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IMPLEMENTATION COMPLETION REPORT
(TF-25158 IDA-30320)

ON A

CREDIT

IN THE AMOUNT OF SDR 224.5 MILLION (US$ 309.2 MILLION)

TO THE

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

FOR A

ROAD SECTOR DEVELOPMENT PROGRAM SUPPORT PROJECT

November 25, 2005

Africa Region
Transport

CURRENCY EQUIVALENTS

(Exchange Rate Effective August 2005)

Currency Unit	=	Ethiopian Birr
ETB 1	=	US$ 0.113
US$ 1	=	ETB 8.845

FISCAL YEAR

July 8 - July 7

ABBREVIATIONS AND ACRONYMS

AC	Asphalt Concrete
ADF	Africa Development Fund
AMT	Affordable Means of Transport
CAS	Country Assistance Strategy
DCI	Domestic Construction Industry
DFID	Department of International Development, UK
DMOs	District Maintenance Organizations
DREs	Dispute Review Experts
EA	Environmental Assessment
EG	Environmental Guidelines
EI	Environmental Impact
EIA	Environmental Impact Assessment
EIRR	Economic Internal Rates of Return
EMB	Environmental Management Branch
EMP	Environmental Monitoring Plans
EPM	Environmental Procedures Manual
ERA	Ethiopia Roads Authority
ERP	Emergency Reconstruction Program
ERTTP	Ethiopia Rural Travel and Transport Program
EU	European Union
FMS	Financial Management System
GIS	Geographic Information System
GOE	Government of Ethiopia
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
HDM	Highway Design Model
IDA	International Development Association
KfN	Kreditanstalt für Wiederaufbau (German Bilateral Aid)
LRSP	Letter of Road Sector Policy
MAP	Multi-country HIV/AIDS Program
MMS	Maintenance Management System
NDF	Nordic Development Fund
NPV	Net Present Value
PA	Project Agreement
PAD	Project Appraisal Document
PDOs	Project Development Objectives

PMI	Performance Monitoring Indicators
PMMS	Performance Management and Monitoring System
PMS	Pavement Management System
QAG	Quality Assessment Group
RFA	Road Fund Administration
RIU	Roads Inspectorate Unit
RMAP	Road Maintenance Action Plan
RMI	Road Management Initiative
RSDP	Road Sector Development Program
RROs	Regional States Roads Organizations
RRTS	Rural Road and Transport Strategy
SA	Social Assessment
SEA	Sector Environmental Assessment
TA	Technical Assistance
TOR	Terms of Reference
VOC	Vehicle Operating Costs
VLTTS	Village Level Travel and Transport

Vice President:	Gobind T. Nankani
Country Director	Ishac Diwan
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Task Team Leader/Task Manager:	John D. Riverson

ETHIOPIA
ROAD SECTOR DEVELOPMENT PROGRAM SUPPORT PROJECT

CONTENTS

Project ID: P000755	*Project Name:* ET-Road Sec. Dev. Program Support Proj.
Team Leader: John D. Riverson	*TL Unit:* AFTTR
ICR Type: Core ICR	*Report Date: November 28, 2005*

1. Project Data

Name: ET-Road Sec. Dev. Program Support Proj.
L/C/TF Number: TF-25158; IDA-30320
Country/Department: ETHIOPIA
Region: Africa Regional Office

Sector/subsector: Roads and highways (92%); Central government administration (6%); Sub-national government administration (2%)
Theme: Rural services and infrastructure (P); Access to urban services and housing (P); Municipal governance and institution building (S); Export development and competitiveness (S)

KEY DATES		*Original*	*Revised/Actual*
PCD:	01/30/1997	*Effective:*	04/27/1998	05/06/1998
Appraisal:	08/29/1997	*MTR:*	05/06/2000	02/16/2001
Approval:	01/15/1998	*Closing:*	05/31/2003	05/31/2005

Borrower/Implementing Agency: GOVERNMENT/ETHIOPIAN ROADS AUTHORITY
Other Partners: EU, DFID, NDF, GTZ, Kfw, Japan, ADF, Italy, Netherlands

STAFF	Current	At Appraisal
Vice President:	Gobind T. Nankani	Callisto E. Madavo
Country Director:	Ishac Diwan	Oey Astra Meesook
Sector Manager:	C. Sanjivi Rajasingham	Yusupha B. Crookes
Team Leader at ICR:	John D. Riverson	John D. Riverson
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2. Principal Performance Ratings

(HS=Highly Satisfactory, S=Satisfactory, U=Unsatisfactory, HL=Highly Likely, L=Likely, UN=Unlikely, HUN=Highly Unlikely, HU=Highly Unsatisfactory, H=High, SU=Substantial, M=Modest, N=Negligible)

Outcome:	S
Sustainability:	HL
Institutional Development Impact:	SU
Bank Performance:	S
Borrower Performance:	S

	QAG (if available)	ICR
Quality at Entry:	S	S
Project at Risk at Any Time:	No	

3. Assessment of Development Objective and Design, and of Quality at Entry

3.1 Original Objective:

The primary aim of the Project was to contribute to Ethiopia's economic development by (i) improving trunk and regional road access and utilization to meet the agricultural and other economic development needs; (ii) building up the institutional capacity in both the public and private sectors for sustainable road development and maintenance; and (iii) providing economic opportunity for the rural poor both through increased employment in rural road works and development of appropriate and Affordable Means of Transport (AMT) and services.

The project was designed as the first of a phased participation by IDA in a Sector Investment Program, to implement the Ethiopian Government's (GOE) 10-year Road Sector Development Program (RSDP - 1997-2007). The RSDP is an integrated package of investments, sectoral reforms and institutional reorganization, and is driven by strong national ownership, and clear policy goals and objectives. The main road sector issues were identified, and the policy and institutional reforms required to achieve the objectives, along with the implementation plan were agreed, with the different stake holders' participation, including IDA, early in the program development (1994-96).

The objectives of this project, derived from the overarching goal of the RSDP and the Bank's Country Assistance Strategy (CAS), were central to the RSDP implementation. This is measured by the extent of the major policy and institutional reforms that make the investments in the road sector sustainable.

3.2 Revised Objective:

Project Development Objectives (PDOs) remained the same throughout project implementation.

3.3 Original Components:

The Project included the following components: (i) Rehabilitating and Upgrading Paved Trunk Roads, (ii) Upgrading Trunk Roads from Gravel to Asphalt Pavement, (iii) Consultancy Services for Construction Supervision, (iv) Institutional Strengthening and Capacity Building Support for Ethiopian Roads Authority (ERA), (v) Similar Support for 4 Regional States Roads Organizations (RROs), (vi) Environmental Guidelines (EG) and Sector Environmental Assessment (SEA) Capacity Building, and (vii) Technical Preparation of Rural Roads Improvement.

Apart from the investments in the actual road works, IDA, in close collaboration with other partners, supported GOE in the coordination of the policy and institutional reforms, the different studies, Technical Assistance (TA), and training programs.
(i) and (ii) The first two components involving Rehabilitation and Upgrading of Paved Trunk Roads involved strengthening the Modjo-Gewane (372 km) and the Kulubi-Dire Dawa-Harar (79 km) roads to asphalt concrete (AC) surface. The appraisal estimate, including contingency, was US$ 154.8 million, with IDA financing of US$ 108.4 million. Upgrading of Trunk Roads from Gravel to Asphalt Paved Surface included: (a) Awash-Kulubi (233 km); (b) Debre Markos -Gonder (439 km), and (c) Woldiya-Alamata and Betemariam-Wukro sections (197 km) of the Woldiya-Zalambessa road. The GOE financed the Alamata-Betemariam section (114 km). The appraisal cost estimate, including contingency and the GOE financed section, was US$ 309.6 million, with US$ 178.0 million of IDA financing.

The Modjo-Gewane road is part of the main import/export corridor running from Addis Ababa to the Eritrean port of Assab and the Djibouti port. The Awash-Kulubi- Dire Dawa-Harar road is in the Eastern Corridor linking Addis Ababa to Dire Dawa and Harar, two major commercial and administrative towns, and the East and South Eastern Ethiopia. The corridor extends to Djibouti and Somalia as a strategic

international land transport connection. The Debre Markos-Gonder road is part of the North West corridor, providing strategic link to agriculturally vital areas. It is also a key part of the inter-state road between Ethiopia and Sudan, along the main Trans-East African Highway. The Woldiya-Zalambessa road is the main route between Ethiopia and Eritrea passing through Mekelle and Adigrat, 2 important centers in Tigray region.

(iii) The third component comprised consultancy services for the supervision of the above works. The appraisal estimate, including contingency was US$ 34.0 million, out of which IDA's share of financing was US$ 20.0 million.

(iv) The Support for ERA, aimed at ensuring effective RSDP implementation, involved the establishment of a Roads Inspectorate Unit (RIU) which carries out technical and financial audits. The IDA support was designed to complement other Donors', as well as TA provided under the IDA Credit 2438. The appraisal cost estimate, including contingency, was US$ 29.9 million with IDA share of US$ 2.8 million, and GOE and other Donor partners providing US$ 27.1 million.

(v) The Nordic Development Fund (NDF) co-financed the TA and capacity building of 4 RROs in the Afar, Benishangul-Gumuz, Gambella and Somalia Regions. The TA implemented systems for road network planning, and contract and financial management. It also supported ERA training centers to develop curricula for road maintenance, contract and financial management, and small scale contractor training. The appraisal estimate was US$ 4.8 million. NDF also provided US$ 2.1 million for the feasibility studies, and the designs for 550 km of rural roads.

(vi) The EG and SEA Capacity Building Component was necessitated by the scope of the RSDP. The Environmental Impact Assessment (EIA) study for the 4 roads included under this Credit and the sector EG were financed under the Credit 2438. The EU also financed some activities of ERA's Environmental Management Branch (EMB), US$ 0.5 million, while NDF support, US$ 0.7 million, was provided to carry out EIA studies for other roads included in the RSDP.

(vii) IDA provided TA, through the Japanese PHRD Grant TF-25158, to carry out Village Level Travel and Transport Surveys (VLTTS) and Domestic Construction Industry (DCI) studies. The results of the VLTTS were incorporated in the development of the Ethiopian Rural Travel and Transport Program (ERTTP), while the DCI study formulated a DCI development strategy.

3.4 Revised Components:

Project components remained the same throughout project implementation.

3.5 Quality at Entry:

The project quality at entry was reviewed by the Quality Assurance Group (QAG). It was rated marginally satisfactory, overall, largely due to concerns of a possible underestimate of resettlement needs on one road. All other aspects including environmental assessments were satisfactory or better.

Relevance to the Country Assistance Strategy (CAS): The Project supported two core objectives of the CAS, enhancing pro-poor growth and human development, by: (i) accelerating rural growth by supporting increased rural productivity and the marketization of agriculture; (ii) generating off-farm employment; (iii) enhancing export growth through the reduction of transport cost; (iv) supporting the reform of the public sector; (v) facilitating the delivery of education and health services; (vi) mitigating and reducing risks in vulnerable areas through off-farm employment and labor mobility; and (vii) addressing environmental and social protection issues.

Policy and Institutional reforms: The Project was designed in line with GOE development priorities, and consistent with economic growth and poverty reduction objectives. The same was confirmed in the GOE Letter of Road Sector Policy (LRSP) of December 16, 1997. The policies, measures and actions aimed at achieving the objectives of RSDP were fundamental to Quality at Entry. Of particular significance were the reforms for ensuring sufficient funding for road maintenance, enhancing the capacity of ERA in the areas of planning, contract administration, design and regulatory activities, and the increased use of private contractors. Also important were the enforcement of road safety and axle load regulations, streamlining of customs clearance, the formulation of a Rural Road and Transport Strategy (RRTS), and improving Program Monitoring and Coordination.

Project Design: Given the Bank's involvement in the Ethiopian Road Sector for over 50 years, the basic assumptions for project design were generally sound. The objectives were based on clear situational and problem definitions. They reflected the fundamental linkages between CAS Objectives; the PDOs, Project Outputs and Project Components in relation to Key Performance Indicators, Monitoring and Supervision, and Critical Assumptions and Risks. The PDOs paid particular attention to institutional capacity building to support the three objectives of CAS (private sector growth, improvement and expansion of essential infrastructure, and environment rehabilitation, and conservation). The economic, financial, technical, and institutional assessments were sound. Two complementary dimensions of project sustainability (investment sustainability and policy reform) were clearly identified and performance indicators were explicitly developed to measure their implementation.

Project Risks and Assumptions: All major risks and assumptions were identified in the Project Appraisal Document (PAD). There were two categories of Critical Risks identified, the first related to project objectives (15), and the second related to project Outputs (4). Overall Project risk rating was Medium. None of the risks and assumptions ended in any modification to project design since measures were taken to remedy the issues arising during implementation.

Safeguard Policies: The PAD highlighted the requirements for social and environmental assessments (EA). The Social Assessment (SA) included analysis of temporary and localized microeconomic impacts resulting from project activities; as well as the potential for involuntary resettlement. The GOE with public participation completed the EA prior to approval of the project, which was supplemented by a Road Sector Environmental Report. Neither of the reports identified any major Environmental Impacts (EI), but vividly pointed out the high social acceptability and outlined mitigation measures. Resettlement and compensation procedures were found to be satisfactory to handle the limited number of affected people. QAG review concluded that there were gaps in the SA, and this led to the inclusion of a social scientist in the Task Team to address arising social issues.

At project preparation, the HIV/AIDS Program for Africa (MAP) was not operational. However, confronted with the challenge of HIV/AIDS, the project initiated an HIV/AIDS strategy for the sector. The target groups were staff of ERA, contractors, and consultants, and the local communities at project sites. ERA was one of the first to benefit from the Ethiopia MAP project when it became effective in 2002, presenting its initial program of about US$ 1.3 million for financing.

Performance Monitoring Indicators (PMIs): Six (6) indicators -- Traffic Flow, Journey Time, Pavement Roughness, Maintenance Expenditure, Pavement Loading and Truck Rates -- were included in the PAD. The RSDP indicators were further developed and expanded with EU funds to establish a Performance Monitoring System for decision-makers in the GOE, and the donor community. As part of the supplementary letter to amend the Project Agreement (PA) between IDA and ERA, additional PMIs were

introduced to reflect changes in employment in road works (by gender).

4. Achievement of Objective and Outputs

4.1 Outcome/achievement of objective:

Objective 1: Improving trunk and regional rural road access and utilization to meet the agricultural and other economic development needs: The objective of improving the condition of the 4 roads was achieved *satisfactorily*. This resulted in the reduction of vehicle operating costs (VOC) by about 16 percent and journey time by 25-30%, contributing to the lowering of transport costs with freight rates reducing by 25% from the average rate of Birr 0.36 per ton/km in 1999/2000 on the import-export route, and 47% on the trunk routes from Birr 0.57 per ton/km, with more efficient utilization of vehicles. The improved roads stimulated the production and marketing of agricultural and other commodities. They enhanced the integration of domestic markets and the potential growth of exports in terms of volume and international competitiveness. This is borne out by IMF estimates which show positive export growths since 1999/00 with recent annual percent changes at 6.1, 28.1, 10.9 from 2002/03 to 2004/05.

The weighted average percent of works completed (in financial terms) under the 10 works contracts was 94.3%. Works were substantially completed on 1,334 km of roads, including the rehabilitation of 70 km of the 140-km Gewane-Mille road, which was financed under Credit 2438. Road works on 1,300 km were planned under Credit 3032 out of which 1,264 km were completed. GOE requested in 2005, and IDA agreed to finance the remaining works (36 km), under the Roads Component of the ongoing Credit 3438, along with outstanding payments for completed works estimated at US$ 26 million. The shortfall of financing primarily resulted from the higher price escalation, significantly affected by the higher than usual prices of fuel and petroleum products on the world market.

The RSDP, of which this Project formed a significant part, met the intended outcome of supporting the economic growth by easing the severe infrastructure constraints. The network in good condition (from 1997-2004) increased from (i) 17% to 49% for paved roads, with a significant contribution from roads completed under this credit, (ii) 25% to 35% for Federal gravel roads, and (iii) 21% to 36% for rural roads.

Objective 2: Building up institutional capacity in both the public and private sectors for sustainable road development and maintenance. The project's outcome on institutional capacity building is rated *Highly Satisfactory*. The success in this objective is the result of: (i) The initial quality of the implementing agency, the Ethiopian Road Agency, with its effective leadership committed to all the project objectives, including this one; (ii) The detailed preparatory work for the reform agenda which had been supported by GTZ a couple of years before the start of the RSDP; (iii) The comprehensive coordination from the outset between the many road sector development partners in Ethiopia; (iv) The commitment of substantial resources to the capacity building –nearly ten percent of project costs – and the quality of the additional inputs from GTZ, DFID, EU etc; (v) The continuity and quality of the WB team which engaged with an increasingly strong locally based emphasis from project preparation through to this successful completion – with the TTL and Senior Transport Specialist, both involved for over 10 years.

In the light of the above factors, the ERA and RROs' Reform arising from studies financed by GTZ, helped to strengthen the autonomy of the organizations. The reformed ERA, managed by its Board, recruited and retained core staff, due to the upward revision of salaries (up to 66 %) and other benefits. Noteworthy is the improvement of ERA's capacity in managing procurement, contract administration, financial management and planning. TA support was provided for contract administration and transport planning and economics (by EU), and contract preparation (by DFID).

IDA also provided TA under Credit 2438 for the establishment of a Pavement Management System (PMS) and updating ERA's Financial Management System (FMS). GTZ supported the computerization of ERA's activities including the Maintenance Management System (MMS), a new accounting package, and a computerized stores system developed in-house. Under DFID support, a 5 years capacity building program was initiated for ERA's 10 District Maintenance Organizations (DMOs), which improved their capacity for cost effective maintenance. This is integral to the decentralization of ERA's maintenance function recommended by the Reform Study. The establishment of the RIU, with IDA support, improved the technical and financial auditing of maintenance and construction activities.

The Project also supported the development of the DCI capacity. All works contracts were awarded to international contractors. Local contractors were engaged as sub-contractors in drainage works and other activities, and in some cases, for the performance of part of the road works. Local contractors supplied construction materials and rented machinery and equipment. In addition, international consultants in association with local consultants, carried out feasibility, EIA and other studies, design review, prequalification of Contractors and tender evaluation as well as supervision of works. This contributed to developing local consultants and kept the cost of services at a reasonable level. Some of the consultancy services provided opportunities for on-the-job training to ERA counterpart staff.

Objective 3: Providing Economic Opportunity for the Rural Poor both Through Increased Employment in Rural Road Works and AMT and Services: Providing economic opportunity for the rural poor in the areas served by the roads is rated *Satisfactory*. The civil work contracts created employment and income earning opportunities to skilled and unskilled labor, while small and medium scale enterprises were provided with entry to a larger market for their goods and services. Average monthly employment is estimated at a total of 7400 made up of 40% skilled, and 60% unskilled labor, over the period of the ten contracts, averaging 40 months. Sample data from 3 contracts showed the women employed averaged between 4 and 7.2% of the total. The transactions involved in this had multiplier effects in the rural economy. As for AMT and services, the project had limited direct impact as making the RRTS operational and the start up interventions required a longer period. However, the project was instrumental in implementing the RRTS through the ERTTP and in raising awareness of the key issues in the use of AMT and services, and setting up the required institutional arrangements and procedures.

4.2 Outputs by components:

The satisfactory ratings for the civil works reported under Components 1 and 2 are a result of the effective actions taken by ERA to resolve normal and unforeseen contractual and technical design issues faced during construction, some of which have been cited herein.

Project Component 1. Strengthening of paved trunk roads: This component is rated *Satisfactory* as the rehabilitation of the Modjo-Mille (3 Contracts) and the Kulubi-Dire Dawa-Harar roads were substantially completed. The Awash Arba- Gewane and the Gewane-Mille works contracts were completed and finally accepted in August 2003 with all contractual matters resolved amicably and final payments effected. The Kulubi-Dire Dawa-Harar and Modjo-Awash Arba contracts were also completed and provisionally accepted. The contractual claims under the first were amicably resolved and outstanding retention money released against the submission of Bank Guarantees, but the issues were still pending for the second, at Credit closing.

There was quantity overrun amounting to 17 % of the original contract price under the Modjo-Awash Arba road contract due to a change in road design from overlay to reconstruction, resulting from increased

deterioration in sections of the Road in-between design review and actual construction. The original completion time of 1096 days was prolonged by about 1006 days, contributing to the 45% price adjustment over the original contract price. In comparison, the quantity overrun under the other 3 contracts varied from 0.28 - 1.38 %, while price escalation varied from 22.5 - 31.2%.

Project Component 2 - Upgrading of Trunk Roads (from gravel to asphalt paved standards): The Component is rated *Satisfactory*. Works under 5 contracts (Awash-Hirna, Hirna-Kulubi, Debre Markos-Merawi, Woldiya-Alamata and Betemariam-Wukro) were provisionally, or in most sections finally, accepted. The contractual claims were amicably resolved, in all, except the Hirna-Kulubi contract, and outstanding retention money was released against the submission of Bank Guarantees. The Merawi-Gondar contract was re-tendered because the Yugoslavian contractor could not progress the works due to difficulties encountered in transacting business in Yugoslavia after economic sanctions in 1999. The contract was re-awarded in September 2001. By the Credit closing date, the permanent works had progressed to 84.3 %, and no further closing date extensions were sought.

The following summarizes the key issues of contract implementation that were resolved by ERA: (i) Awash-Hirna: quantity overrun was limited to 1.76 % of the contract amount, while price escalation amounted to 29%. Time extension claimed was 714 days, and 487 days were granted. (ii) Hirna-Kulubi: quantity overrun was 10% of the contract amount, and price escalation, 15.36% (pending final claim settlement). Time extension granted was 125 days out of the requested 1616 days. (iii) Debre Markos-Merawi: the quantity overrun was 20.75% of the contract amount with price escalation, mostly due to extension of time, at about 57.5%. Time extension granted was 208.3% of the original contract duration. (iv) Merawi-Gondar: quantity overrun was 16.8 % of the contract amount, and Price escalation was 10.1% on sections completed. The Contractor applied for an extension of 625 days to the contract period and it's under review by ERA. (v) Woldiya - Alamata: quantity overrun was about 4.8% of the contract amount and price escalation, 41.53%. Time extension granted was 714 days. (vi) Betemariam Wukro: quantity overrun was about 3.2% of the contract amount and price escalation, 37.4%. Variation orders were insignificant except in Hirna-Kulubi and Woldiya-Alamata contracts where major bridge failures and landslides occurred during construction.

Project Component 3 - Consultancy Services for the Supervision of the Civil Works: The Component is rated *Satisfactory*. Ten consultants were assigned for construction supervision. Three essential elements of quality and quantity control, and progress monitoring along with assistance in resolving contractual and legal issues were carried out in accordance with the contract provisions. According to ERA's May 2005 PIP update, two consultants had completed the services, while another 5 would complete their services within a couple of months from closing. The GOE is financing the outstanding services under 4 contracts, estimated at US$ 200,000 towards final acceptance. The outstanding services under 4 other contracts, estimated at US$ 900,000, are being financed under the ongoing Credit 3438-ET along with the associated works contracts.

Project Component 4 - Institutional Strengthening and Capacity Building Support for ERA: The Component is rated *Highly Satisfactory*. All of the studies and TA funded by IDA and other Donors were completed successfully, including the VLTTS and the DCI studies. The RIU was established and the Guidelines were developed for: (i) the functions and administrative procedures of the Unit, (ii) Sector Studies Inspection, (iii) Major Civil Works Inspection, and (iv) Maintenance Works Inspection. Related short term training, local and foreign, along with long term postgraduate studies for 5 ERA staff were completed. The short term training covered areas of computer skills development, finance for managers, project planning and monitoring, and project management. The long - term training included Sustainable Infrastructure and Environmental Engineering, and Advanced Accounting.

The Consultancy Services for Road and Bridge Design Manual, and Technical Specifications, partially financed under the Credit 2438 along with 5 other consultancy services were completed and the manuals published. The services also included Design Review, Bid Documents Preparation, Prequalification of Contractors and Bid Evaluation for the 5 Roads included under the follow-on IDA-financed APL1 and APL2 projects.

Project Component 5 - Institutional Strengthening and Capacity Building Support for 4 RROs: The Component is rated *Satisfactory*. All the NDF-financed TA to the 4 regions and ERA training centers were completed successfully. The recommendations were implemented, and the training manuals are being used in the ERA training centers.

Project Component 6 - Environmental Guidelines and Sector Environment Assessment (EA) Capacity Building: The Component is rated *Satisfactory*. The EMB was created and has become operational, while an Environmental Procedures Manual (EPM), which was prepared by ERA and cleared by the Bank, was published in 2001. Environmental Monitoring Plans (EMP) were also prepared for each works contract, and compliance was ensured through the supervising engineers, and monitored by EMB. Compliance to the requirements set by the EPM and EMPs are generally satisfactory.

Project Component 7- Technical Preparation of Rural Road Improvements: This component is rated *Satisfactory*. The Design Feasibility and EIA consultancy services for the Assosa-Guba, Babile-Fik, and Yalo-Dallol roads were completed, and the Assossa-Guba road is already included for APL2 financing. In addition to the originally planned activities, the NDF has financed, within the resource envelope of NDF 207, TA for the installation of a geographic information system (GIS) for the road network, and a performance management and monitoring system (PMMS) for ERA.

4.3 Net Present Value/Economic rate of return:

The post-construction Economic Internal Rates of Return (EIRR) were calculated for Modjo-Mille, two sections of Woldiya- Zalambessa, Debre Markos-Gondar, and Awash- Kulubi- Dire Dawa- Harar roads considering the trends in traffic by vehicle class. The EIRR values and Net Present Values (NPVs) at 12% Discount rate are as follows:

EIRR and NPV at 12% Discount Factor

Road Link	Length (km)	EIRR (%)		NPV at 12% D. F. in million Birr	
		Appraisal	ICR	Appraisal	ICR
Modjo Awash - Mille	442	20.3	34.5	919.4	4476.4
Woldiya - Alamata and Betemariam - Wukro	196	16.3	26.0	205.4	1,269.6
Debre Markos - Gondar	428	14.3	29.3	162.5	2,439.2
Awash - Kulubi - Dire Dawa - Harar	311	25.2	30.7	947.2	2,522.9

The HDM-III model was used for the economic evaluation, for consistency with the analytical method at appraisal. The EIRR values for all 4 roads are far higher than the assumed opportunity cost of capital of 12% and the various rates determined at appraisal. The values have also increased to within 25-35%, compared to 14-26% at appraisal indicating the viability of the investment made in the rehabilitation and upgrading the roads. Similarly, NPVs are proportionately higher than those in the PAD. The difference in the indices of viability is attributable to higher traffic growth and substantial reductions in VOC, resulting from improved road condition, despite increase in fuel prices. The 2 factors offset the higher actual construction unit costs that had occurred at completion, compared to the engineering estimates. The economic re-evaluation is shown in Annex 3. Indices of viability were computed for a total of 20 sections

along the 4 roads, by comparing alternatives. The lowest EIRR is for the Azezo-Gondar section (19.6 %), and the highest for the Dengego-Dire Dawa section (about 39.8%).

4.4 Financial rate of return:

Not applicable since non-revenue earning entities are involved.

4.5 Institutional development impact:

The Project's institutional development impact is *substantial*. It supported the re-establishment of ERA as an autonomous institution with its management accountable to a Board. Major reforms were introduced, particularly in commercializing the operations of ERA. A dedicated road fund was established under GOE Proclamation No. 66 / 1997 for financing road maintenance, and for establishing the Road Fund Administration (RFA), both of which were strengthened under the project. A Road Fund Board comprising representatives of the Federal GOE (5), Regional States (6), and the Private Sector (4) was formed to administer the fund.

Measures were introduced to overcome organizational deficiencies of ERA in areas of planning, contract administration, financial administration, auditing and environmental and social impact monitoring. The Planning and Programming Division staff received short and long term training, which improved the application of analytically sound methods for program formulation, monitoring and evaluation. The Contract Administration Division was reorganized and its staffing reviewed, key personnel were trained, and procedures were streamlined, resulting in marked improvements in the hiring of contractors and consultants. With respect to construction supervision, consultant engineers' performance was improved as ERA's enhanced institutional capacity permitted more sound engineering monitoring and control of the works. Time taken to review and process payments to consultants and contractors, and for contract administration, was reduced, as evidenced by the updating of the RSDP PMIs. ERA's audited accounts which had backlogs to 1994, were brought up to date. The EMB was established in 1998, primarily to: a) review EAs, EMPs and Resettlement Action Plans (RAPs), address safety issues and develop and implement HIV/AIDS prevention strategies; and b) monitor the implementation EMPs, RAPs and HIV/AIDS prevention activities. Client dialogue on compensation policy, resulted in a new proclamation (July 2005) that increases the benefits to project affected persons.

The impact of the Project's support in establishing ERA’s Road Inspectorate Unit (RIU) is *modest*, as there is often a lag between creating capacity and its impact on improving both financial and physical aspects of program inspection. However, the guidelines, which were prepared by the RIU, have improved program inspection. The short and long term training of staff enabled the unit to carry out road inspections including contracts financed by other donors and the GOE.

The Project had a positive impact on private sector development. This is evidenced by the establishment and strengthening of local firms who associated with international consultants and some contractors. These firms benefited from technology transfer in applying state-of-the-art techniques, with overall long-term implications for private sector capacity building.

5. Major Factors Affecting Implementation and Outcome

5.1 Factors outside the control of government or implementing agency:

Delays in mobilization and unsatisfactory performance of some contractors in the execution of the works contracts affected project implementation. This led to the extension of the credit by 2 years and unforeseen price escalation. The increase in world market prices, particularly of fuel and bitumen, was also a major factor affecting price escalation, which was outside the control of GOE and ERA. The border conflict between Ethiopia and Eritrea also contributed to mobilization delays when the major port of operation was

shifted from Assab to Djibouti.

5.2 Factors generally subject to government control:

The Borrower's commitment to sector reform was strong. Noteworthy was the progress in addressing policy issues as agreed in the LRSP, with particular reference to the autonomy of ERA, the commercialization of its operations, and the introduction of a dedicated road fund for road maintenance. But, there were shortcomings in encouraging the development of the DCI.

5.3 Factors generally subject to implementing agency control:

ERA took measures to attain the capacity required for sound planning, reviewing and approving of designs, contract administration, financial management, financial and physical inspection, axle load control, road safety, environmental and social monitoring, and the coordination and mainstreaming of HIV/AIDS actions. Procurement was given attention as a key instrument of program implementation. The application of the key principles of tendering and specification of contractual conditions improved during the life of the project. However ERA could have taken stronger measures against non- performing contractors at the early stage of project implementation. In addition, some of the RROs had difficulties in planning and managing their programs due to their inability to hire professional and skilled personnel.

5.4 Costs and financing:

The total Credit proceeds of SDR 224.5 million, equivalent to US$ 306.47, were fully disbursed. The original Credit amount was equivalent to US$ 309.2 million. The amount disbursed for Civil works is US$ 281.02 million, and Consultancy services, US$ 25.43 million, against an appraisal estimate of US$ 286.40 million, and US$ 22.7 million, respectively. As of November 24, 2005 there is an outstanding Balance of US$ 0.18 million in the special account out of the US$ 10 million advanced.

The 10 major civil works contracts were initially awarded at a total value of ETB 2,243.54 million, (equivalent to US$ 303.09 million then) against an appraisal base estimate of ETB 2,363.11, of which IDA share was estimated to be US$227.3 million. As a result of the re-bidding of the Merawi-Gondar, the total amount for the award of the 10 contracts increased to ETB 2,351.64 million (equivalent to US$ 320 million then), of which IDA share was estimated at US$ 240 million. The estimated contractual completion cost is about ETB 3,006.44 million (equivalent to about US$ 422 million), of which IDA's share is estimated at US$ 327 million with US$ 20.22 million financed under the Credit 2438, and the remaining US$ 26 million would be financed under the Credit 3438.

The major factors for the higher cost at completion included: (i) Quantity Overrun; (ii) Variation Orders; (iii) Higher than expected Price Adjustments; (iv) Changes in subsequent Legislation; (v) Financial claims; and (vii) Interest on late payments. Of the factors, price adjustment was the highest overall. The total estimate for price adjustment is ETB 739.56 million followed by quantity overrun of about ETB 214.00 million. The latter was caused by error in quantity computation during design, under-estimation during planning, and new works orders during implementation.

6. Sustainability

6.1 Rationale for sustainability rating:

The sustainability of the project is *highly likely*. The sustainability of investments was enhanced by establishing the dedicated road fund for road maintenance. The contributions to the Road Fund increased gradually from ETB 182.9 million in 98/99 to ETB 516.6 million in 03/04, with a rise in dedicated fuel levy and sales, and municipality tax. The RFA reports as of April 8, 2005 show a total cash balance of ETB 826.57 million.

Institutional strengthening and capacity building measures implemented under the project have had significant influence on sustainability. In addition, contracting out road maintenance is now an accepted practice in addressing capacity constraints at the federal and regional levels. GOE's overall capacity building program is addressing the problem of critical staff shortages. The involvement of beneficiaries and stakeholders in sector reform had also a significant sustainability dimension. Stakeholders, including the private sector were represented at RSDP review meetings and contributed to enriching policy design. The partnership of the public and private sectors in financing road maintenance also contributed to sustainability. However, the actual involvement of the private sector in road maintenance did not progress as planned, as weaknesses in the organization of local contractors, the rigidity of the commercial banking system in meeting the credit needs of contractors and the slow pace in the establishment of equipment rental enterprises became inhibiting factors.

6.2 Transition arrangement to regular operations:

The Road Maintenance Action Plan (RMAP) will be prepared by ERA and would set the basis for annual regular maintenance of the roads financed under the project. The Road Fund will also continue to allocate sufficient maintenance budget. In addition, the technical and financial audits of annual or periodic maintenance to be carried out by RFA will provide the basis for ensuring quality of maintenance activities.

7. Bank and Borrower Performance

Bank

7.1 Lending:

The Bank's performance during project preparation, as also noted by QAG in its quality at entry assessment, was *satisfactory*. The identification of the project followed various studies and investigations, which resulted in the comprehensive definition of existing situation and the identification of sectoral issues. The seminar on the Management and Financing of Roads held in Addis Ababa in June 1996, sponsored by the EU and ERA, with the assistance of Bank and the Road Maintenance Initiative (RMI), covered 3 main headings, (i) financing of road maintenance (ii) private sector development, and (iii) institutional and management reforms. The seminar involving GOE officials, representatives of donors and the private sector identified key issues and made useful recommendations for preparing the project. In addition, the Bank issued a Transport Sector Memorandum in 1996 that reviewed development of the road network, institutional organization of the transport sector, the DCI capacity, the objectives, targets, program costs and the feasibility of the RSDP, as well as that of the expansion of the network for maintenance. The assessments pertinent to road user taxation, the financing instruments for a Road Fund, cost recovery for RSDP, the impact of cost recovery on transport costs, as well as the agenda for continuing road, transport sector development, the role of the Addis-Djibouti railway and the development of civil aviation provided valuable background to the preparation of the project.

The PAD's evaluation of main sector issues and strategy together with the appraisal of the complementary dimensions of project sustainability were fundamental in establishing the significance and viability of its components. Critical risks from the view point of the project outputs to PDOs and project components to outputs were identified with their ratings together with risk minimization measures. In addition, advice to the Borrower by the Bank's task team during Project preparation contributed to compliance and efficiency in applying the Bank's procurement guidelines and standard documents.

7.2 Supervision:

The Bank supervision performance during implementation was *highly satisfactory*, considering the size of the Project and the difficulties encountered in the execution of the civil works. The Bank assigned a qualified core team that remained the same during the project life consisting of a Highway Engineer, a Transportation Economist, a Social Scientist and Environmental Specialist, an Infrastructure Operations

Officer and a Financial Specialist. The Bank also assigned HQs staff to Addis, supported by the CO staff, which enabled closer monitoring of the project and timely response to Client needs. The Bank's support by way of providing technical advice to the ERA management was vital in resolving problems of design and contract administration. In addition, support was given to ERA in meeting the requirements for key environmental and social safeguards, in the design of an HIV/AIDS prevention strategy, policy and institutional reform and other capacity building measures. The Bank's task team, including the Rural Travel and Transport Program of SSATP, shared its experience in formulating a responsive Rural Road and Transport Strategy (RRTS). The timely actions taken by the Bank in extending the original Credit closing date, and in amending the Development Credit Agreement for the ERP (Cr. 3438) to cover the shortfall of financing and the inputs by the task team to ensure the effective use of Dispute Review Experts were important for the completion of the road works.

7.3 Overall Bank performance:

The overall Bank performance was *satisfactory*. It proved responsive to emerging situations and continued to capitalize on opportunities in a dynamic approach to coping with threats to success. The task team's techniques of client and donor consultation and sharing experience from elsewhere, provided a strong basis for influencing needed policy and institutional reforms.

Borrower

7.4 Preparation:

The Borrower's performance is rated *highly satisfactory.* The ERA in consultation with the relevant ministries and agencies prepared the RSDP. ERA also participated with full commitment in the preparation of the project, and dialogue with the Donors on key sector issues, to be addressed by the project, strategic choices as well as the various assessments made by the task team. The LRSP issued by the GOE expressed commitment to institutional, procedural and policy changes for the implementation of RSDP. ERA also prepared detailed implementation schedule for the project in consultation with the Bank. The GOE moved diligently forward in fulfilling the conditions of credit effectiveness.

7.5 Government implementation performance:

Performance is rated overall as *satisfactory* as the three project development objectives have been achieved. The commitment to agreed sector reforms and principles of procurement were critical to implementing project components successfully. The GOE's sense of ownership of the project, in general, and its timely decisions on fundamental issues took on profound importance as they ultimately determined how the relevant organizations responded to the requirements for implementation. The proclamations establishing ERA as an autonomous institution and the Road Fund were of critical importance to success in the implementation of the Project. GOE also responded to institutional and capacity limitations of road departments, road safety and axle load enforcement shortcomings and cumbersome customs clearance procedures. However GOE could have moved faster in increasing the planned share of contractor executed maintenance works as depicted in the LRSP. The participation of contractors in periodic maintenance was extended under the ongoing IDA-financed Emergency Reconstruction Program; and their participation in routine maintenance is being introduced recently as part of the DFID supported program of commercializing ERA District Maintenance Organization and improving maintenance performance.

7.6 Implementing Agency:

Overall, ERA's performance is rated *satisfactory,* although performance by component is mixed. ERA has successfully managed the implementation of the 10 road contracts, as well as the construction supervision consultancy services. ERA was also effective in program monitoring and organizing and leading coordination meetings with donors, and updating the RSDP PMIs. Baseline data was established for the total of 19 indicators, which provided the basis for tracking changes relating to RSDP as a whole.

ERA's responsiveness to environmental and social safeguards requirements were assenting and constructive. Overall performance of environmental and social safeguards management for the RSDP has progressively improved, with positive developments related to compensation payments. The overall environmental and social safeguards performance is *satisfactory* and in line with Bank's policies. On the social safeguards performance, first, the anticipated higher amounts of resettlement noted by QAG as not supported by RAPs, on the Awash-Hirna-Kulubi road, was minimized during construction through careful final road location design management. In addition, proactive actions were taken by ERA to evaluate compensations paid, as part of a resettlement audit. A new compensation law has since been published in the National Gazette, July 15-2005. This is now enabling ERA to pay any supplementary compensation, and ensure acceptable payments on all road projects. A total of 5,877 PAPs were registered for all 10 contracts and they were paid compensation to an amount of ETB 59.33 million ($ 6.9 million).

On the rural travel and transport improvements, ERA coordinated and led the preparation of the RRTS which after being adopted at a stakeholders meeting, determined the framework for the village level travel and transport surveys (VLTTS) as well as the Pilot Wereda studies, which are now being implemented within the ERTTP.

Although the RIU was established with delay, the training of staff contributed to the carrying out of inspections on the completed road contracts. ERA also produced a Road Maintenance Action Plan (RMAP) and continued the commercialization of its operations in accordance with the program of 5 year capacity building set up under DFID financing.

7.7 Overall Borrower performance:

Overall borrower performance is rated as *satisfactory.* The project road works were successfully implemented, in spite of the prolongation of the contract completion dates. Government commitment to ERA's autonomy and other key institutional reforms, the introduction of the Road Fund for generating revenue for road maintenance expenditure, the commercialization of ERA's operations and the improvements in financial management were particularly very strong. ERA has institutionalized the procedures and methods established as part of the project, which have been valuable for new projects under the RSDP.

8. Lessons Learned

Policy and Institutional Reforms are critical for Project Success: An important lesson learned is the significance of deepening policy and Institutional Reforms for effectiveness, efficiency and sustainability. The success of the project is particularly attributable to policy and Institutional Reforms as well as procedural changes. These reforms and changes should be maintained, and deepened in the long-term.

Borrower Commitment, Ownership and Effective Technical Performance: In light of the above, Borrower ownership should be facilitated through a deliberate action on the part of the Bank and Development Partners to allow them to own and lead in sectoral program donor coordination. The confidence of implementing agencies (under the Model of an autonomous Roads Authority with a corporate Board) can also be enhanced with positive outcomes, when Government empowers them and lets go, making them accountable for the effectiveness of technical performance. In this context, the continuity and consistency in Bank team support over long period, including assigning TTL to the field to further strengthen the country office team, have also been acknowledged to be essential contributing factors in building trust and ensuring success in getting results on the ground.

Contractor's Performance: Notwithstanding their prequalification, some of the contractors' site management on a number of the contracts, did not appear to have the ability to manage the works efficiently and effectively, calling for additional due diligence on the part of the Client during implementation. The weaknesses in management, resource limitations in contractor's organization and inadequate planning and schedule control contributed to prolonging contractual completion dates. Through persistent and proactive actions by ERA with Bank supervision support and advice, contractors' performance was improved, leading to contract completion. The key lesson is that Borrower capacity needs to be enhanced to enable proactive and effective contract administration to ensure that contractors' performance on future works contracts is improved.

Design and Cost Variations: One lesson learnt is that design reviews carried out on earlier designs contributed to minimizing the need for high variation costs during construction; which were found to be largely within the contractual provisions of up to 15% of contract price allowed for the Engineer's approval. The other is that to ensure that cost or quantity overruns attributable to designs are further be minimized, the same consultant could be engaged for the design review and construction supervision services. This action would also assure the accountability for quality of designs and any associated corrections. In addition, the client capacity to review designs should be such as to ensure the required design quality. This capacity is therefore being established in ERA for the ongoing and future contracts under the RSDP.

Price Escalation: Price Escalation claims were generally high during the contracts execution period from 1999-2005, over which there were significant increases in world market prices for fuel and other petroleum products such as bitumen. Price variations are unavoidable; however, to keep to a minimum, the works should be completed within the contract period. Delays caused by the Employer/Consultants should be avoided as much as possible.

Disputes Handling: The use of Dispute Review Experts (DREs), which were employed for the first time under this Credit, produced significant benefits, including avoidance of costly arbitrations. DREs should therefore be used regularly and early in contract implementation in order to avoid litigation or arbitration. Amicable solutions could be found by ensuring that the rights and obligations of parties, to the contract, short of going to litigation of arbitration, were protected based on the views of DREs.

Performance Monitoring: The performance measurement system put in place under the RSDP, with financing from the EU, provided a useful means to systematically and actively share information with government and development partners, who can take action, where necessary. Monitoring was used as a tool for effective implementation and for enabling the ERA management and decision - makers to draw lessons for future projects. The important lesson is that with sufficient capacity established in the implementing agency, and the usefulness established, following a gap in the donor financing, government has committed resources for continuing the annual measurements.

9. Partner Comments

(a) Borrower/implementing agency:

The ERA's summary completion report is attached as Annex 8. However, comments provided during the ICR review meeting are included in this section: Concurring with most of the conclusions of the Bank team, ERA acknowledged that (i) Much remains to be done to enhance local contracting capacity; (ii) ERA's capacity to check the adequacy of designs prepared by Consultants is being enhanced with the support of Donors. (iii) ERA is getting more proactive at the stage of prequalification in overcoming difficulties encountered due to poor performing contractors. (iv) The ongoing

decentralization and commercialization of ERA's road maintenance functions as well as increasing the involvement of the private sector in maintenance contracts would contribute to increasing the private sector capacity. (v) As to environmental monitoring, ERA management would ensure that frequent visits are made by staff of the Environment and Safety Branch. (vii) The new proclamation on compensation rates would also enable ERA to more effectively deal with the implementation of social safeguards related to land acquisition and resettlement along project roads.

(b) Cofinanciers:

The draft ICR was sent to our development partners in the EU, AfDB, DFID, GTZ, JICA, KfW, and NDF. The NDF had no comments, but comments were provided by the DFID project officer who was in charge at the time of appraisal and during the first years of implementation. He stated that a number of factors contributed to the overall success of this project. The most significant of these factors were those which directly supported the *'highly satisfactory'* rating for the second Project Objective: Building up institutional capacity in both the public and private sectors for sustainable road development and maintenance. The success in this objective was, in turn, the result of a number of circumstances: (i) The initial quality of the implementing agency, the ERA, in particular, the effectiveness of its leadership and the commitment to all the project objectives; (ii) The detailed preparatory work for the reform agenda which had been supported by GTZ for at least a couple of years before the start of the RSDP; (iii) The comprehensive coordination from the outset between the many development partners to the road transport sector in Ethiopia; (iv) The commitment of substantial resources to the capacity building – nearly ten percent of the funding of this substantial project, – and the quality of the inputs by all partners to complement that of the Bank's by GTZ, DFID, EU, NDF, etc; (v) The continuity and quality of the WB team which engaged with an increasingly strong locally based emphasis from project preparation through to this successful completion.

(c) Other partners (NGOs/private sector):

Not Applicable.

10. Additional Information

None.

Annex 1. Key Performance Indicators/Log Frame Matrix

1. Road Network Changes

Road Network (km.)	Federal Highway	Regional Roads	Total
RSDP baseline 1997	15870	10680	26550
1998	16000	11737	27737
1999	16062	12600	28662
2000	16074	15480	31554
2001	16391	16480	32871
2002	16617	16680	33297
2003	16702	17154	33856
2004	18540	17956	36496

2. Road Density

Year	Road Density
	Index A per 1000 km2Index per 1000 population
Baseline 96/97	24.10.46
97/98	25.20.46
98/99	26.10.47
99/00	28.70.5
00/01	29.90.5
01/02	30.30.49
02/03	30.80.49
03/04	33.20.51

3. Traffic Flow

Year	Vehicle km and index by vehicle type							
	Car		Bus		Truck		Truck trailer	
	Veh-km	Index	Veh-km	Index	Veh-km	Index	Veh-km	Index
1995	804279	93.3	611,342	81.4	1,466,688	92.9	561,308	103
1996	861,689	100	751,487	100	1,597,440	100	545,022	100
1997	880,631	102.2	801,977	106.7	1,607,460	101.8	481,497	88.3
1998	978,965	113.6	894,913	119.1	1,679,839	106.4	567,685	104.2
1999	933,697	108.4	1,007,421	134.1	1,832,360	116	726,036	133.2
2000	964,913	112	934,372	124.3	1,863,942	118	741,911	136.1
2001	1,016,433	118	925,044	123.1	2,012,027	127.4	758,185	139.1
2002	1,060,742	123.1	1,048,375	139.5	2,104,443	133.2	793,891	145.7
2003	1,148,282	133.3	1,156,776	153.9	2,388,307	149.5	911,030	167.2

4. Roughness and Road Condition

Year	Roughness Index		Road Condition (%)					
			Paved Roads			Gravel Roads		
	Paved Roads	Gravel Roads	Good	Fair	Poor	Good	Fair	Poor
1995	100	100	23	21	56	18	32	50
96/97	110.8	102.5	22	23	55	20	30	50
97/98								
98/99	108.94	101.71	22	22	56	22	27	51
99/00	117	125.5	19	12	69	20	2	78
00/01	94.1	100	43	13	44	15	19	66
01/02	79.41	97.34	59	9	32	19	35	46
02/03	-	-	43	23	34	31	26	41
03/04	-	-	49	22	29	34	27	39

5. Freight and Passenger Traffic

A. Data

Road Type or Class	Length Km	1999/00	2000/01	2001/02	2002/03	2003/04
		Pass	Fr't	Pass	Fr't	Pass Fr'tPass Fr'tPass Fr't
		Birr/ km	Birr/ ton/km	Birr/ km	Birr/ ton/km	Birr/ kmBirr/ ton/kmBirr/ kmBirr/ ton/kmBirr/ kmBirr/ ton/km
Export	1482	0.07	0.36	0.08	0.21	0.080.370.070.270 .070.07
Trunk	774	0.09	0.57	0.11	0.32	0.110.430.10.30.1 30.09
Link	408	0.1	0.7	0.11	0.34	0.120.690.110.30. 140.1
Regional	246	0.11	0.9	0.11	0.33	0.110.430.110.380 .140.11
Average	2910	0.09	0.63	0.1	0.3	0.110.480.090.290 .090.09

B. Annual Traffic Indices

Index	1996/97	97/98	98/99	99/00	2000/01	01/02	02/03	03/04
Trunk Roads								
-Passenger	100	100	100	135.6	156.3	156.3	142.9	185.7
-Freight	100	130.34	130.34	114.3	63.7	85.4	60	60
Regional Roads								
-Passenger	100	100	100	97.8	93.9	93.9	100	127.3
-Freight	100	492	492	442	162.4	210	190	190

6. Maintenance Budget and Expenditure

A. Annual Amounts

Year	Ordinary Budget (mill birr)		Capital Budget (mill. Birr)		Total (mill. Birr)	
	Approved Budget	Actual Expenditure	Approved Budget	Actual Expenditure	Approved Budget	Actual Expenditure
1996/97	121.7	121.7	1203.2	437.7	1324.9	559.4
1997/98	132.3	134.2	997.4	446.6	1129.7	580.8
1998/99	155	125.8	1557.1	793.4	1712.1	919.2
1999/00	156.1	119	1107.2	681.841	1263.3	800.841
2000/01	186.2	135.7	1090.1	1100.3	1276.3	1236
2001/02	199.3	184.9	1445	1071	1644.3	1255.9
2002/03	200.6	156.3	1776.6	1622.6	1977.2	1778.9
2003/04	290	211.6	2433.7	1586.8	2723.7	1798.4

B. Annual Expenditure Ratios/Indices

Year	Maintenance Budget/Total Roads Budget	Actual Expenditures Index	Actual/Budgeted Maintenance Expenditure
1996/97	0.091	100.0	0.974
1997/98	0.118	122.4	1.087
1998/99	0.109	117.5	0.745
1999/00	0.126	100.8	0.75
2000/01	0.152	116.0	0.704
2001/02	0.156	150.0	0.692
2002/03	0.157	145.1	0.55
2003/04	0.103*	32.5	0.137

*** This lower ratio is the result of a major increase in construction expenditure.**

7. Employment Opportunity for Local Labor

	Baseline	**2002/03**	**2003/04**
Total Employment (no)	9448	17435	17952
Skilled Personnel (no)	2373	4359	4488
Unskilled Personnel (no)	7075	13076	13464
Ratio	**2001/02**	**2002/03**	**2003/04**
Ratio A: Skilled /Total	0.25	0.25	0.25
Ratio B: Unskilled/Total	0.75	0.75	0.75

8. Total Road Construction Activity (Force Account vs. Private Contract Works)

(Force Account vs. Private Contract Works)

	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04
Private Sector Executed Works									
Length (km)	271.4	246.9	476.2	158.4	361	453	651.5	606.5	679.5
Proportion of Total km	0.44	0.47	0.42	0.15	0.45	0.62	0.73	0.86	0.53
Proportion of Total km by local capital intensive contractors	0.05	0.12	0.31	0.09	0.17	0.10	0.19	0.16	0.27
Amount (Birr million)	76.5	105.7	346.9	138.5	470.2	937.7	967.6	1113.7	1173.5
Proportion of Total Value	0.32	0.58	0.76	0.53	0.78	0.9	0.93	0.94	0.93
Proportion of Total value by local capital intensive contractors	0.04	0.26	0.28	0.29	0.14	0.13	0.12	0.16	0.13
Number International contractors	9	7	3	1	6	9	13	12	14
Number Local contractors	2	2	12	12	12	2	5	6	11
Average size International contract (Birr million)	7.32	8.17	72.55	63.37	64.7	89.63	64.64	77.45	71.86
Average size Local contract (Birr million)	5.3	24.25	10.77	6.257	6.83	65.5	25.45	30.73	30.73
Public Sector Executed Works									
Length (km)	341	275	645.9	880.9	445.7	277	245	96	244.2
Proportion of Total km	0.39	0.35	0.12	0.06	0.27	0.52	0.53	0.70	0.46
Amount (Birr million)	162.3	78	109.1	121.6	134	106.2	74.8	64.4	103.9
Proportion of Total Value	0.28	0.31	0.48	0.24	0.64	0.77	0.81	0.79	0.79
ALL WORKS									
Total (km)	**612.4**	**521.9**	**1122.1**	**1039.3**	**806.7**	**730.2**	**896.5**	**702.5**	**923.7**
Total Amount (Birr million)	**238.8**	**183.7**	**456**	**260.1**	**604.2**	**1043.9**	**1042.4**	**1178.1**	**238.8**

9. Journey Time (Travel Time)

Road Type	Vehicle Type	2002/03	2003/04
		Journey Time (Min/km)	IndexJourney Time (Min/km)Index
Paved Roads	Heavy Goods Vehicle	1.90	84.401.7175.96
	Light Vehicle	0.86	77.730.7769.95
Gravel Roads	Heavy Goods Vehicle	2.84	93.552.5684.20
	Light Vehicle	2.87	185.232.58166.70
Roads in the Vicinity of Urban Centers	Heavy Goods Vehicle	2.05	60.001.8554.00
	Light Vehicle	1.17	60.001.0554.00

Annex 2. Project Costs and Financing

Project Cost by Component (in US$ million equivalent)

Component	Appraisal Estimate US$ million	Actual/Latest Estimate US$ million	Percentage of Appraisal
Civil Works	260.40	219.77	84.39
Consultant Services/TA/Training	20.60	17.00	82.52
Goods	0.10	0.00	0
Total Baseline Cost	281.10	236.77	
Physical Contingencies	16.86	24.50	145
Price Contingencies	11.24	72.10	640
Total Project Costs	309.20	333.37	
Total Financing Required	309.20	333.37	

Please note that final project costs include the outstanding balance being financed under Credit 3438-ET

Project Costs by Procurement Arrangements (Appraisal Estimate) (US$ million equivalent)

Expenditure Category	Procurement Method[1] ICB	NCB	Other[2]	N.B.F.	Total Cost
1. Works	361.74	0.00	0.00	55.30	417.04
	(286.40)	(0.00)	(0.00)	(0.00)	(286.40)
2. Goods	0.00	0.00	0.10	0.00	0.10
	(0.00)	(0.00)	(0.10)	(0.00)	(0.10)
3. Services	0.00	0.00	34.00	36.90	70.90
	(0.00)	(0.00)	(22.70)	(0.00)	(22.70)
4. Studies	0.00	0.00	0.00	2.60	2.60
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
5. Miscellaneous	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
6. Miscellaneous	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Total	361.74	0.00	34.10	94.80	490.64
	(286.40)	(0.00)	(22.80)	(0.00)	(309.20)

Project Costs by Procurement Arrangements (Actual/Latest Estimate) (US$ million equivalent)

Expenditure Category	Procurement Method[1]				Total Cost
	ICB	NCB	Other[2]	N.B.F.	
1. Works	401.78 (310.61)	0.00 (0.00)	0.00 (0.00)	59.63 (0.00)	461.41 (310.61)
2. Goods	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
3. Services	0.00 (0.00)	0.00 (0.00)	30.04 (22.76)	14.53 (0.00)	44.57 (22.76)
4. Studies	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	28.23 (0.00)	28.23 (0.00)
5. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
6. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Total	401.78 (310.61)	0.00 (0.00)	30.04 (22.76)	102.39 (0.00)	534.21 (333.37)

[1/] Figures in parenthesis are the amounts to be financed by the Bank Loan. All costs include contingencies.

[2/] Includes civil works and goods to be procured through national shopping, consulting services, services of contracted staff of the project management office, training, technical assistance services, and incremental operating costs related to (i) managing the project, and (ii) re-lending project funds to local government units.

Project Financing by Component (in US$ million equivalent)

Component	Appraisal Estimate			Actual/Latest Estimate			Percentage of Appraisal		
	IDA	Govt.	CoF.	IDA	Govt.	CoF.	IDA	Govt.	CoF.
Rehabiltation & Strengthening of Trunk Roads	108.40	46.40		100.87	28.87		93.1	62.2	
Upgrading of Trunk Roads	178.00	131.60		209.74	121.93		117.8	92.7	
Consultant Services for Civil Works Supervision	20.00	12.50		20.36	16.67		101.8	133.4	
Inst. Strengthening & Capacity building for ERA & RROs	2.80	23.50	14.90	2.40	18.84	14.53	85.7	80.2	97.5

Annex 2. Project Costs and Financing

Project Cost by Component (in US$ million equivalent)

Component	Appraisal Estimate US$ million	Actual/Latest Estimate US$ million	Percentage of Appraisal
Civil Works	260.40	219.77	84.39
Consultant Services/TA/Training	20.60	17.00	82.52
Goods	0.10	0.00	0
Total Baseline Cost	281.10	236.77	
Physical Contingencies	16.86	24.50	145
Price Contingencies	11.24	72.10	640
Total Project Costs	309.20	333.37	
Total Financing Required	309.20	333.37	

Please note that final project costs include the outstanding balance being financed under Credit 3438-ET

Project Costs by Procurement Arrangements (Appraisal Estimate) (US$ million equivalent)

Expenditure Category	Procurement Method[1]				Total Cost
	ICB	NCB	Other[2]	N.B.F.	
1. Works	361.74 (286.40)	0.00 (0.00)	0.00 (0.00)	55.30 (0.00)	417.04 (286.40)
2. Goods	0.00 (0.00)	0.00 (0.00)	0.10 (0.10)	0.00 (0.00)	0.10 (0.10)
3. Services	0.00 (0.00)	0.00 (0.00)	34.00 (22.70)	36.90 (0.00)	70.90 (22.70)
4. Studies	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	2.60 (0.00)	2.60 (0.00)
5. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
6. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Total	361.74 (286.40)	0.00 (0.00)	34.10 (22.80)	94.80 (0.00)	490.64 (309.20)

Project Costs by Procurement Arrangements (Actual/Latest Estimate) (US$ million equivalent)

Expenditure Category	Procurement Method[1]				Total Cost
	ICB	NCB	Other[2]	N.B.F.	
1. Works	401.78 (310.61)	0.00 (0.00)	0.00 (0.00)	59.63 (0.00)	461.41 (310.61)
2. Goods	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
3. Services	0.00 (0.00)	0.00 (0.00)	30.04 (22.76)	14.53 (0.00)	44.57 (22.76)
4. Studies	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	28.23 (0.00)	28.23 (0.00)
5. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
6. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Total	401.78 (310.61)	0.00 (0.00)	30.04 (22.76)	102.39 (0.00)	534.21 (333.37)

[1/] Figures in parenthesis are the amounts to be financed by the IDA Credit. All costs include contingencies.

[2/] Includes civil works and goods to be procured through national shopping, consulting services, services of contracted staff of the project management office, training, technical assistance services, and incremental operating costs related to (i) managing the project, and (ii) re-lending project funds to local government units.

Project Financing by Component (in US$ million equivalent)

Component	Appraisal Estimate			Actual/Latest Estimate			Percentage of Appraisal		
	IDA	Govt.	CoF.	IDA	Govt.	CoF.	IDA	Govt.	CoF.
Rehabiltation & Strengthening of Trunk Roads	108.40	46.40		100.87	28.87		93.1	62.2	
Upgrading of Trunk Roads	178.00	131.60		209.74	121.93		117.8	92.7	
Consultant Services for Civil Works Supervision	20.00	12.50		20.36	16.67		101.8	133.4	
Inst. Strengthening & Capacity building for ERA & RROs	2.80	23.50	14.90	2.40	18.84	14.53	85.7	80.2	97.5

Annex 3. Economic Costs and Benefits

1. Background and Description of the Four Projects: The Feasibility Study for the Rehabilitation/Upgrading of five roads was undertaken by TecnEcon, in July 1997. One of the projects, Alemgena-Sodo was dinanced by the ADB and is not included in this re-evaluation. The four roads under consideration are: (i) Modjo-Awash-Mille, (ii) Woldiya-Adigrat-Zalambessa (two sections), (iii) Debre Markos -Gondar, and (iv) Awash-Kulubi-Dire Dawa-Harar.

1.1. Modjo-Awash-Mille (442 km): The 442 km road from Modjo to Mille is part of the major trunk roads in Ethiopia connecting Addis Ababa with the Red Sea Ports of Assab and Djibouti. In 1997, a Design Study was conducted followed by Design Review in mid-1998. Thereafter, the civil works was awarded in 1999 as three contracts (Modjo-Awash Arba, Awash Arba-Gewane and Gewane-Mille). The project consists of rehabilitation of the existing asphalt paved road to asphalt concrete surface with a better riding quality, strength and safety. For the re-evaluation, the project road was treated as two sections (Modjo-Awash Arba & Awash Arba-Mille); as the works of the second section, Awash Arba-Mille, was completed substantially earlier than the other, including the 70 km of the Gewane-Mille section financed under Cr. 2438 ET.

1.2. D/Markos-Gondar (428 km): The 428 km road from Debre Markos to Gondar lies in the North Western Corridor in the Amhara Regional State and serves a fertile area with reported arable and livestock surpluses. The road serves as the main access route to the northern regions of Gondar & Tigray. In 1997, a Design Study was conducted followed by Design Review in mid-1998. Thereafter, the civil works of the project was given out in 1999 as two contracts (D/Markos-Merawi & Merawi-Gondar). The project consists of upgrading the existing gravel surfaced road to an asphalt concrete surface for a better riding quality, strength and safety. For the re-evaluation, the project road was treated as two sections (D/Markos-Merawi & Merawi-Gondar); as the works of the second section, Merawi-Gondar, was started substantially later than the due to re-tendering.

1.3. Awash-Kulubi-Dire Dawa-Harar (311 km): This 311 km road is in two distinct parts; one section starting from Awash, through Kulubi to Dengego, part of the route which connects Addis Ababa with the east and south eastern parts of the country (as well as forming a strategic link to the borders with Djibouti and Somalia), and another section between Dire Dawa and Harar, part of a wider international route between Djibouti and Somalia. In 1997, a Design Study was conducted followed by Design Review in mid-1998. Thereafter, the civil works was awarded in 1999 as three contracts (Awash-Hirna, Hirna-Kulubi and Kulubi-Dengego-Harar). The project consists of upgrading the existing gravel surfaced road (apart from the third which had paved sections) to an asphalt concrete surface for a better riding quality, strength and safety. For the re-evaluation, the project road was treated as three sections (Awash-Hirna, Hirna-Kulubi and Kulubi-Dengego-Harar); as the works of the second section, Hirna-Kulubi, was completed substantially earlier than the others.

1.4. Woldiya - Adigrat – Zalambessa (Two sections): The 407 km road between Woldiya and Zalambessa is part of the road linking the Addis Ababa with the Eritrean border through to Asmara and the port of Massawa. In 1997, a Design Study was conducted followed by Design Review later in mid-1998. Thereafter, the civil works of two sections of the road were awarded in 1999 under Credit 3032-ET (Woldiya-Alamata & Betamriam-Wukro). One contract - Alamata-Betemariam road - is being constructed with Government funds. The Wukro to Zalambessa section has a sealed bitumen surface. The works on sections under review consisted of upgrading existing gravel to an asphalt concrete surface for better riding quality, strength and safety.

2. Methodology and Assumptions:

2.1. The economic viability of the projects was reassessed applying the same methodology used in conducting the Feasibility Study. The intervention on the four road projects is expected to lead to reduced vehicle operating costs (VOCs), decreased maintenance costs (both periodic & routine) and travel time costs over the life of the project. Now that the projects under consideration are concluded, the Economic Internal Rate of Return (EIRR) and Net Present Value of the roads were recalculated using actual data to look at the viability of the projects after construction. Recent information was taken into account to validate the results.

2.2. The EIRR calculation is based on five major assumptions: (i) The economic life of the project is assumed to be 20 years. No residual value is assumed. (ii)Project construction costs comprise of revised actual costs for civil works and supervision costs. (iii) All taxes and other transfer payments are removed from the financial cost and benefit streams. The financial costs and benefits are converted to economic costs and benefits using a standard conversion factor of 0.85. (iv) VOC inputs and maintenance costs are updated to take into account recent estimates. (v) Opportunity cost of capital was used as 12% to be consistent with the original Feasibility Study conducted in July 1997 (the opportunity cost of capital in Ethiopia is 10%).

3. Estimation of Economic Costs and Benefits:

3.1. Normal Traffic & Traffic Growth Rates. ERA carries out periodic traffic surveys to assess growth and vehicle composition on selected locations throughout the country. The section below details the trend in normal traffic from the year construction has started to the year the road has been opened to traffic.

3.1.1. Modjo-Awash-Mille. Normal traffic has been updated to take account of ERA's recent classified traffic count. The Annual Average Daily Traffic on the project road (Modjo-Mille) from the year 1999 till 2003 is shown in the table below.

Modjo-Mille Average Annual Daily Traffic
(Year 1999 - 2003)

Year	Length (km)	Car	Land Rover	Small Bus	Large Bus	Small Truck	Medium Truck	Heavy Truck	Truck & Trailer	**Total**
1999	442	134	223	248	110	123	180	169	344	**1530**
2000	442	151	269	228	95	129	152	159	450	**1632**
2001	442	142	279	218	92	184	132	141	428	**1617**
2002	442	145	292	218	92	167	125	119	434	**1592**
2003	442	200	310	287	146	244	198	250	556	**2190**

As can be seen from the table above, there is some fluctuation from year to year partly due to the upgrading work. The average growth rate of traffic from the year 1999-2003 is 10.4% on average. For the remaining years of the analysis two sets of growth rates have been assumed; traffic is assumed to grow at 7% to 2009 and 5% to 2015.

3.1.2. Woldiya-Zalambessa. Normal traffic has been updated to take account of ERA's recent classified traffic count. The Annual Average Daily Traffic on the project road (Woldiya-Zalambessa) from the year 1999 till 2003 is shown in the table below.

Woldiya-Zalambessa Average Annual Daily Traffic
(Year 1999 - 2003)

Year	Length (km)	Car	Land Rover	Small Bus	Large Bus	Small Truck	Medium Truck	Heavy Truck	Truck & Trailer	**Total**
1999	407	4	98	31	33	50	40	95	77	**428**
2000	407	1	104	50	24	60	57	72	72	**439**
2001	407	1	81	55	26	51	52	79	57	**402**
2002	40	1	75	74	33	52	71	76	61	**443**
2003	407	1	77	77	34	56	80	85	61	**472**

As can be seen from the table above, there is some fluctuation from year to year partly due to the upgrading work. The average growth rate of traffic from the year 1999-2003 is 3% on average. For the remaining years of the analysis two sets of growth rates have been assumed; traffic is assumed to grow at 7% to 2009 and 5% to 2015.

3.1.3. Debre Markos-Gondar: Normal traffic has been updated to take account of ERA's recent classified traffic count. The Annual Average Daily Traffic on the project road (D/Markos-Gonder) from the year 1999 till 2003 is shown in the table below.

Debre Markos-Gonder Average Annual Daily Traffic
(Year 1999 - 2003)

Year	Length (km)	Car	Land Rover	Small Bus	Large Bus	Small Truck	Medium Truck	Heavy Truck	Truck & Trailer	**Total**
1999	428	13	223	48	143	97	107	267	92	**990**
2000	428	12	231	52	122	86	132	249	112	**996**
2001	428	10	224	53	129	99	169	253	126	**1063**
2002	428	15	236	69	141	119	192	265	144	**1181**
2003	428	14	309	101	148	130	258	277	190	**1427**

As can be seen from the table above, there is some fluctuation from year to year partly due to the upgrading work. The average growth rate of traffic from the year 1999-2003 is 9.8% on average. For the remaining years of the analysis two sets of growth rates have been assumed; traffic is assumed to grow at 7% to 2009 and 5% to 2015.

3.1.4. Awash-Kulubi-Dire Dawa-Harar: Normal traffic has been updated to take account of ERA's recent classified traffic count. The Annual Average Daily Traffic on the project road (Awash-Harar) from the year 1999 till 2003 is shown in the table below.

Awash-Harar Average Annual Daily Traffic
(Year 1999 - 2003)

Year	Length (km)	Car	Land Rover	Small Bus	Large Bus	Small Truck	Medium Truck	Heavy Truck	Truck & Trailer	**Total**
1999	311	130	100	243	66	66	75	84	52	**817**
2000	311	110	152	239	35	72	64	99	36	**807**
2001	311	100	149	242	36	74	78	153	55	**885**
2002	311	91	139	267	36	73	108	163	60	**936**
2003	311	103	118	287	48	128	137	141	77	**1038**

As can be seen from the tables above, there is some fluctuation from year to year partly due to the upgrading work. The average growth rate of traffic from the year 1999-2003 is 6.8% on average. For the remaining years of the analysis two sets of growth rates have been assumed; traffic is assumed to grow at 7% to 2009 and 5% to 2015.

3.2. Construction Costs

3.2.1. Modjo-Awash-Mille: construction costs were estimated at 999.1 million Birr. The actual construction cost/km for Gewane-Mille road is 2.3 million Birr- implying that cost has much more increased. The total financial and economic cost for the road is shown below:

Cost in million Birr

Link	**Length (km)**	**Financial Cost**	**Economic Cost**
Modjo-Mille	442	999.1	849.2

3.2.2. Woldiya-Alamata & B/Mariam-Wukro: Construction costs were estimated at 507.8 million Birr. The actual construction cost/km for the two sections (Woldiya-Alamata & B/Mariam-Wukro) is 2.6 million Birr- implying that cost has much more increased. The total financial and economic cost for the road is shown below:

Cost in million Birr

Link	**Length (km)**	**Financial Cost**	**Economic Cost**
Woldiya-Alamata	78.5	203.8	173.2
B/Mariam-Wukro	117	304.0	258.4

3.2.3. Debre Markos-Gondar: Construction costs were estimated at 1146.4 million Birr. The actual construction cost/km for D/Markos-Gonder road is 2.3 million Birr- implying that cost has much more increased. The total financial and economic cost for the road is shown below:

Cost in million Birr

Link	**Length (km)**	**Financial Cost**	**Economic Cost**
D/Markos-Gonder	428	1146.4	974.4

3.2.4. Awash-Kulubi-Dire Dawa-Harar; Construction costs were estimated at 788.5 million Birr. The actual construction cost/km for Gewane-Mille road is 2.4 million Birr- implying that cost has much more increased. The total financial and economic cost for the road is shown below:

Cost in million Birr

Link	Length (km)	Financial Cost	Economic Cost
Awash-Harar	311	788.50	670.2

3.3. Analysis Period

3.3.1. Modjo-Awash-Mille: Construction was assumed to take two years commencing at the beginning of 1998. However, the project actually took three/four years starting in April 1999; one section (Modjo-Awash Arba) was completed in December 2004 -with a delay of three years- while the other section (Awash Arba-Mille) was completed in June 2002, with a delay of only one year. The economic life of the project ends in 2019 (i.e., a 20 year analysis period is assumed) with no residual value.

3.3.2. Woldiya-Alamata & B/Mariam-Wukro: Construction was assumed to take two years commencing at the beginning of 1998. However, the project actually took four years starting in April 1999 and one section (Woldiya-Alamata) was completed in February 2003 and the other section (B/Mariam-Wukro) was completed in May 2003, with a delay of two years. The economic life of the project ends in 2019 (i.e., a 20 year analysis period is assumed) with no residual value.

3.3.3. Debre Markos-Gondar: Construction was assumed to take two years commencing at the beginning of 1998. However, one section (D/Markos-Merawi) took four years starting in April 1999 and was completed in February 2003 -with a delay of two years-; while the other section (Merawi-Gonder) took three years starting in October 2001 and was completed in October 2004 -with a delay of one year-. The economic life of the project ends in 2019/2021 (i.e., a 20 year analysis period is assumed) with no residual value.

3.3.4. Awash-Kulubi-Dire Dawa-Harar: Construction was assumed to take two years commencing at the beginning of 1998. However, the project actually took three/four years starting in April 1999; two sections (Awash-Hirna & Kulubi-D/Dawa-Dengego-Harar) was completed in October 2003 -with a delay of two years- while the other section (Hirna-Kulubi) was completed in March 2002, with a delay of only one year. The economic life of the project ends in 2019 (i.e., a 20 year analysis period is assumed) with no residual value.

4. Evaluation of Results

The economic model used for the analysis is HDM-III to be consistent with the original analysis. The model calculates benefits in the form of savings in VOCs, road maintenance costs and travel time costs. Discounted benefits are then compared to discounted costs to produce measures of worth. The results of the HDM-III analysis during ICR and at appraisal are summarised below.

Modjo-Awash-Mille

From the table below, it can be seen that Modjo-Mille road is still viable with an EIRR higher than 12 percent even though the actual cost of rehabilitation has almost doubled.

Summary of Economic Evaluation for the Rehabilitation of Modjo-Mille road

NPV in million Birr

Link Name	*Length (km)*	*Economic Indices*	*During ICR*	*At appraisal*
Modjo-Mille	442	NPV at 12% Discount rate	4476.4	919.4
		EIRR (%)	34.5	20.3

Woldiya-Alamata & B/Mariam-Wukro

From the table below, it can be seen that the sections of Woldiya-Alamata & B/Mariam-Wukro road are still viable with an EIRR higher than 12 percent even though the actual cost of upgrading has almost doubled.

Summary of Economic Evaluation for the Upgrading of Woldiya-Alamata & B/Mariam-Wukro sections

NPV in million Birr

Link Name	*Length (km)*	*Economic Indices*	*During ICR*	*At appraisal*
Woldiya-Alamata & B/Mariam-Wukro	196	NPV at 12% Discount rate	1269.6	205.4
		EIRR (%)	26.0	16.3

Debre Markos-Gondar

From the table below, it can be seen that D/Markos-Gonder road is still viable with an EIRR higher than 12 percent even though the actual cost of upgrading has almost doubled.

Summary of Economic Evaluation for the Upgrading of D/Markos-Gonder road

NPV in million Birr

Link Name	*Length (km)*	*Economic Indices*	*During ICR*	*At appraisal*
D/Markos-Gonder	429	NPV at 12% Discount rate	2,439.2	162.5
		EIRR (%)	29.3	14.3

Awash-Kulubi-Dire Dawa-Harar

From the table below, it can be seen that Awash-Harar road is still viable with an EIRR higher than 12 percent even though the actual cost of upgrading has almost doubled.

Summary of Economic Evaluation for the Upgrading of Awash-Harar road

NPV in million Birr

Link Name	***Length (km)***	***Economic Indices***	***During ICR***	***At appraisal***
Awash-Harar	311	NPV at 12% Discount rate	2522.9	947.2
		EIRR (%)	30.7	25.2

Annex 4. Bank Inputs

(a) Missions:

Stage of Project Cycle	No. of Persons and Specialty (e.g. 2 Economists, 1 FMS, etc.)		Performance Rating	
Month/Year	Count	Specialty	Implementation Progress	Development Objective
Identification/Preparation				
June 1, 1996	*8*	TEAM LEADER (1); SR. TRANSPORT ECONOMIST (1); RMI TASK MANAGER (1); REGIONAL PROCUREMENT ADVISER (1); SR. ACCOUNTANT (1); CONSULTANT (`1); ENVIRONMENTAL SPECIALIST (1); INFRASTRUCTURE SPECIALIST (1)	S	S
Pre-apprasisal 03/24/1997	*9*	TEAM LEADER (1); TRANSPORT ECONOMIST (1); SR. ACCOUNTANT (1); HIGHWAY ENGINEER (1); TRANSPORT PLANNER (1); INFRASTRUCTURE SPEC. (1); ENVIRONMENTAL SPECIALIST (1); DIVISIONAL ENGINEER (1); OPERATIONS ANALYST (1)		
Appraisal/Negotiation				
Appraisal 09/20/1997	*10*	TEAM LEADER (1); PR. TRANSPORT ECO. (1); FINANCIAL MGT. SPE. (1); HIGHWAY ENG. (1); TRANSPORT PLANNER (1); INFRASTRUCTURE SPEC. (1); SR. COUNSEL (1); ENVIRONMENTAL SPEC. (1); RURAL TRANSPORT ECO. (1); OPERATIONS ANALYST (1)	S	S
Negotiation 11/21/1997	*11*	TEAM LEADER (1); PR. TRANSPORT ECO. (1); SR. FINANCIAL MGT. SPE. (1); HIGHWAY ENG. (1); TRANSPORT PLANNER (1); OPERATION OFFICER. (1); SR. COUNSEL (1); ENVIRONMENTAL SPEC. (1); RURAL TRANSPORT ECO. (1);		

			OPERATIONS ANALYST (1) DISBURSEMENT OFFICER (1)		
Supervision					
	10/30/1998	*4*	TEAM LEADER (1); ROADS ENGINEER (1); RTTP (2)	S	S
	06/26/1999	*6*	TASK TEAM LEADER (1); HIGHWAY ENGINEER (1); INFRASTRUCTURE SPEC. (1); SR. ACCOUNTANT (1); SOCIAL SCIENTIST (1); OPERATIONS ANALYST (1)	HS	S
	10/21/1999	*5*	SR. HIGHWAY ENGINEER (1); HIGHWAY ENGINEER (1); INFRASTRUCTURE SPEC. (1); SOCIAL SCIENTIST (1); SR. ACCOUNTANT (1)	HS	S
	06/19/2000	*5*	SR. HIGHWAY ENGINEER (1); HIGHWAY ENGINEER (1); SOCIAL SCIENTIST (1); PROG.ASST./SOCIOLOGIST (1); SR. ACCOUNTANT (1)	S	S
	10/19/2000	*3*	SR.HWY.ENGR. (TL) (1); OPEATIONS OFFICERS (1); FINANCIAL SPECIALIST (1)	S	S
	06/28/2001	*5*	TASK TEAM LEADER (1); ENVIRONMENTAL SPEC. (1); SOC.SCIENTIST/ENV.SPEC (1); SR.OPERATIONS OFFICER (1); FIN.MGMT.SPECIALIST (1)	S	S
	12/17/2001	*8*	SR.HWY.ENGR.(TTL) (1); SOCIAL SCIENTIST (1); ECONOMIST (1); SR.OPERATIONS OFFICER (1); FIN.MGMT.SPECIALIST (1); LEAD PROC.SPECIALIST (1); SECTOR MANAGER (1); PRIVATE SECTOR DEV. (1)	S	S
	03/12/2002	*9*	SR.HWY.ENGR.(TTL) (1); ECONOMIST (1); INTERN (1); SOCIAL SCIENTIST (1); HIGHWAY ENGINEER (1); SR. OPERATIONS OFFICER (1); FIN. MANAGEMENT SPEC. (1); SECTOR MANAGER AFTTR (1); HIGHWAYS ADVISER (1)	S	S
	03/28/2003	*5*	SR.HWY.ENGINEER (TTL) (1); SR.HIGHWAY ENGINEER (1); SR. OPERATIONS OFFICER	S	S

		(1); SOC.SCIENTIST/ENVN.SP. (1); OPERATIONS ANALYST (1)		
04/14/2004	*7*	TASK TEAM LEADER (1); HIGHWAY ENGINEER (1); SOC. SCIENTIST - RESET (1); RURAL TRANSPORT (1); TR. ECON/URBAN TRAN SP (1); FINAN. MGT. SPECIALIST (1); PROG. ASSISTANT (1)	S	S
12/20/2004	*7*	TEAM LEADER (1); SR. TRANSPORT SPE. (2); SOCIAL SCIENTIST (1); FINANCIAL SPE. (1); SR.TRANSPORT ECO. (1); PROGRAM ASS. (1)	S	S
10/18/2002- to project closing and ICR preparation	*7*	The project was supervised from the field with the assignment of the TTL, and a Sr. Transport Specialist in the Country Office together with a Financial Management Specialist, and with periodic visits by a Social scientist, Environmental Spe., Transport Economist, and Rural Transport Specialist.	S	S

(b) Staff:

Stage of Project Cycle	Actual/Latest Estimate	
	No. Staff weeks	US$ ('000)
Identification/Preparation	80.00	207,544.05
Appraisal/Negotiation	97.00	256,377.95
Supervision	240.00	832,300.09
Total	417.00	1,296,222.09

Annex 5. Ratings for Achievement of Objectives/Outputs of Components

(H=High, SU=Substantial, M=Modest, N=Negligible, NA=Not Applicable)

	Rating
☐ *Macro policies*	○ *H* ○ *SU* ○ *M* ○ *N* ● *NA*
☒ *Sector Policies*	● *H* ○ *SU* ○ *M* ○ *N* ○ *NA*
☒ *Physical*	○ *H* ● *SU* ○ *M* ○ *N* ○ *NA*
☒ *Financial*	○ *H* ● *SU* ○ *M* ○ *N* ○ *NA*
☒ *Institutional Development*	○ *H* ● *SU* ○ *M* ○ *N* ○ *NA*
☒ *Environmental*	○ *H* ● *SU* ○ *M* ○ *N* ○ *NA*
Social	
☒ *Poverty Reduction*	○ *H* ● *SU* ○ *M* ○ *N* ○ *NA*
☐ *Gender*	○ *H* ○ *SU* ○ *M* ○ *N* ● *NA*
☐ *Other (Please specify)*	○ *H* ○ *SU* ○ *M* ○ *N* ○ *NA*
☒ *Private sector development*	○ *H* ○ *SU* ● *M* ○ *N* ○ *NA*
☐ *Public sector management*	● *H* ○ *SU* ○ *M* ○ *N* ○ *NA*
☐ *Other (Please specify)*	○ *H* ○ *SU* ○ *M* ○ *N* ● *NA*

Annex 6. Ratings of Bank and Borrower Performance

(HS=Highly Satisfactory, S=Satisfactory, U=Unsatisfactory, HU=Highly Unsatisfactory)

6.1 Bank performance	*Rating*			
☒ *Lending*	○ *HS*	● *S*	○ *U*	○ *HU*
☒ *Supervision*	● *HS*	○ *S*	○ *U*	○ *HU*
☒ *Overall*	○ *HS*	● *S*	○ *U*	○ *HU*

6.2 Borrower performance	*Rating*			
☒ *Preparation*	● *HS*	○ *S*	○ *U*	○ *HU*
☒ *Government implementation performance*	○ *HS*	● *S*	○ *U*	○ *HU*
☒ *Implementation agency performance*	○ *HS*	● *S*	○ *U*	○ *HU*
☒ *Overall*	○ *HS*	● *S*	○ *U*	○ *HU*

Annex 7. List of Supporting Documents

1. World bank, "Road Sector Development Program Support Project," Project Appraisal Document, Report No. 17225-ET, December 18, 1997.
2. Bank Project Status Reports/Implementation Status Reports (20 No.) including updates and Mission Aide Memoires - 1998-2005.
3. Ethiopian Roads Authority. Road Sector Development Program Support Project (Cr. 3032-ET). Revised Project Implementation Plan. May 2005.
4. Supporting Documents Prepared by Team:
   (i) Consultant's Implementation Completion Report with detailed Economic Re-evaluation of Project Roads, October 2005
   (ii) Consultant Report on the Assessment of the Implementation of Ten Civil Works Contracts, October 2005.
5. Ethiopian Roads Authority. Letter of Proposal for Utilization of Credit Proceeds from Cr. 3032-ET. May 27, 2005.
6. Consultant's Monthly or Quaterly Progress Reports on the Implementation of the 10 works contracts.

Additional Annex 8. Borrower's Summary Report

I. INTRODUCTION

In accordance with its road sector strategy, the FDRE decided to obtain credit from International Development Association (IDA) for financing the rehabilitation/ upgrading of a selected road system under its Road Sector Development Program. Accordingly, the Association agrees to lend to the Borrower, on the terms and condition set forth or referred to in the Development Credit Agreement, an amount in various currencies equivalent to two hundred twenty-four million and five hundred thousand Special Drawing Rights [SDR 224,500,000].

The IDA Credit No. 3032-ET for the implementation of Road Sector Development Program Support Project1 (RSDPSP1) was signed between Federal Democratic Republic of Ethiopia [the Borrower] and International Development Association on 25th January 1998 for an amount of US$ 309.2 (SDR 224.500 Million). The Credit was finally declared effective on 6th May 1998 after the fulfillment of all conditions of effectiveness. The original closing date was set at 31st January 2004. However, the credit closing date was revised and extended up to May 2005.

This Credit Closing and Implementation Completion Report presents whether the project achieved its objective or not. The report contains an assessment of Borrowers and Bank's performance, the physical accomplishment to date and analysis of project costs by component, showing actual costs to date compared to appraisal estimates (Loan Utilization). It also indicates the Environmental and Social Impact of each road project and major factors affecting implementation and lessons learned.

II. OBJECTIVES OF THE PROJECT

The major objective of the Road Sector Development Program Support Project1 [RSDPSP1] is to contribute to Ethiopian economic development by (1) improving trunk road and regional rural road access and utilization to meet the agricultural and other economic development needs; (2) building up the institutional capacity in both the public and private sectors for sustainable road development and maintenance; and (3) Providing economic opportunity for the rural poor both through increased employment in rural road works and development of appropriate and affordable means of transport and services.

III. PROJECT DESCRIPTION AND BACKGROUND

The project consisted of the following components for which an IDA credits 3032-ET of US$ 309.2 million (SDR 224.5 million) was allocated: -

A. Rehabilitation of Trunk Roads

i. 442.13 kms of Modjo-Awash Arba- Mille road under three Contracts, including the

provision of technical advisory services;
ii. 80 kms of Kulubi- Dengego and Dire Dawa- Harar road under one Contract, including the provision of technical advisory services;

B. Upgrading of Trunk Roads (from gravel to asphalt pavement)
i. 231.4 kms of Awash- Kulubi road under two Contracts, including the provision of technical advisory services;
ii. 427.8 kms of Deber Markos- Gonder road under two Contracts, including the provision of technical advisory services; and
iii. 195.46 kms of Woldiya- Alamata and Betemariam- Wukro roads under two Contracts, including the provision of technical advisory services.

C. Institutional Capacity Building
1. Establishment of an inspection unit within ERA, through provision of technical advisory services and training, and acquisition of equipment.

2. Strengthening the capacities of RROs in the Afar, Beneshangul-Gumuz, Gambella and Somalia regions of the Borrower, in the implementation of network inventory systems, carrying out of road condition surveys, planning of road maintenance, road construction, and contract and financial management, through provision of technical advisory services and training, and acquisition of equipment.

3. Provision of technical advisory services for the preparation of future rural roads development programs.

IV. ASSESSMENT OF BORROWER AND BANK PERFORMANCE

4.1 Borrower

The Government of Ethiopia

The road rehabilitation project was initiated by the Government of Ethiopia through the Ministry of Finance and Economic Development (MoFED) which requested about SDR 224.5 million (USD309.2.0 million) from IDA to restore and improve the main import-export of the country; and to support the implementation of Road Sector Development Program (RSDPI). Accordingly, the IDA Credit No. 3032-ET for RSDPSPI was signed between IDA & the Government of Ethiopia on 25th January 1998; and the credit was finally declared effective on 6th May 1998 after the fulfillment of all the conditions of effectiveness. For the execution of the project, the Government of Ethiopia was declared its commitment to the objective of the project as set forth in schedule 2 to the Agreement; and has also made every possible follow up, during the formulation and implementation of the project. The Government of Ethiopia, through MoFED, has also reviewed quarterly construction progress report to ensure conformity to work schedule and alert contractors; through implementing Agency, from possible delays and consequences.

Implementing Agency

The Ethiopian Roads Authority (ERA), the legal authorized agency of the Federal Democratic of Ethiopia (FDRE), responsible for management of the country's roads, is the Implementing Agency. The Authority has over the project period been re- organized into suitable three main departments to facilitate implementation of Road Sector Development Program Support (RSDP) I.

For the purposes of the project, ERA has opened and maintained in dollars a special deposit Bank account (Acc. No. 0261501007600) in the National Bank of Ethiopia on terms and conditions satisfactory to the IDA, including appropriate protection against set-off, seizer or attachment. Deposits into and payment out of this special Bank Account was made in accordance with the provisions of schedule 3 of the agreement of Cr. No. 3032-ET.

During project implementation period, ERA assigned suitable a counter part for each component of the project who had been followed whether the works of the project were carried out according to the design and the agreement made between ERA and the Contractors or not. The quality and the quantity of the works of the project that were performed by contractors and consultants were approved and certified by ERA's Contract Construction Implementation Division. Accordingly, ERA's Finance Division, with the approval of IDA had withdrawn the required amount from the Credit Account, and payment was effected on time to the Contractors and Consultants for their specific service given to the project. During the execution of the project, the quarterly progress reports of the project were prepared by ERA's Planning and Programming Division and sent to IDA through MoFED. In order to prevent or reduce the problem that was encountered during the execution of the project, ERA made several meeting with contracts, Consultants and delegation of the Bank (IDA). In addition to this, ERA evaluated and approved work schedule and performance, material delivery schedule, on site availability program for major construction equipment, project cash flow, proposed project organization chart and staffing plan prepared by contractor to ensure practicability and effective utilization of resources.

During the course of implementation, all trunk roads rehabilitation and three upgrading projects were inspected by ERA and IDA and subsequent discussion were held with Contractors and supervising Consultants.

4.2 The World Bank

Lending

The Bank has been supporting rehabilitation and improvement of critically needed investments in highway and port infrastructure, promoting more efficient operations within Ethiopia's operating companies both through institutional development measures and provision of equipment. Accordingly, to restore and expand Ethiopia's road network, IDA was agreed to lend to the Government of Ethiopia (GOE), an amount to various currencies equivalent to two hundred twenty-four million five hundred thousand Special Drawing Rights (SDR 224,500,000) under Road Sector Development Program Support Project (RSDP) I; and has been made available to GOE between March and June 1999 mainly for rehabilitation/ upgrading of various road Projects in Ethiopia.

Supervision

The Bank's team has continuously and closely monitored the execution of the projects. The Team focused on the implementation of the projects; adequacy of the Bank and Government input to implementation; quality of the consultants' progress reports; project restructuring; and the financial status and claims.

During the implementation period of the project, the Task Team of the World Bank had made many times field visit to inspect the completed and ongoing works of the road projects and carried out effective supervision on the works of the other project components. The reports of the supervision missions, i.e.; submitted by the Task Team Leaders to ERA, reflected their thorough assessment; and the aid memories provided detailed advice for improving the performance and correcting the short-comings of the project's components. The Mission expressed concern at the quality of the consultants progress reports and urged ERA to take appropriate action to require the consultants' to bring it to an acceptable standard, serve as a suitable management tool and record document as well as serving a working example of what will be required for other consultant in the future.

It is primarily with the proper performance and timely guidance from the Bank, especially from the Task Team Leader of the Mission that the road projects were substantially completed well within the extended period of time. During the course of execution of the road projects the World Bank mission visited the projects area from time to time to address various problems, monitor the progress achieved and give advice on various issues. The Mission visited the work sites of the projects several time and meetings were carried out with the Client, the Contractors and the Engineer's Representative to review the progress and evolve methods for improving the output; and a significant stock-taking of the projects were undertaken and a 'workable revised work program' evolved. The corrective measures and advised by the "Mission" in these meetings proved very useful in pushing up the progress of works and building the morale and confidence of the Contractor and the Engineer.

V. PROJECT IMPLEMENTATION STATUS

5.1 Civil Works

As its components, the IDA credit No. 3032 ET includes the construction of 10 civil works contracts and their respective supervision contracts. With the said 10 civil works contracts, rehabilitation and/or upgrading of about 1377 km of Trunk Roads have been planned to be implemented. The IDA financed contracts/projects are those listed below:

1. Modjo – Awash – Mille road rehabilitation project (442.13 km, 3 contracts)
2. Awash – Hirna – Kulubi – D/Dawa – Harar road upgrading project (311.4 km, 3 contracts)
3. Woldia – Alamata and Betemariam – Wukuro road upgrading project (195.46 km, 2 contracts)
4. D/Markos – Merawi – Gondar road upgrading project (427.8 km, 2 contracts)

At present, out of the ten road projects of RSDPSPI six are fully completed; namely the rehabilitation of Awash Arba - Gewane (135.8 km), Gewane - Mill (146.025 km), Kulubi - Dengego and Dire Dawa - Harar (80 km.); and the upgrading of trunk routes of Awash - Hirna (140.4 km.),Woldiya - Alamata (78.3 km) and Betemariam - Wukro. On the other hand, the following four civil works contracts with the associated services contracts have been decided to be transferred to another (Cr. No.3438 Emergency Recovery Program - Road component).The reason for delay in completion being the substantial amount of additional and outstanding works and delay in submission and finalization of contractor's claims. These roads are:

1. The rehabilitation of Modjo–Awash Arba (160.3 km) the project work has substantially been completed; and the last taking over date was at the end of December 2004 but pending the resolution of associated claims;
2. The upgrading of Hirna - Kulubi (91 km);
3. The upgrading of Debre Markos - Merawi (220 km); and
4. The upgrading of Merawi - Gondar (208 km)

5.2 Technical Assistance

Roads Inspectorate Technical Assistance

The size and complexity of the overall program necessitates the establishment of an effective inspection, monitoring and financial system within ERA to manage the various on-going projects. To this end, a Road Inspectorate Unit (RIU) has been set up directly under the ERA Board. A technical assistance agreement to that effect was signed with Hifab International on 24th August 2000 to provide the institutional development through RIU.

The project was officially commenced on November 1, 2000. The Supplementary Agreement for a six months extension of the consultancy services was signed on 11th September 2003, which entails an extension of the service duration up to 30th April 2004. The project is now fully completed. The RIU has developed guidelines for (i) the functions and administrative procedures of the Unit, (ii) Sector Studies Inspection, (iii) Major Civil Works Inspection and (iv) Maintenance Works Inspection. Following the departure of the Consultant up on completion of the service, RIU is currently run by assigned staffs of ERA, who were working with Hifab during its service period.

CADD & Road and Bridge Design Manual & Technical Specifications

The consultant submitted the final version of all the manuals in sufficient copies (both in hard and soft copy). These include Geometric Design Manual, Pavement Design Manual (Rigid & Flexible), Site Investigation Manual, Drainage Design Manual, Bridge Design Manual, Pavement Rehabilitation & Asphalt Overlay Manual, Standard Drawings, Technical Specifications and ICB & NCB Conditions of Contract Documents. The manuals are being distributed to the relevant Divisions within ERA and outside for use.

The major remaining work of this project is establishment of the CADD Unit, which has been dropped due to budget constraint. However, ERA has managed to secure the required funding from ADB.

VI. Utilization of Credit Proceeds

The following table compares the original allocation of the credit proceeds, the revised costs and the actual expenditure of the project as of June 30, 2005.

Use of the Credit (IDA Portion)

Description	Amount Allocated	First Revised Project Cost	Actual Expenditure
Modjo - Awash Arba			
1.1 Civil Work	24.537	40.565	38.579
1.2 Supervision	1.726 (US$1.113&ETB 4.479)	3.388 (US$2.159 &ETB 8.966)	3.347 (US$2.155 &ETB 8.702)
Awash Arba - Gewane			
2.1 Civil work	20.713	-	23.534
2.2 Supervision	1.414 (US$ 0.797 & ETB 4.507)	1.563 (US$0.898 &ETB 4.857)	1.317 (US$0.988 & ETB 2.403)
Gewane - Mille			
3.1 Civil work	26.861	-	38.428
3.2 Supervision	1.585 (USD 0.900 & ETB 5.004	1.908 (US$1.126 &ETB 5.707	1.624 (US$ 1.218 & ETB 2.964)
Awash - Hirna			
4.1 Civil Work	26.927	32.078	32.469
4.2 Supervision	1.519 (US$ 0.910 & ETB 4.566	2.353 (US$1.377 &ETB 7.324)	2.155 (US$ 1.273 & ETB 6.614
Hirna - Kulubi			
5.1 Civil Work	18.505	22.140	19.914
5.2 Supervision	1.460 (GB£ 0. 529 & ETB 3.323)	3.328 (GB£1.176 & ETB 7.771)	2.310 (US$ 1.732 &ETB 4.373)
Kulubi - Dengego & D/Dawa- Harar			
6.1 Civil Work	17.024	21.562	21.983
6.2 Supervision	1.541 (US$ 1.176 & ETB 2.736)	3.051 (US$2.315 &ETB 5.520)	2.967 (US$ 2.232 &ETB 5.516)
D/Markos - Merawi			
7.1 Civil Work	33.716	59.359	58.997
7.2 Supervision	1.380 (US$0.853 &ETB 3.811)	2.093 (US$1.172 & ETB6.655)	2.579 (US$ 1.579 &7.226)
Merawi - Gondar			
8.1 Civil Work	35.756	US$35.756	32.614
8.2 Supervision	1.396 (US$0.948 &ETB 3.332)	1.672 (US$ 1.190 &ETB 4.064)	1.804 (US$ 1.267 & ETB4.528)
Woldiy Alamata			
1.1 Civil Work	15.497	17.327	22.208
1.2 Supervision	1.225 (US$ 0.735 & ETB 3.539)	2.318 (US$ 1.451 & ETB6.268)	2.034 (US$1.235 & ETB 5.775)
B/Mariam - Wukro			
10.1 Civil Work	20.969	US$33.302	25.375
10.2 Supervision	1.630 (FF 6.944 & ETB 3.099)	2.585 (FF10.856 & ETB 5.109)	1.900 (USD 1.425 & ETB 3.433)
Sub Total-Civil Work	**240.505**	**309.663**	**314.101**
Sub Total-Supervision	**14.876**	**24.259**	**22.037**
Total	**255.381**	**333.922**	**336.138**
11. Road Inspectorate Technical Assistance	*		1.580
12. CADD, Bridge Design Manual Preparation & Technical Specification	*		0.043
13. Design Review	*		1.059
Sub Total			**2.682**
Grand Total	*** 255.381**	*** 333.922**	**338.820**

Exchange Rate 1GB £ = US$ 1.9282 (as Dec. 31/2004)

1FF = 1.25 ETB (contractual exchange rage)

From the credit allocation of USD 309.2 million a total of USD 338.820 million or 110% of the allocation has been disbursed from IDA's

Account. The reason for more disbursement is due to the fluctuation of exchange rate between SDR and USD.

VII. LESSONS LEARNED

- A satisfactory progress of the contract projects can only be sustained, if a contractor is able to maintain its management effectiveness as well as an improved organization of its operation.

- The need for proactive supervision consultants to take the necessary action on time is important.

- Continuously and closely monitoring the execution of the contract projects is essential to ensure the maintenance of the steady progress.

- In general, it was observed that most of contractors suffered from poor management, lack of proper planning, lack of experienced staff and frequent breakdowns of equipment which resulted in the limited overall accomplishment of the road projects. Therefore, sufficient resources, such as new construction equipment, skilled manpower, material; and proper planning, good management and administration of contractors etc., is essential in order to achieve faster construction rate.

- In order to complete the road projects within the original contract time of period, the methodology for planning and execution of works and mutual understanding between the Contractors and Consultants must be appreciated.