**6.16**	**25.44**	**100**

		Appraisal	Actual
3.	Effective Date of First Disbursement:	-	10 Apr. 1993
4.	Effective Date of Last Disbursement:	31 Dec. 1998	31 Dec. 2001
5.	Commencement of Project:	Jan. 1991	Jan. 1991
6.	Completion of Project	Sept. 1996	Aug. 1999

C. PERFORMANCE INDICATORS

1.	Cost Under-run	:	4. 04%
2.	Time Overrun	:	34 months
	* Slippage on Effectiveness (%)	:	0%
	* Slippage on Completion Date	:	155%
	* Slippage on Last Disbursement	:	300%
	* Number of Extensions of Loan Validity Period	:	2
3.	Project Implementation Status	:	Completed

4. List of Verifiable Indicators and Levels of Achievement

Evaluation Criterion	Score	
	Maximum	Actual
1. Time Overruns	4	2
2. Cost Overruns	4	3
3. Adherence to Contractual Conditions	4	3
4. Adequacy of Supervision and Reports	4	3
5. Operational Performance	4	3
Total Score	**20**	**14**

5. Implementation Performance

*	Institutional Performance	:	Satisfactory
*	Consultant's Performance	:	Satisfactory
*	Contractor's Performance	:	Satisfactory

6. Economic Internal Rate of Return (EIRR):

Appraisal	:	43%
Re- Appraisal	:	19%
Actual	:	20.6 %

D. MISSIONS

Project Cycle	M/Y	Numbers of Persons	Composition	Man Days
1. Identification	-	-	-	-
2. Preparation	-	-	-	-
3. Appraisal	08/1990	2	T.E, T.Enr	28
4. Follow up	11/1992	2	HARO Officers(2)	12
5. Supervision	11/1992	1	T.Enr	14
	05/1993	1	T.Enr	11
	02/1995	2	T.E, T.Enr	34
	10/1995	2	T.E, T.Enr	14
	06/1996	2	T.E, T.Enr	28
	06/1997	2	T.E T.Enr	10
	01/1998	2	T.E, T.Enr	24
	09/1998	2	T.E, T.Enr	26
	02/1999	2	T.E, T.Enr	24
	09/2001	2	T.E, T.Enr	24
	02/2002	2	T.E, T.Enr	12
	11/2002	2	T.E, T.Enr	12
6.PCR	08/2005	3	T.E, T.Enr (2)	52

T.E: Transport Economist, T. Enr: Transport Engineer; HARO: Harare Regional Office

E. BANK LOAN – DISBURSEMENTS (UA MILLION)

Year	As at Re-Appraisal		Actual	
	Amount	Cum. (%)	Amount	Cum. (%)
1991	0. 55	2.53	-	-
1992	2.77	15.29	-	-
1993	3.37	30.82	0.86	4.4
1994	3.73	48.02	4.57	27.9
1995	3.27	63.08	3.60	46.5
1996	1.41	69.58	3.57	64.9
1997*	3.50	85.71	2.16	76.0
1998	3.10	100.00	2.79	90.4
1999	-	-	0.37	92.3
2000	-	-	1.49	100.0
Total	**21.70**	**100.00**	**19.41**	100.0
*** Supplementary Loan was approved and signed for UA 6.60 million**				
Un-disbursed Loan Balance Cancelled			**2.29**	

F. CONTRACTOR

Name	:	Impresa Ing. Fortunato (Italy)
Contract Description	:	Construction of Mchinji- Kasungu- Msulira Road (in two sections) in four districts of Central region of Malawi
Date Contract Signed	:	April 1994
Date Contract Completed	:	April 1998
Contract Duration	:	54 months
Amount	:	MK 115.425 million

G. (a) CONSULTANT (Supervision works)

Name	:	Delcan Int Corporation (Canada)
Contract Description	:	Supervision of Works
Date Contract Signed	:	July 1992
Date Contract Completed	:	August 1999
Contract Duration	:	85 months
Amount	:	CAN $ 3. 3425 million

(b) CONSULTANT (Technical Assistance)

Name	:	CODA and Partners (USA)
Contract Description	:	Technical Assistance
Date Contract Signed	:	April 1993
Date Contract Completed	:	October 1994
Contract Duration	:	19 months
Amount	:	US $ 794336

EXECUTIVE SUMMARY

1. INTRODUCTION

1.1 The Republic of Malawi is a small agricultural and landlocked country with 119,140 km^2 land area of which 20% is water. Being a landlocked country, the Government's Development policies (1987- 1996), reflected a change with emphasis to maintenance and upgrading of the road network. As a follow up of this, GOM embarked upon a systematic programme to upgrade and improve the country's transport network and thereby encourage the continued development of the nation's economy. The section from Mchinji (close to the Zambia border) to Msulira through Kasungu connecting to Nkhotakota on the lake shore, was one of the corridors identified as priority for upgrading the existing gravel road to a class I bitumen surface to cater for the increased traffic needs.

1.2 In September 1985, the Bank financed the feasibility and detailed engineering design of the project and the project was appraised in August 1990 by a team of two experts comprising a Transport Engineer and a Transport Economist. The loan conditions were negotiated and there were no issues of disagreement raised by the Bank or the Borrower concerning the project. The loan amount of ADF: UA 15.10 million was approved on 18th December 1990, and signed on 31st January 1991. Due to increase in cost of materials during implementation, additional funds through a Supplementary loan for an amount of UA 6.60 million was approved in October 1997, to meet the additional costs of construction and supervision for completion of the project.

1.3 This Project Completion Report (PCR) is based on the appraisal report, project files in the Bank, Borrower's quarterly progress reports and PCR, interviews and site inspection conducted during an ADB mission to Malawi in August 2005.

Project Objective and Description

1.4 The project objectives at appraisal were to increase transport service levels and road safety by improving road surface conditions to reduce vehicle operating costs and to improve the Roads Department Staff for project preparation and Management.

1.5 The project at appraisal comprised three components:

(i) Construction of Mchinji-Kasungu- Msulira Road (two sections of the Mchinji-Nakhotakota road) an existing gravel road of 128 km to Bitumen standard of 6.7 m in width with two 1.5m shoulders;
(ii) Consultancy services for pre-construction contract services and the supervision of construction works; and
(iii) Consultancy services for Institutional strengthening of the Roads Department.

1.6 The Project objective did not change at re-appraisal, and the contracted length of the project road was 138 km instead of 128km.

1.7 The arrangement for consulting services remained the same as in the original project at appraisal (see para 2.2.1).

Project Execution and Implementation Schedule

1.8 The project was executed by Ministry of Works though its Road Department. A qualified and experienced engineer from the Roads Department was designated to act full time as Project Coordinator. A consulting firm supervised the construction work that was executed through a contract.

1.9 The implementation period envisaged for the construction works at the original appraisal was 45 months with completion of physical works by October 1995 followed by 12 months defects liability period. Commencement of the project was delayed due to re-design with changed requirements of the Borrower, and the works physically commenced in April 1994. Some other factors also contributed for further delays in the completion. Due to escalation of unit rates, the project was re-appraised and a supplementary loan was approved in order to meet the additional costs. With re-appraisal, the physical completion of works of the project was re-scheduled for December 1997. However, the works were finally completed in May 1998, with an overall delay of 34 months.

1.10 The Consulting services for supervision commenced in August 1992 and continued until the end of the completion of project works, i.e. August 1999. Consultancy services for the Technical Assistance component of the project commenced in August 1991 and were completed in October 1994. The implementation schedule is presented in Annex 2.

1.11 Even though the completion of the project was delayed, the final product output was well executed.

Project Costs and Financial Resources

1.12 The total project cost (net of taxes) was UA 18.46 million including contingencies. At re-appraisal, the total cost was estimated at UA 26.51 million including contingencies. The actual cost of the completed project was UA 25.44 million. A summary of the project costs at re-appraisal and actual is shown in Table 3.1 (Detailed project costs as re-appraised and actual are presented in Annex 3). There was a cost under run of about UA 1.07 million.

1.13 The project was jointly financed by ADF and GOM. Actual ADF financing of the project costs at completion amounted to UA 19.41 million. A loan savings of UA 2.29 million was realized after completion and the Bank with the consent of the Government cancelled the loan balance. A summary of project financing as re-appraised and actual is given in Annex 4.

Overall Assessment

1.14 In spite of delays in project implementation, a well designed 2-lane class I bitumen surfaced road between Mchinji and Msulira has facilitated significant reduction in vehicle operating cost, travel time and road accidents.

Economic Performance

1.15 The traffic projection at appraisal has been revised taking into account the 1998 and 2001 traffic counts. The traffic growth projection at re- appraisal was 6% for the period 1994 – 1997 and 4% for 1998 – 2017. The traffic growth projection in the PCR has been taken as 3% for the periods from 2001 to 2017. The 1998 traffic count shows an AADT of 317 and 184 for Michinji - Kasungu and Kasungu - Msulira sections respectively. These indicate 5 % increase on Michinji - Kasungu and 3 % on Kasungu – Msulira road sections over the reappraisal estimate. The 2001 traffic counts has AADT of 409 for Michinji – Kasungu and 235 for Kasungu – Msulira, i.e., 9% and 16% increase over the reappraisal estimate respectively. The 2005 PCR estimate when compared with the reappraisal estimate shows 7% and 12% increase on Michinji - Kasungu and Kasungu - Msulira road sections respectively. The recalculated EIRR is 20.6 % (Annex 5). This compares with 19.0 % at re- appraisal in 1997 is marginally higher due to above mentioned traffic growth. This EIRR of 20.6 % is high when compared with 12%, the opportunity cost of capital in Malawi.

2. CONCLUSIONS, LESSONS AND RECOMMENDATIONS

Conclusions

2.1 The overall objective of the project has been achieved. The project has reduced road transport costs and passenger travel time on the Mchinji -Msulira corridor road. The constructed road has been found to be safe in driving and is environmentally protected.

Lessons Learned

2.2 Lessons from the project are:

- This project has reinforced the earlier lessons learned by the Bank on the implementation issues. A preparation mission before appraisal would have been more useful, as this could have assisted the Borrower in resolving many issues before the implementation;

- The retention of the original design consultant for supervision of works would have saved time and additional costs. However, this has not been the case in this project, even though provision exists in the Bank's procurement rules to consider retaining the same consultant who did the detailed design for the supervision in order to avoid changes/modifications to the original project design (para 4.6.1);

- Borrowers should clearly indicate their geometrical and technical requirements for any road project before undertaking the detailed designs, instead of bringing them just before the commencement of the project; this would avoid re-designing (involving additional costs with revision to the bidding documents) and minimise the implementation delays (para. 3.2.1);

- Trained professional staff (under the Bank's loan proceeds) leaving the organization affected its institutional capacity in the management of road sector development programmes;

- Inadequate institutional capacity for review of design and monitoring of the project during implementation resulted in cost over-runs;

- Conducting a technical and financial project audit (which was not included in this project) would have been useful to identify and resolving issues for smooth implementation (para. 3.4.2);

- Obtaining information/data from the Borrower/Executing Agency for the projects that were completed long ago was noted to be source of problem, since project records were not available.

- During implementation, it appears that the Bank was cooperative in agreeing to the changes in the project. While a cordial relationship is welcome, the lesson being that the Bank should adopt this flexibility in appropriate circumstances.

Recommendations

2.3 In view of the above, it has been recommended that:

(i) For the Borrower

- For future projects, as far as possible consider retaining the same consultant who carried out the detailed design for supervision of works, in order to avoid additional costs and delays in project completion;
- For future projects of such magnitude, borrower should indicate firm requirements at the initial stages of the design, to avoid re-designing before commencement of the project;
- Make efforts to undertake and rectify the defects observed during the field inspection of the completed project to preserve the investment;
- To commit and conduct on regular basis annual national traffic counts for efficient road planning and project evaluation;
- Appropriate measures for retaining the trained professional (under the Bank loan proceeds) should be taken by way of bonding for a period of at least three years to service the institution;
- Should comply with the requirements of the General Conditions of Loan Agreement in respect of conducting and submission of annual Audit Reports of the projects;
- Make efforts to maintain proper records/ documentation for the completed projects (irrespective of their time of completion), for easy reference of visiting Bank missions.

(ii) For the Bank

- Visiting Bank missions for the projects to have a dialog with the Borrower and stress the advantage of considering the same design consultant for supervision of works, in line with the Bank's procurement guidelines;
- For future projects, it is preferable and advisable to undertake preparatory missions to resolve the pertinent issues relating to the project before appraisal;
- Bank missions to follow up with the Borrowers' on the submission of annual project audit reports on regular basis, in accordance with Bank's General conditions of Loan agreements.
- Bank to undertake PCRs for the completed projects as early as possible, so that necessary documentation/ data on the project would be available for reference and inclusion in the report.

1. INTRODUCTION

1.1 The Republic of Malawi is a small agricultural and landlocked country with 119,140 km^2 land area of which 20% is water. It is situated in the east- central part of Africa and has common borders with Mozambique in the east and south-west, the United Republic of Tanzania in the north and north-west (Annex 1). The total population of the country as per 2005 estimates was 12.5 million and growing at an average annual rate of 2.14%. The project area serving rich agricultural region, has a varied topography from flat to gently undulating with the road traversing four districts of central region of Malawi and is located between Mchinji close to the Zambian border, through Kasungu to Nkhotakota on the lake shore.

1.2 Malawi possesses four modes of transport for both external and internal communications, of which roads play a dominant role. The four modes are: (i) a road network of about 15,451km, (ii) 678km of railways, (iii) four lake harbours and (iv) four commercial airports. At the time of the project appraisal, Malawi had about 11,751 km of classified roads, of which 2,410 km (20 %) paved, 603 are engineered gravel standard and about 8737 km unclassified feeder roads. Most of them had deteriorated due to lack of maintenance.

1.3 Being a landlocked country, the Government's Development policies (1987- 1996), reflected a change with emphasis to maintenance and upgrading of the road network. As a follow up of this, GOM embarked upon a systematic programme to upgrade and improve the country's transport network and thereby encourage the continued development of the nation's economy. The Bank Group's intervention in the transport sector in Malawi dates back to December 1974. The Bank has to date, approved a total of 15 loans in the transport sector, viz. 9 projects (including one Supplementary loan) in road sub-sector and 3 in the airport sub-sector, apart from three studies (two in Road and the other in air transport). Fourteen out of fifteen projects (8 in the road sector and 3 in air sub-sector and 3 studies) have been successfully completed and one project in the road sector is under implementation.

1.4 The economic feasibility study and detailed engineering design of the project was carried out through financing by the Bank in September 1985 and the reports were submitted to the Bank in August 1989. The Bank reviewed and found the reports acceptable. A Bank mission visited Malawi in August 1990 to appraise the project. The loan was approved by the Board in December 1990 and was signed in January 1991 for an amount of FUA 16.39 million (UA 15.10 million). Due to increase in scope of works and inflation during implementation, additional funds through a Supplementary loan for an amount of UA 6.60 million was approved in October 1997, to meet the additional costs of construction and supervision for completion of the project.

1.5 This Project Completion Report (PCR) is based on the appraisal report, project files in the Bank, Bank, Borrower's quarterly progress reports and PCR, interviews and site inspection conducted during an ADB mission to Malawi in August 2005.

2. PROJECT OBJECTIVES AND FORMULATION

AT APPRAISAL

2.1 Project Objectives

The objectives of the project were: i) to increase transport service levels and road safety by improving road surface conditions so as to reduce vehicle operating costs; (ii) to improve Roads Department Staff for project preparation and management.

2.2 Description

2.2.1 The project consists of the following components:

(i) Construction of Mchinji-Kasungu- Msulira Road (two sections of the Mchinji-Nakhotakota road) an existing gravel road of 128 km to bitumen standard of 6.7 m in width with two 1.5m shoulders;

(ii) Consultancy services for pre-construction contract services and the supervision of construction works; and

(iii) Consultancy services for Institutional strengthening of the Roads Department.

AT RE-APPRAISAL

Project Objectives

2.2.2 The project objectives remained the same as in the original project (para 2.1.1)

Project Description

2.2.3 The total contracted length amounted to 138 km instead of 128km. The specifications followed for the additional length were the same as the original appraisal.

2.3 Formulation, Evaluation and Approval

2.3.1 The project was identified by the GOM in 1985 being the shortest route for transportation of domestic products connecting the commercial centres of Mchinji and Kasungu, as well as transportation of export/ import goods between Malawi, Zambia, Zimbabwe and South Africa. Since the existing road sections between Mchinji and Msulira were of gravel standard, rapid deterioration under heavy traffic during the dry season and slippery nature during wet season was noted due to weak base support. In order to overcome this problem, GOM had given priority for improving the road sections and requested the Bank for financing the feasibility and detailed engineering studies. In September 1986, Bank approved TAF funds for undertaking the studies.

2.3.2 The feasibility and detailed engineering design reports were completed in January 1990, which recommended construction of the Mchinji- Kasungu- Msulira Road sections from gravel to bitumen standard.

2.3.3 In March 1990, GOM formally requested the Bank for financing the two sections of the Mchinji- Msulira road. Consequently, an appraisal mission comprising a Transport Economist and a Transport Engineer (consultant) visited Malawi in August 1990. The loan conditions were negotiated and there were no issues of disagreement raised by the Bank or the Borrower concerning the project. The ADF loan amount of FUA 16.39 million (UA 15.10 million) was approved on 18 December 1990, and the loan was signed on 31 January 1991.

3. PROJECT EXECUTION

3.1 Effectiveness and Start-up

The Original Loan was approved on 18 December 1990, signed on 31 January 1991 and declared effective on 28 February 1991, while the Supplementary Loan was approved on 2 October 1997, signed on 25 March 1998 and declared effective on 5 May 1998. In accordance with Clauses 9.01 and 15.01 of the General Conditions Applicable to Loan Agreement and Guarantee Agreement, no slippages were noted for both loans either on the loan signature or on the loan effectiveness.

3.2 Modifications

3.2.1 In the course of the project implementation, some modifications were effected which are given hereunder:

(i) Technical (Design)

During review by the appointed supervision consulting firm, some deficiencies particularly in respect of drainage works were noted in the detailed design prepared by the original design consultant. The original design was based on a right of way (road reserve) of 36m which was found to be inadequate and was subsequently increased to 60m. This increase in the width necessitated a re-design to the road drainage works. As a part of the pre-contract services, the supervision consultant prepared fresh designs for drainage works and all other deficiencies noted in the original design. The new design concept for drainage works had taken into account the need to enhance the protection of the environment.

In addition, it was also noted during start up of the project the top soil (overburden) thickness was under estimated in the original design and this necessitated an increase in the earthwork quantities and consequent revision to the original tender documents.

(ii) Scope of Project Works

The appraised length of the project road (Mchinji- Kasunga and Kasunga- Msulira) was 128 km, which was later increased to 138 km due to addition to the scope of works.

3.3 Implementation Schedule

3.3.1 The Project was executed by the Ministry of Works (MOW) through its Roads Department. A qualified and experienced engineer from the Roads Department was designated to act full time as Project Coordinator. A consulting firm supervised the construction work that was executed through a contract.

3.3.2 The implementation period for the construction works envisaged at the original appraisal was 45 months commencing from January 1992. Due to re-design, the works commenced in April 1994, a start up delay of 28 months. During execution, several other factors contributed for further delays, such as, national strikes in 1994 and 1995 with no warnings, payment delays (which retarded the progress) and inclement weather conditions, all of them led to substantial delays including suspension of works. During re-appraisal of the project in June 1997, the progress of the works was reviewed in detail and the physical completion of works of the project was re-scheduled for December 1997 with 12 months maintenance liability period. The construction works were however physically completed in May 1998, i.e. a further delay of 6 months in addition to start up delay 28 months, thus making a total delay of 34 months.

3.3.3 Consultancy services for supervision commenced in August 1992 and continued until the completion of project works, i.e. August 1999. Consultancy services for the Technical Assistance component of the project which was to commence originally in August 1991 (with a completion period of 7 months, February 1992) however commenced in April 1993, i.e. 20 months later and was completed after 18 months, i.e. October 1994, registering thus a total delay of 34 months from the original completion date.

3.3.4 Even though the completion of the project was delayed, the final output was well executed. The re-design undertaken at the start up of the project benefited the road users with improved facilities. Annex 2 shows the implementation schedule at Appraisal, Re-appraisal Vs Actual.

3.4 Reporting

3.4.1 The implementation of the project was monitored through monthly progress reports prepared by the consultants and quarterly progress reports prepared by the Government in the Bank's format. In addition, the project was monitored through regular Bank's supervision missions.

3.4.2 Pursuant to the provisions of the General Conditions of the Loan Agreement, the GOM submitted quarterly progress reports, the final Consultant's construction report and the Borrower's PCR. The contents of the progress reports in terms of keeping the Bank informed continuously of the project status, was satisfactory. It was noted that annual Audit Reports were not submitted to the Bank by the borrower as required under the loan agreement. However, a summary of the findings of the final audit report for the project was forwarded to the Bank in December 2002 after the completion of the project.

3.5 Procurement

Consultancy Services

3.5.1 The supervision consulting firm for the construction works, M/s Delcan International of Canada and consultant for technical assistance component were selected through a shortlist of qualified firms in accordance with Bank's procurement guidelines for the use of consultants. The Bank approved the recruitment process and contract for consultancy services was awarded to M/s Delcan International of Canada in August 1992 for the supervision of the project. The technical assistance consultancy was awarded to M/s CODA and Partners (USA) in March 1993.

Civil Construction Works (Mchinji- Kasungu and Kasungu- Msulira Sections)

3.5.2 The Construction Works contract for the project was procured on the basis of International Competitive Bidding procedures (ICB) with pre-qualification of contractors. The contracts for both sections of the project were awarded to the lowest evaluated bidder M/s Impressa Ing. Fortunato Federici SpA of Italy in May 1994.

3.5.3 The Executing Agency (EA) followed the Bank's *Rules of Procedure for Procurement of Goods and Works*, and there were no disputes or complaints related to the procurement of the project components.

3.6 Financial Sources and Disbursements

Project Costs

3.6.1 In 1990 at appraisal, the project cost (net of taxes) was estimated at UA 18.46 million (including contingencies) of which the foreign exchange component was UA 15.00 million and the balance of UA 3.46 million was the local cost. Due to inflation and increase in scope of works, the original project costs were revised and a supplementary loan was approved after re-appraisal. At re-appraisal, the total cost was estimated at UA 26.51 million (including contingencies) of which the foreign exchange component was UA 21.57 and the balance UA 4.94 was the local cost. The actual total cost of the completed project was UA 25.44 million of which the foreign exchange component was UA 19.28 million and the remaining UA 6.16 million was the local cost. A summary of the project costs at re-appraisal and actual is shown in Table 3.1 below and details in Annex 3. Overall there was a cost under run of about UA 1.07 million

Table 3.1: Summary of Project Costs at Re-Appraisal and Actual
(UA Million, net of taxes)

Component	Re-Appraisal			Actual			Difference		
	F.E.	L.C.	Total	F.E.	L.C.	Total	F.E.	L.C.	Total
A. Civil Works	18.88	4.23	23.11	17.48	5.86	23.34	-1.40	+1.63	+0.23
B. Supervision	1.92	0.56	2.48	1.23	0.30	1.53	-0.69	-0.26	-0.95
C. Tech.Assistance	0.77	0.15	0.92	0.57	-	0.57	-0.20	-0.15	-0.35
TOTAL	**21.57**	**4.94**	**26.51**	**19.28**	**6.16**	**25.44**	**-2.29**	**+1.22**	**-1.07**

Financial Resources

3.6.2 The project was jointly financed by ADF and GOM. The estimated cost at re-appraisal and actual expenditures (in UA terms) by source of finance using historical exchange rates in the computation of local costs is presented in Table 3.2. As can be seen from the table that there is a change in the overall financing plan with ADF's contribution reduced from 82% to 77%, but GOM's contribution increased from 18% to 23%. The final completion cost of the project indicated a cost underrun of UA 1.07 million relative to the reappraisal estimate. The balance amount of UA 2.29 million realized under ADF loan has been cancelled. It is significant to note that the increase in local costs was mainly due to devaluation of the local currency, which was totally absorbed by the Government.

Table 3.2: Financing Plan – Re-Appraisal versus Actual
(UA million)

Source of Finance	Re-Appraisal				Actual				Difference		
	F.E.	L.C.	Total	%	F.E.	L.C.	Total	%	F.E.	L.C.	Total
ADF	21.57	0.13	21.70	82	19.28	0.13	19.41	77	-2.29	-	-2.29
GOM	-	4.81	4.81	18	-	6.03	6.03	23	-	1.22	1.22
Total	**21.57**	**4.94**	**26.51**	**100**	**19.28**	**6.16**	**25.44**	**100**	**-2.29**	**+1.22**	**-1.07**

Disbursements

3.6.3 The loan funds were disbursed by direct method to the contractor and consultants. However, the slippage in the implementation schedule significantly affected the disbursement schedules. The disbursements which were to commence in 1991 at appraisal, did not however actually start until 1993. The loan amount, as per the original appraisal schedule, was to be fully disbursed during 1991-1996, but due to start up delays in the project implementation, the first disbursement on the ADF loan was effected in April 1993 and the last disbursement took place in June 2000. It was noted that some payments to the contractor/ consultants during implementation were delayed, giving them opportunity to lodge claims relating to the interrupted cash flow. Annex 4 presents the disbursement profile at re-appraisal Vs actual.

4. PROJECT PERFORMANCE AND RESULTS

4.1 Overall Assessment

The loan covenants /conditions were appropriate and valuable to the execution of the project. The success of the project itself is evidence that the loan conditions were sensible and no more additional conditions were necessary. The Government had no difficulty in fulfilling the stipulated loan conditions for the loan to be effective.

4.2 Operating Results

Civil Works

4.2.1 The completed project road of 138 km was fully opened to traffic in May 1998. During field inspection of the project road 7 years after its completion, it was noted that the workmanship and overall quality of work executed by the contractor was satisfactory and the upgraded road is generally in good condition with no signs of distress in terms of pavement structure, vertical and horizontal alignment and drainage. The constructed road followed the standard geometrics and specifications and was able to meet the requirements of providing a safe, faster and smooth riding surface with an all weather bitumen road between Machinji and Msulira. Regular maintenance on this road is being carried out as mentioned in para.6.2.

4.2.2 Some minor defects that were noted during field inspection of the completed road include: (i) isolated pot holes along the route, (ii) corrosion of Armco steel drainage pipes due to water stagnation

and (iii) some missing road furniture at some bridge locations. These were however brought to the attention of the GOM for immediate remedial actions in order to protect the investment.

Technical Assistance

4.2.3 Five qualified counterparts from the Ministry were trained under the project for a period of 18 months in the fields of Highway Planning and Design, Materials Testing, Bridge Design, Economic Analysis and Surveying. The training provided by the selected Consulting firm (M/s CODA and Partners) strengthened the Government's capability in the transport sector programmes in planning and design, preparation of contract documents and project economic evaluation activities.

Traffic

4.2.4 The Road Planning Unit of the Ministry of Works used to conduct nation wide annual traffic counts until the establishment of the NRA in 1999 and the restructuring of the road sector. No historical traffic data of the project road is available, since no nationwide traffic counts were undertaken (except in 2001 using a consultant). NRA, being aware of the importance of a time series traffic data for road planning and project evaluations, has planned to conduct continuous annual traffic count twice (dry and wet season) a year starting from 2005 – 2006 budget year.

4.2.5 At appraisal, the traffic projection indicated that the two sections of the project road will have an annual growth rate of 5 % per annum. During re-appraisal, the traffic was projected to increase by 6 % between 1994 – 1997 and then decline to 4% per annum till 2017, the end of the useful life of the project. The traffic counts of 1998 and 2001 have divided the project road into two traffic links with fairly homogenous traffic levels and vehicle composition, namely: Michinji (Kamwendo) to Kasungu (M1 Junction) and Kasungu to Msulira. The 1998 traffic count shows an AADT of 317 and 184 for Michinji - Kasungu and Kasungu - Msulira sections respectively. These indicate 5 % increase on Michinji - Kasungu and 3 % on Kasungu – Msulira road sections over the reappraisal estimate. The 2001 traffic counts has AADT of 409 for Michinji – Kasungu and 235 for Kasungu – Msulira, i.e., 9% and 16% increase over the reappraisal estimate respectively.

4.2.6 In the PCR, the traffic along the project road has been estimated using the two nationwide traffic counts of 1998 and 2001 and the review of feasibility studies conducted by consultants for the NRA. The consultants have used growth of the vehicle fleet, agricultural production, fuel consumption and population to get an indication of the traffic forecast in their project roads, complemented by ad hoc traffic counts. A traffic growth rate of 3 to 5% is being adopted by NRA on main roads of the country, and the same percentage growth has been considered for the traffic projection in the PCR. The 2005 PCR estimate when compared with the reappraisal estimate shows 7% and 12% increase on Michinji - Kasungu and Kasungu - Msulira road sections respectively. This presents a high-motorized traffic induced by the construction of the road.

4.3 Institutional Performance

4.3.1 The Ministry of Works (MOW) through its Roads Department was responsible for implementation of the project. No changes occurred in the organisational structure of the Roads wing since the appraisal until the completion of the project. A qualified and experienced engineer from the Roads Wing of the MOW was designated as Project Coordinator for the implementation of the project. The designated Project Coordinator with the assistance of the appointed supervision consultant was given the overall responsibility for the implementation of the project including all procurements, apart from the day to day supervision of the construction works.

4.3.2 At the time of re-appraisal of the project in 1997, Government was in the process of adopting reforms in the road sector including new Institutional arrangements. A new institution the "National Roads Authority (NRA)" was established under these reforms and the operational functions of the Roads Department of the MOW was transferred to the newly created NRA with the Ministry retaining

the regulatory, strategic planning and policy issues. At the same time, the existing MOW was merged with Ministry of Transport and has been re- designated as Ministry of Transport and Works (MOTW).

4.3.3 The technical performance of Executing Agency during construction was satisfactory as supported by the quality of road completed. However, due to lack of proper institutional capacity for a review of the original design (increase in road reserve, drainage structures and pavement), led to a re-design of the project road, which substantially increased the project costs. The financial management of the project was noted to be unsatisfactory considering the fact that contractor had to press for regular payments of his Interim Payment Certificates. This situation led the contractor to slow down the progress and at one instance the contractor had even suspended the works due to delayed payments.

4.3.4 The Project coordinator had performed his functions to the satisfaction of the Bank and the Executing Agency. Effective contact was established between the Bank, Ministry, Consultants as well as the Contractor.

4.4 Management and Organisational Effectiveness

4.4.1 The Executing Agency at appraisal, re-appraisal and during the project implementation period was the Roads Department of the MOW. The MOW had a Commissioner for Works, with four departments, headed by Controllers; one of them was the Controller of Roads. The Controller was assisted by two deputies, for construction / maintenance and design /planning. The deputy controller of Roads for Construction / Maintenance administered the contracts and supervision of the project roads. The Road Department of MOW had sufficient experience and capacity to execute the road construction works. The technical units of the Controller of Roads were staffed by qualified Malawian and expatriates during the project implementation

4.4.2 At appraisal, MOW has been responsible for both planning and implementation functions of the projects in road sub-sector. With the objective of strengthening the road sub sector management capacity, the responsibilities of implementation and policy / strategy have been separated since the establishment of NRA in 1999. The Ministry became responsible for overall policy formulation and strategic planning of the transport infrastructure, while NRA has been made responsible for the road network operations, i.e. construction, maintenance, rehabilitation and development of the designated public (central, district and urban) roads. NRA, being a performance oriented semi-autonomous organization, is managed by qualified staff, and has the required skilled personnel to implement and monitor the road projects.

4.4.3 Currently, NRA is functioning with two major departments: Operations for road management and finance for mobilization of finances and accounting. As part of the drive for efficiency in the road sector, WB and EU are supporting GOM to restructure NRA. A study conducted on the functional review of the road sector institutions recommended that NRA functions should be separated in order to enhance transparency, openness, accountability so that the procurer and provider of services should be separate and operate under different management. The restructuring will set up an independent Road Fund (which is currently under the financial management of NRA) and allow the Roads Authority to focus on the delivery of maintenance and development programs.

4.4.4 The execution of the road project was however not affected by the institutional reforms that took place in 1999, since the project was completed in 1998.

4.5 Staff Recruitment, Training and Development

MOW's performance at appraisal and re-appraisal was satisfactory in terms of skilled technical staff to monitor the project. The Roads Department was staffed by qualified Malawians and expatriates. Of the total 122 professional posts, 18% was filled by expatriates. Four engineers and a transport economist were trained from the proceeds of this loan, as it was a condition precedent to first disbursement of the loan. Only one engineer is presently working in the NRA while the remaining four have left the Ministry. However, information on the staff recruitment and training of the Road Department during the project implementation period was not available, since the functions have been transferred to the NRA. So

far 140 posts out of 148 established posts were filled by NRA. Out of the 8 vacant posts, 4 are professional posts. In addition, due to the separation of the responsibilities of implementation and policy / strategy, some of the Ministry's qualified staffs have moved to NRA.

4.6 Performance of Consultants, Contractors and Borrower

Consultants

4.6.1 The overall performance of the consultant, M/s Delcan International of Canada for supervision of works was found to be satisfactory. The Consultant as part of their services had reviewed and suggested improvements to the initial design carried out by the original consultant (SWK & Partners). The Resident Engineer conducted regular field pavement tests as stipulated in the contract documents, to confirm to the specified requirements before incorporation in the works. Constant supervision of project works was undertaken at every stage to maintain quality of pavement works. Adding to this, the Consultant was regular in submitting progress reports to the EA for review and onward transmission to the Bank. Good coordination existed throughout the execution between the Consultant and the Contractor. Messrs CODA & Partners of USA provided an appropriate Technical Assistance in the relevant fields to the counterparts in the Roads Department. Even though, there was start up delay, the performance of M/s CODA & Partners, was noted to be satisfactory.

4.6.2 The Executing Agency maintained close working relationship with the selected supervising and technical assistance consultants during the course of the project implementation.

Contractor (M/s Impressa Ing. Federici SpA , Italy)

4.6.3 The contractor selected for the project had been active in Africa with several years of experience and executed many similar road projects in many countries. The technical performance of the contractor in the execution of works on the quality and workmanship was found to be satisfactory.

The Borrower

4.6.4 The Loan Agreement was signed by the Borrower on 31 January 1991 after 44 days of the approval. The performance of the Borrower in regard to speedy fulfilment of the only one loan condition for the loan effectiveness was satisfactory. The Borrower had submitted the quarterly progress reports regularly to the Bank.

4.6.5 The requirement of submission of annual audit reports for the project was however not met by the Borrower, in accordance with the General Conditions of Loans. At the end of project completion, a final Audit report containing the summary of the findings was submitted to the Bank. In conclusion, the performance of the Borrower can be rated as satisfactory.

4.7 Conditions/Covenants

The GOM fulfilled the stipulated one condition precedent to the entry into force of the Loan Agreement relatively in a short time (less than one month) of the loan signature and the loan was declared effective on 28 February 1991. All "other conditions" were however fulfilled during the period of implementation.

4.8 Economic Performance

4.8.1 At appraisal, the upgrading of the project road economic justification was carried out based on an assessment of a net incremental benefits by comparing with and without the project scenarios, discounted over 20 years economic life of the project. The economic costs included construction and supervision costs while the benefits are savings in the vehicle operating costs (VOC) and reduced maintenance costs. At appraisal, the construction work was expected to commence in January 1992 and completed September 1995. At re-appraisal, the project was expected for completion by December 1997 due to the need for additional funds to complete the project because of the increase in the cost of

construction and supervision. Based on the economic costs and road user benefits, the resulting economic internal rate of return of the upgrading of the project road as arrived at appraisal was 43% and then reduced to 19% at the re appraisal in 1997.

4.8.2 The estimates of project benefits were based on VOC and road maintenance cost savings with projected fixed rate of traffic growth of 9 % between 1998 to 2001 and 3 % per annum from 2002 -2017. The percentage of traffic growth is consistent with the traffic growth (3% to 5%) used for main roads by NRA. The 9% growth of 1998 to 2001 was taken from the actual traffic growth rate of the 1998 to 2001 traffic counts. Thus, the above traffic growth rates of the project road are assumed to be reasonable.

4.8.3 The economic analysis was conducted by converting the financial costs into economic terms by applying relevant conversion factors applicable in Malawi. The actual construction and supervision economic costs as well as the benefits emanating from the revised traffic forecasts, using the 1998 and 2001 traffic counts, formed the basis for re-evaluation of EIRR. The benefits include savings in VOC and maintenance costs and a 20% residual value.

4.8.4 The Highway Development & Management (HDM – 4) Model was used to calculate the maintenance costs and VOC and shows an EIRR of 20.6% and Net Present Value (NPV) of US$ 18.423 million at 12 % discount rate. (Annex 5). This EIRR of 20.6% compared with 19.0 % at re - appraisal in 1997 is marginally higher mainly due to the increase of the traffic mentioned above. This EIRR of 20.6 % is well above the opportunity cost of capital of 12%.

4.8.5 The project road is shorter by 90 km from the existing alternative paved road for passenger and cargo that originate from Kamwendo (Michinji) to Kasungu (M1 Junction). Kamwendo to M1 Junction via Lilongwe is 189 km, whereas the section Kamwendo (Michinji) to Kasungu (M1 Junction) of the project road is 98.4 km, a reduction of 90 km, which generates VOC and travel time savings. Thus travel time has reduced by one and half hour and transport costs by 24.2% (from Mk550 to 220 MK per passenger i.e., Mk2.91/ km to Mk2.24/km). In the Kasungu - Msulira section of the road, the minibus passenger rate has been reduced by 30%, from Mk3.23/km to Mk2.26/km. The travel time saving from the project road could be used for other productive purposes. In addition the availability of transport services has improved significantly.

4.8.6 The project road, being a part of an international route, i.e. east – west corridor linking Malawi to Zambia, Zaire and Tanzania via Nkhotakota, also supports regional integration.

5. SOCIAL AND ENVIRONMENTAL IMPACT

5.1 Social Impact

5.1.1 The upgrading of the project road has supported the social and economic recovery program and poverty alleviation mainly in the four districts of the central region of Malawi (Mchinji, Ntchisi, Kasungu and Nkhotakota) and to a lesser extent the neighbouring districts by providing quick access to social facilities and market. Principal agricultural products that grow in the zone of influence area of the first three districts of the project road includes maize, groundnuts and tobacco while in Nkhotakota, cassava, maize, groundnuts, cotton, sugarcane and rice are produced. The first three districts are well known for their tobacco production and most of the tobacco production estates are located along the project road. Even though actual information on the production of these agricultural products was not available, overall agricultural products and their prices have increased due to increased access to urban markets. The livestock population of the area is reported to have increased too.

5.1.2 The project roads have improved the access for development of social services like, domestic water supplies, rural health centres, education etc. These services are necessary to assure the well-being and development of people living in the project influence area, which were either insufficient or non-existent.

5.1.3 The gender benefit from the project could not be assessed due to lack of information. It was learnt that women were not employed as labourers during road construction due to cultural influences. But now employment of women in some trading centres, such as, hotel administration, retail traders, health services and education has been observed. The road upgrading has also improved transport services for access for women to markets and social, health and educational facilities at reduced cost.

5.1.4 The settlement pattern followed linear development along the road and the value of land along the project road trading centres has increased. Many trading centres have developed and the previously settled areas have further developed, providing the local people with manufacturing outputs in their neighbourhood. In the major trading centres, more shops, schools, health facilities, and hotels have been constructed or upgraded.

5.1.5 Accident statistics along the project road was not available. However, NRA reported that accidents noted along the route were minimal, even though vehicles travel at higher speeds due to the improvement of the riding surface of the project road.

5.2 Environmental Impact

At appraisal, no environmental studies were undertaken for the project since it was not mandatory. The upgrading work was confined solely to the existing alignment, and has no major physical intervention on the human and natural environment. All borrow pits and quarry sites in almost all places have been properly restored, except one borrow pit at Km 29+00 from Kamwendo. The GOM has been advised to restore it immediately. All the potential negative environmental impacts of the road project in terms of soil erosion and drainage system disturbances were mitigated during the project implementation by standard environmental engineering practice. Besides, for those living along the road, the bitumen surface has eliminated the dust created by traffic.

6. PROJECT SUSTAINABILITY

6.1 For the sustainability of the investment in the road sub-sector, NRA conducts proper maintenance and additional preventive measure like axle load control. The weighbridge located at Mchinji would prevent the overloading of trucks using the project road leading to Msulira. The sustainability of the project hinges on continued availability of funding for routine and periodic maintenance. To expedite administration and management of maintenance activities, NRA has two main divisions for implementation of routine maintenance programs, i.e., the Central Road Division (CRD), which is responsible for Main, Secondary and Tertiary Roads; and the Urban & District Roads Division, which is responsible for Urban and District Roads. Routine maintenance programs are carried out with funding from a fuel levy and other road user charges by contracting out to the private sector firms through either open tendering or short listing.

6.2 The project road routine maintenance is being handled and maintained in accordance with the GOM maintenance program by the CRD. GOM has introduced the fuel levy fund to ensure adequate provisions for the maintenance of the road network. The fuel levy has increased by 10 % per annum (from Mk 1.24 billion in 2002 to MK1.51 billion in 2004). It has been reported that the funds are not sufficient for periodic and routine maintenance. As such, the fuel levy has been raised to Mk8.70 per liter on petrol and Mk6.70 per liter on diesel from 6.75 and 4.75, an increase of 29% and 41% respectively as of November 2004. In terms of USD, the maintenance expenditure has decreased by 21% between 2002-2004. But the November 2004 fuel levy shows an increase of 5 % and 15% on petrol and diesel respectively, which will augment the maintenance expenditure. In order to get good return of the value of money on the investment, NRA has planned ahead for the periodic maintenance of the project road by 2008 – 2010 as shown in the Five Year Strategic and Business Plan of NRA.

6.3 On preventive level, axle load control plays a significant role in reducing repair and maintenance work on the road network, if effectively introduced. Thus NRA took over axle load control from the Road Traffic Department of the Ministry of Transport and Public Works in October 2003 in order to vigorously enforce vehicle weight limits and vehicle dimensions to protect the road infrastructure. The Authority is operating four fixed weighbridges at Songwe, Michinji, Balka and Mwanza and has a plan to conduct

axle load survey study in 2005 – 2006 that would help to chart out future plans. Thus with the NRA's effort on maintenance and preventive measures, the sustainability of the project is ensured.

7. PERFORMANCE OF THE BANK

7.1 The project was in line with the Borrower's priorities. The Bank's timely intervention, facilitated the GOM to improve the transport services along the Mchinji-Msulira corridor. The Bank's performance at appraisal was just satisfactory.

7.2 The Bank carried out regular desk monitoring and field supervision during implementation. The project was supervised with twelve (12) field missions during the implementation period. In addition follow up missions including participation from other departments took place. However, an effective review of project design before appraisal and at supervision stages, would have probably minimised the additional costs.

7.3 The Bank adhered to the agreed procurement schedule at appraisal. However, the slippages during implementation were caused mainly due to other factors stated in the earlier sections.

7.4 The processing of loan documents and disbursement applications were handled within the guidelines of the Disbursement manual. However, some applications were delayed due to improper submissions by the Borrower. From the perspective of the Borrower, some payment delays by the Bank were reported. Upon verification, it was noted that such cases were the minimum.

7.5 Overall, the performance of the Bank is just satisfactory.

8. OVERALL PERFORMANCE AND RATING

In accordance with the implementation performance indicators (Annex 6), the overall assessment of implementation performance is satisfactory with a rating of 2.4 out of 4 maximum. The rating for the Bank's performance is 2.3 out of 4 maximum indicating just satisfactory while the rating for the project outcome has been noted to be satisfactory with a rating of 2.5 out of 4 maximum. In general, the overall performance of the project is satisfactory except delay in the implementation due to unforeseen circumstances. The road is still in good condition, even after seven years of its completion.

9. CONCLUSIONS, LESSONS LEARNT AND RECOMMENDATIONS

9.1 Conclusions

9.1.1 The overall objectives of the project has been fully achieved. The construction of the project Mchinji- Msulira section to a class I bitumen standard has greatly improved the transport services from the town Mchinji to the lakeshore port on the East viz. Nkhotakota, thus reducing the road transport costs and passenger travel time.

9.1.2 The delay in the project implementation could be attributed mainly due to Borrower's revised requirements (before commencement.), which led to re-design with revision to the original tender documents and an increase to the original project cost.

9.1.3 The performance of the Contractor, Consultant and Borrower were satisfactory. As a result, the overall implementation of the project was found to be satisfactory with a rating of 2.4 out of 4 (maximum)

9.1.4 Out of the five professionals who were trained under the proceeds of the loan, only one professional is with NRA, while the remaining four have left the ministry (para 4.5.1)

9.1.5 Sufficient funds have been allocated for the maintenance works of the project component out of the Road Fund budget.

9.1.6 No annual traffic counts were undertaken by the Borrower since 1998 (except in 2001). As such historical traffic data was not available for the evaluation of the project road.

9.1.7 The recalculated EIRR at PCR in respect of Mchinji- Kasungu and Kasungu- Msulira is 20.6% . The constructed project road between Mchinji and Msulira is in good condition with no distress and with a smooth riding surface.

9.1.8 In terms of financial performance, it was noted that the ADF had a loan saving of UA 2.29 million, while the GOM incurred a cost overrun amounting to UA 1.22 million. This local cost overrun was mainly due to the devaluation of local currency during the period of implementation and compensation to the striking workers on the site.

9.1.9 The ADF loan balance of UA 2.29 million realized after the completion of the project was cancelled by the Bank in October 2000.

9.1.10 There was no separate component included under project cost estimates for audit of the project. No annual audits were undertaken by the GOM in accordance with the General Conditions of Loans. It was noted that a final audit of the project was undertaken in December 2002, and a summary of its findings was made available to the Bank.

9.2 Lessons Learnt

9.2.1 The lessons learnt from the project are given hereunder:

- This project has reinforced the earlier lessons learned by the Bank on the implementation issues. A preparation mission before appraisal would have been more useful, as this could have assisted the Borrower in resolving many issues before the implementation;

- The retention of the original design consultant for supervision of works would have saved time and some additional costs. However, this has not been the case in this project, even though provision exists in the Bank's procurement rules to consider retaining the same consultant who did the detailed design for the supervision in order to avoid changes/modifications to the original project design (para 4.6.1);

- Borrowers should clearly indicate their geometrical and technical requirements for any road project before undertaking the detailed designs, instead of bringing them just before the commencement of the project; this would avoid re-designing (involving additional costs with revision to the bidding documents) and minimise the implementation delays (para 3.2.1);

- Trained professional staff (under the Bank's loan proceeds) leaving the organization affected its institutional capacity in the management of road sector development programmes;

- Inadequate institutional capacity for review of design and monitoring of the project during implementation resulted in delays and escalation of unit rates and therefore cost over-runs;

- Conducting a technical and financial project audit (which was not included in this project) would have been useful to identify and resolving issues for smooth implementation (para 3.4.2);

- Obtaining information/data from the Borrower/Executing Agency for the projects that were completed long ago was noted to be source of problem, since project records were not available.

- During implementation, it appears that the Bank was cooperative in agreeing to the changes in the project. While a cordial relationship is welcome, the lesson being that the Bank should adopt this flexibility in appropriate circumstances.

9.3 Recommendations

9.3.1 In view of the above, it has been recommended that:

(i) For the Borrower

- For future projects, as far as possible consider retaining the same consultant who carried out the detailed design for supervision of works, in order to avoid additional costs and delays in project completion;
- For future projects of such magnitude, borrower should indicate firm requirements at the initial stages of the design, to avoid re-designing before commencement of the project;
- Make efforts to undertake and rectify the defects observed during the field inspection of the completed project to preserve the investment;
- To commit and conduct on regular basis annual national traffic counts for efficient road planning and project evaluation;
- Appropriate measures for retaining the trained professional (under the Bank loan proceeds) should be taken by way of bonding for a period of at least three years to service the institution;
- Should comply with the requirements of the General Conditions of Loan Agreement in respect of conducting and submission of annual Audit Reports of the projects;
- Make efforts to maintain proper records/ documentation for the completed projects (irrespective of their time of completion), for easy reference of visiting Bank missions.

(ii) For the Bank

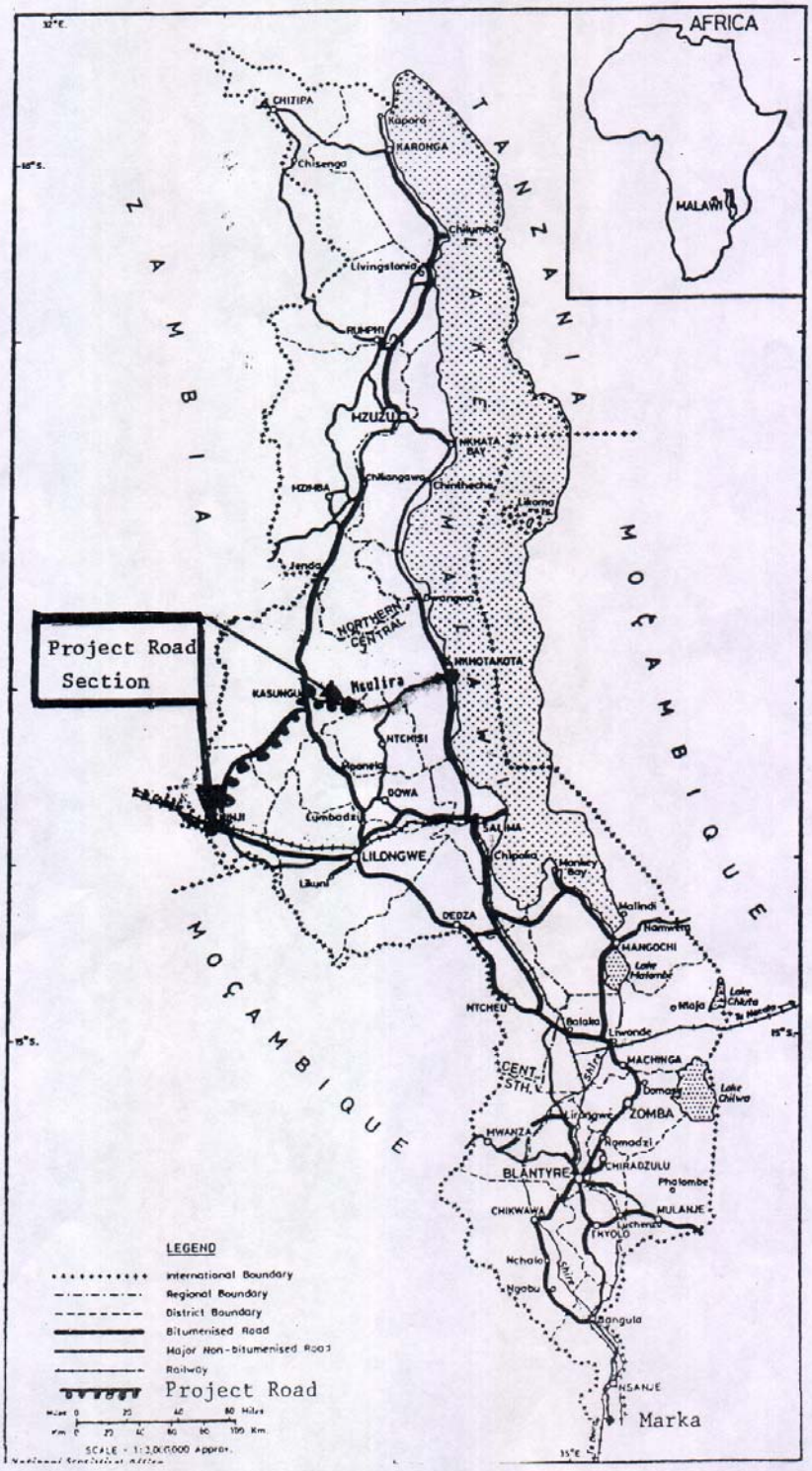
- Visiting Bank missions for the projects to have a dialog with the Borrower and stress the advantage of considering the same design consultant for supervision of works, in line with the Bank's procurement guidelines;
- For future projects, it is preferable and advisable to undertake preparatory missions to resolve the pertinent issues relating to the project before appraisal;
- Bank missions to follow up with the Borrowers' on the submission of annual project audit reports on regular basis, in accordance with Bank's General conditions of Loan agreements.
- Bank to undertake PCRs for the completed projects as early as possible, so that necessary documentation/ data on the project would be available for reference and inclusion in the report.

A matrix of recommendations is presented in Annex 7.

ANNEX 1

MALAWI
Mchinji- Kasungu- Msulira Road Project
Project Completion Report (PCR)

PROJECT LOCATION MAP



his map was provided by the African Development Bank exclusively for the use of the readers of the report to which it is attached. The names used and the borders shown do not imply on the part of the Bank and its members any judgement concerning the legal status of a territory nor any approval or acceptance of these borders.

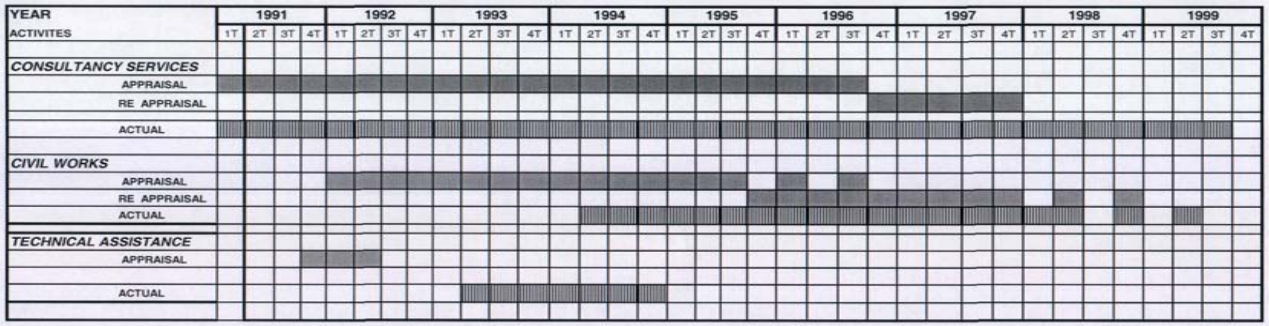
ANNEX 2

MALAWI

Michinji Kasungu Msulira Road Project

Project Completion Report

IMLEMENTATION SCHEDULE (APPRAISAL/ RE APPRAISAL vs ACTUAL)



Note: Broken bars denote defects liability period

Source: MOW and ADB Mission, August 2005

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Mchinji- Kasungu- Msulira Road Project
Project Completion Report (PCR)

Actual Project Costs (Component and Source)
(UA million)

	ADF				GOM				Total			
	Foreign Exchange	**Local Cost**	**Total**	**%**	**Foreign Exchange**	**Local Cost**	**Total**	**%**	**Foreign Exchange**	**Local Cost**	**Total**	**%**
A. Civil Works	17.48	0.53	18.01	90.7	-	5.33	5.33	95.3	17.48	5.86	23..34	91.7
B. Supervision (Supervision of Construction)	1.23	0.04	1.27	6.4	-	0.26	0.26	4.7	1.23	0.30	1.53	6.0
C. Tech. Assistance	0.57	-	0.57	2.9	-	-	-		0.57	-	0.57	2.3
Total	**19.28**	**0.57**	**19.85**	**100**	**-**	**5.59**	**5.59**	**100**	**19.28 (75.8%)**	**6.16 (24.2%)**	**25.44**	**100**

Source: MOWS and ADB Mission, August 2005.

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Mchinji- Kasungu- Msulira Road Project
Project Completion Report (PCR)

Categories of Expenditure
(UA million)

	At Re- Appraisal				Actual			
	Foreign Exchange	**Local Cost**	**Total**	**%**	**Foreign Exchange**	**Local Cost**	**Total**	**%**
A. CONSTRUCTION & CONSULTANCY SERVICES								
• Civil Works	18.88	4.23	23.11	87.1	17.48	5.86	23.34	91.7
• Supervision	1.92	0.56	2.48	9.4	1.23	0.30	1.53	6.0
Sub Total (A)	**20.80**	**4.79**	**25.59**	**96.5**	**18.71**	**6.16**	**24.87**	**97.7**
B. TECH. ASSISTANCE	0.77	0.15	0.92	3.50	0.57	-	0.57	2.3
Sub-Total (B)	**0.77**	**0.15**	**0.92**	**3.50**	**0.57**	**-**	**0.57**	**2.3**
Grand Total(A& B)	**21.57**	**4.94**	**26.51**	**100.0**	**19.28**	**6.16**	**25.44**	**100.0**

Source: MOWS and ADB mission, August 2005

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MCHINJI-KASUNGU-MSULIRA ROAD PROJECT
PROJECT COMPLETION REPORT

YEARLY DISBURSEMENT BY SOURCE OF FUNDS
(In UA MILLION)

Year	ADF				GOM				TOTAL			
	As at Appraisal		Actual		As at Appraisal		Actual		As at Appraisal		Actual	
	Amount	Cum.(%)	Amount	Cum.(%)	Amount	Cum.(%)	Amount	Com.(%)	Amount	Cum.(%)	Amount	Cum.(%)
1991	0.55	2.53	-	-	0.04	0.8	-	-	0.59	2.2	-	-
1992	2.77	15.29	-	-	0.58	12.9	-	-	3.35	14.9	-	-
1993	3.37	30.82	0.86	4.4	0.78	29.1	0.02	0.3	4.15	30.5	0.88	3.4
1994	3.73	48.02	4.57	27.9	0.87	47.2	0.89	15.1	4.60	47.9	5.46	24.9
1995	3.27	63.08	3.60	46.5	0.76	63.0	1.20	34.5	4.03	63.1	4.80	43.8
1996	1.41	69.58	3.57	64.9	0.34	70.2	1.94	67.2	1.75	69.7	5.51	65.5
1997	3.50	85.71	2.16	76.0	0.85	85.7	1.40	90.4	4.35	86.1	3.56	79.5
1998	3.10	100.00	2.79	90.4	0.55	97.1	0.47	98.2	3.65	99.8	3.26	92.3
1999	-	-	0.37	92.3	0.04	100.0	0.11	100.0	0.04	100.0	0.48	94.2
2000	-	-	1.49	100.0	-	-	-	-	-		1.49	100.0
Total	**21.70**	**100**	**19.41**	**100.0**	**4.81**	**100**	**6.03**	**100,0%**	**26.51**	**100**	**25.44**	**100.0**

Sources: FFCO & MOWS and ADB Mission August 2005

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Mchinji-Kasungu-Msulira Road Project
Project Completion Report (PCR)

ADF Disbursement Schedule (Appraisal Vs Actual)
(UA Million)

Year	As at Appraisal		Actual	
	Amount	Cum (%)	Amount	Cum (%)
1991	0.55	2.53	-	-
1992	5.61	15.29	-	-
1993	3.37	30.82	0.86	4.4
1994	3.73	48.02	4.57	27.9
1995	3.27	63.08	3.60	46.5
1996	1.41	69.58	3.57	64.9
1997*	3.50	85.71	2.16	76.0
1998	3.10	100.0	2.79	90.4
1999	-	-	0.37	92.3
2000	-		1.49	100.0
Total	**21.70**	**100.0**	**19.41**	**100.0**
Un disbursed balance			**2.29**	
Loan Savings (Cancelled)			**2.29**	

* A Supplementary ADF Loan was approved and signed for UA 6.60 million

Source: FFCO and ADB Mission August 2005

Annex 5

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MICHINJI - KASUNGU - MSULIRA ROAD PROJECT
PROJECT COMPLETION REPORT
Comparison with VS without MICHINJI - KASUNGU - MSULIRA ROAD
ECONOMIC BENEFIT-COST ANALYSIS

	Costs (US$ in million)		Normal (+ Diverted) Traffic			Generated Traffic			Accident	Net	Total
Year	Capital Works	Recurrent Works	MT VOC	MT Time	NMT Time & Operation	MT VOC	MT Time	NMT Time & Operation	Cost Reduction	Exogenous Benefits	Net Benefits
1998	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	27.068	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-27.068
2000	0.000	0.000	1.592	0.012	0.017	0.177	0.001	0.001	0.000	0.000	1.800
2001	0.000	-0.015	1.753	0.013	0.016	0.195	0.001	0.001	0.000	0.000	1.964
2002	0.000	-0.025	1.920	0.015	0.016	0.213	0.001	0.001	0.000	0.000	2.141
2003	0.000	-0.039	2.093	0.016	0.017	0.233	0.001	0.001	0.000	0.000	2.322
2004	0.000	-0.065	2.276	0.018	0.017	0.253	0.001	0.001	0.000	0.000	2.501
2005	0.000	-0.083	2.333	0.020	0.018	0.259	0.002	0.001	0.000	0.000	2.550
2006	0.000	-0.103	2.390	0.021	0.018	0.267	0.002	0.001	0.000	0.000	2.596
2007	0.000	-0.115	2.468	0.023	0.018	0.274	0.002	0.001	0.000	0.000	2.671
2008	0.000	-0.129	2.478	0.024	0.018	0.275	0.002	0.001	0.000	0.000	2.669
2009	-0.843	-0.145	2.580	0.260	0.018	0.287	0.002	0.001	0.000	0.000	2.160
2010	-0.643	-0.163	2.671	0.027	0.019	0.297	0.002	0.001	0.000	0.000	2.211
2011	0.000	-0.183	2.671	0.029	0.019	0.299	0.002	0.001	0.000	0.000	2.838
2012	0.000	-0.205	2.691	0.033	0.019	0.312	0.003	0.001	0.000	0.000	2.854
2013	0.000	-0.240	2.809	0.037	0.019	0.317	0.003	0.001	0.000	0.000	2.946
2014	0.000	-0.335	2.856	0.042	0.019	0.326	0.004	0.001	0.000	0.000	2.913
2015	0.000	-0.380	2.930	0.045	0.019	0.336	0.004	0.002	0.000	0.000	2.956
2016	0.000	-0.405	3.051	0.047	0.020	0.339	0.004	0.002	0.000	0.000	3.058
2017	-0.704	-0.485	3.105	0.052	0.020	0.345	0.005	0.002	0.000	0.000	2.340
Total:	27.850	-3.115	44.668	0.734	0.327	5.004	0.042	0.021	0.000	0.000	18.423

NPV @ 12 % = US$ 18.423 million, EIRR = 20.6%

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MCHINJI-KASUNGU-MSULIRA ROAD PROJECT
PROJECT COMPLETION REPORT

Performance Rating Scale and Evaluation Criteria

1. Rating Scale

$X \geq 3$	*Highly satisfactory*
$2 \leq X < 3$	*Satisfactory*
$1 \leq X < 2$	*Unsatisfactory*
$X < 1$	*Highly unsatisfactory*

Where X is the value assigned to a performance variable.

Classification: Implementation performance is considered satisfactory if the average value of X is ≥ 2.

2. Evaluation Results

Component Indicators	Score (1-4)	Remarks
1. Adherence to time schedule	1	A delay of 9 months for the project start up and the project was completed with a time over-run of 34 months.
2. Adherence to cost schedule	2	Project was completed with Supplementary budget.
3. Compliance with covenants	4	No delay in loan effectiveness
4. Adequacy of monitoring & evaluation and reporting	2	Complied with submission of all the relevant reports, though there were delays at times
5. Satisfactory Operations (if applicable)	3	VOC, travel time and accidents decreased, traffic flow higher than the projection.
TOTAL	12	
Overall Assessment of Implementation Performance	2.4	Satisfactory

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MCHINJI-KASUNGU-MSULIRA ROAD PROJECT
PROJECT COMPLETION REPORT

FORM BP 1

BANK PERFORMANCE

Component Indicators	Score (1 to 4)	Remarks
1. At Identification	3	The project was an outcome of the recommendations of the feasibility studies financed through ADF/TAF resources.
2. At preparation of project	N/A	-
3. At appraisal	2	The project was of high priority to GOM. The Bank could have undertaken an overall review of the project design before appraisal and discussed the issues related to the geometric standards etc
4. At supervision	2	Quite a number of supervision missions were done on this project. An effective supervision and monitoring of the project could have resolved the issues in the field and additional costs could have been minimised.
Overall assessment of Bank Performance	2.3	Just Satisfactory

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MCHINJI-KASUNGU-MSULIRA ROAD PROJECT
PROJECT COMPLETION REPORT

FORM PO 1
PROJECT OUTCOME

No.	Component Indicators	Score (1 to 4)	Remarks
1	**Relevance and Achievement of Objectives***		
i)	Macro-economic policy	3	
ii)	Sector Policy	3	
iii)	Physical (incl. Production)	3	Well designed 138 km two-lane bitumen road
iv)	Financial		
v)	Poverty alleviation, social & gender	2	
vi)	Environment	3	Provisions of the Environmental Guidelines were implemented.
vii)	Private sector development	3	
viii)	Other (Specify)		
2	**Institutional Development (ID)**		
i)	Institutional framework incl. Restructuring	2	
ii)	Financial and Management Information Systems including Audit Systems	2	There is no computerized Financial and MIS at MOW. Annual auditing of the project was done.
iii)	Transfer of Technology	2	
iv)	Staffing by qualified persons (incl. Turnover), training & counter-part staff	2	

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MCHINJI-KASUNGU-MSULIRA ROAD PROJECT
PROJECT COMPLETION REPORT

FORM PO 1

PROJECT OUTCOME

3	**Sustainability**	Score	Remarks
i)	Continued Borrower Commitment	3	Borrower has shown commitment to road maintenance by increasing its annual budgets and establishing a dedicated Road Fund
ii)	Environmental Policy	3	The National Directorate for Environment Impact Assessment is staffed with qualified and experienced environmentalists. The Policy is appropriately followed.
iii)	Institutional Framework	2	
iv)	Technical Viability and Staffing	2	
v)	Financial viability including cost recovery systems	-	
vi)	Economic Viability	3	The investment for upgrading is economically viable
vii)	Environmental Viability	3	Project is well monitored to ensure compliance with environmental policies and requirements.
viii)	O&M facilitation (availability of recurrent funding, foreign exchange, spare parts, workshop facilities etc.)	-	
4	**Economic Internal Rate of Return**	4	EIRR is 20.6 %.
	TOTAL	45	
	Overall Assessment of Outcome	2.50	Satisfactory

Annex 7

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MCHINJI-KASUNGU-MSULIRA ROAD PROJECT
PROJECT COMPLETION REPORT

RECOMMENDATIONS AND FOLLOW-UP MATRIX

Main Findings & Conclusions	Lessons Learned/ Recommendations	Follow-up Actions	Responsibility
Formulation & Project Rational: The project was a result of the road studies financed by the Bank in 1985 as part of the GOM's Transport Programme.	The Borrower should have indicated his firm technical requirements at the commencement of the studies, as this could have avoided the re-design before commencement of construction works.	The GOM should ensure proper initial planning which is a pre-requisite for effective and efficient implementation of projects.	GOM
Project Implementation: 1. Time overrun mainly due to delay in the re-deign of the project at the commencement, followed by National strike and payment delays.	GOM should review the draft feasibility studies and design to verify whether it conforms to their technical standards so as to avoid implementation delays.	Minimise start-up delays in project implementation.	GOM / ADB
Compliance with Loan Conditions & Covenants: 1. All reports submitted.	--------	----------	----------
Performance Evaluation & Project Outcome: The overall project performance rating was satisfactory and the project objective was substantially achieved.	Though the project outcome is a well designed 2-lane bitumen road, the value of the project would have further enhanced (in terms of cost and time) if this had been completed as per appraisal schedule.	The GOM should endeavour to adhere to implementation schedules.	GOM
Sustainability: There is a risk that the routine and periodic maintenance budget allocation may not be adequate.	GOM has already established a Road Fund and instituted measures to generate adequate resources for road maintenance.	GOM to adhere to its commitments of road maintenance through annual budget and dedicated Road Fund.	GOM

Annex 8

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MCHINJI-KASUNGU-MSULIRA ROAD PROJECT
PROJECT COMPLETION REPORT

SOURCES OF INFORMATION

1. Borrower's Project Completion Report, July 1999.
2. Appraisal Report on Mchinji- Kasungu- Msulira Project, September 1991.
3. Presidents Memorandum for Supplementary Loan, September 1997.
4. Project Files.
5. Summary findings of Government's Audit Report.
6. National Roads Authority, Annual Report, 1st July 2002 to 30th June 2003.
7. National Roads Authority, Annual Report, 1st July 2003 to 30th June 2004.
8. National Roads Authority, Five – Year Strategic & Business Plan, June 2005.