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PROJECT PERFORMANCE ASSESSMENT REPORT

ETHIOPIA

ROAD SECTOR DEVELOPMENT PROGRAM SUPPORT PROJECT (RSDP PHASE I) CREDIT 3032-ET

March 10, 2008

Sector, Thematic and Global Evaluation Division
Independent Evaluation Group (World Bank)

Currency Equivalents (annual averages)

Currency Unit = Ethiopian Birr (ETB)

1997	US$1.00	ETB6.50
1998	US$1.00	ETB6.99
1999	US$1.00	ETB7.81
2000	US$1.00	ETB8.08
2001	US$1.00	ETB8.42
2002	US$1.00	ETB8.79
2003	US$1.00	ETB8.79
2004	US$1.00	ETB8.89
2005	US$1.00	ETB8.83
2006	US$1.00	ETB9.03
2007	US$1.00	ETB9.21

Abbreviations and Acronyms

AfDB	African Development Bank
DFID	Department of International Development, UK
DMO	District Maintenance Organizations
EIRR	Economic Internal Rate of Return
ERA	Ethiopian Road Authority
EU	European Union
GOE	Government of Ethiopia
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
ICR	Implementation Completion Report
IDA	International Development Association
IEG	Independent Evaluation Group
IEGWB	Independent Evaluation Group (World Bank)
MMS	Maintenance Management System
NDF	Nordic Development Fund
NPV	Net Present Value
PMS	Pavement Management System
PPAR	Project Performance Assessment Report
RFA	Road Fund Administration
RIU	Roads Inspectorate Unit
RMI	Road Management Initiative
RRO	Regional States Roads Organizations
RSDP	Road Sector Development Program
RSDPSP	Road Sector Development Program Support Project
RTTP	Rural Travel and Transport Program
SSATP	Sub-Saharan Africa Transport Policy Program

Fiscal Year

Government: The Ethiopian fiscal year is based on the Coptic calendar; in terms of the Gregorian calendar this equates to July 8 – July 7.

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IEGWB Mission: Enhancing development effectiveness through excellence and independence in evaluation.

About this Report

The Independent Evaluation Group assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the Bank's self-evaluation process and to verify that the Bank's work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, IEGWB annually assesses about 25 percent of the Bank's lending operations through field work. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming studies or country evaluations; those for which Executive Directors or Bank management have requested assessments; and those that are likely to generate important lessons.

To prepare a Project Performance Assessment Report (PPAR), IEGWB staff examine project files and other documents, interview operational staff, visit the borrowing country to discuss the operation with the government, and other in-country stakeholders, and interview Bank staff and other donor agency staff both at headquarters and in local offices as appropriate.

Each PPAR is subject to internal IEGWB peer review, Panel review, and management approval. Once cleared internally, the PPAR is commented on by the responsible Bank department. IEGWB incorporates the comments as relevant. The completed PPAR is then sent to the borrower for review; the borrowers' comments are attached to the document that is sent to the Bank's Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

About the IEGWB Rating System

IEGWB's use of multiple evaluation methods offers both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. IEGWB evaluators all apply the same basic method to arrive at their project ratings. Following is the definition and rating scale used for each evaluation criterion (additional information is available on the IEGWB website: http://worldbank.org/ieg).

Outcome: The extent to which the operation's major relevant objectives were achieved, or are expected to be achieved, efficiently. The rating has three dimensions: relevance, efficacy, and efficiency. *Relevance* includes relevance of objectives and relevance of design. Relevance of objectives is the extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). Relevance of design is the extent to which the project's design is consistent with the stated objectives. *Efficacy* is the extent to which the project's objectives were achieved, or are expected to be achieved, taking into account their relative importance. *Efficiency* is the extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared to alternatives. The efficiency dimension generally is not applied to adjustment operations. *Possible ratings for Outcome:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Risk to Development Outcome: The risk, at the time of evaluation, that development outcomes (or expected outcomes) will not be maintained (or realized). *Possible ratings for Risk to Development Outcome:* High Significant, Moderate, Negligible to Low, Not Evaluable.

Bank Performance: The extent to which services provided by the Bank ensured quality at entry of the operation and supported effective implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of supported activities after loan/credit closing, toward the achievement of development outcomes. The rating has two dimensions: quality at entry and quality of supervision. *Possible ratings for Bank Performance:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Borrower Performance: The extent to which the borrower (including the government and implementing agency or agencies) ensured quality of preparation and implementation, and complied with covenants and agreements, toward the achievement of development outcomes. The rating has two dimensions: government performance and implementing agency(ies) performance. *Possible ratings for Borrower Performance:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Contents

This report was prepared by Peter Freeman, who assessed the project in September, 2007. Romayne Pereira provided administrative support.

Principal Ratings

Road Sector Development Program Support Project (Credit 3032-ET)

	*ICR**	*ICR Review**	*PPAR*
Outcome	Satisfactory	Satisfactory	Satisfactory
Institutional Development Impact**	Substantial	Substantial	-
Risk to Development Outcome	-	-	Negligible to low
Sustainability***	Highly Likely	Highly Likely	-
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

* The Implementation Completion Report (ICR) is a self-evaluation by the responsible Bank department. The ICR Review is an intermediate IEGWB product that seeks to independently verify the findings of the ICR.
**As of July 1, 2006, Institutional Development Impact is assessed as part of the Outcome rating.
***As of July 1, 2006, Sustainability has been replaced by Risk to Development Outcome. As the scales are different, the ratings are not directly comparable.

Key Staff Responsible

Project	*Task Manager/Leader*	*Division Chief/ Sector Director*	*Country Director*
Appraisal	John Riverson	Yusupha Crookes	Oey Astra Meesook
Completion	John Riverson	Sanjivi Rajasingham	Ishac Diwan

Preface

This is the Project Performance Assessment Report (PPAR) prepared by the Independent Evaluation Group (IEG) for the *Road Sector Development Program Support Project,* (Credit 3032-ET). The IDA credit to the Government of Ethiopia was approved by the Board of Directors on January 15, 1998 in the amount of US$ 309.2 million. Total project cost was US$ 538.1 million, with US$ 214.0 million to be contributed by the Government of Ethiopia (GOE), and US$ 14.9 million through other donors and financiers. The final project cost was US$ 534.2 million with a final amount of US$ 306.5 million disbursed against the IDA credit (3032-ET) and US$ 14.5 million disbursed by the co-financiers. All funds were fully disbursed – any differences between the initial and final amounts were due to variations in exchange rates. Project effectiveness was four months after approval and the closing date was extended by two years to May 31, 2005.

The project was selected for assessment to better understand the effectiveness of a sector investment program that included the establishment of a dedicated Road Fund and a specific initiative to monitor and evaluate the program. It was also of interest because it was supported by multiple donors. The evaluation will provide a benchmark for a later evaluation of Phases II and III of the program.

IEG prepared this report based on an examination of the relevant Project Appraisal Document, Implementation Completion Report, legal agreements, project files and archives, as well as other relevant reports, memoranda, and working papers. Discussions were also held with Bank staff in both Washington D.C. and in Ethiopia. An IEG field mission visited Ethiopia in September 2007, conducted site visits, and discussed both the project and the effectiveness of Bank assistance with relevant officials and stakeholders, including co-financiers. The mission appreciates the courtesies and attention given by these interlocutors as well as the support provided by the Bank's office in Addis Ababa.

Following standard IEG procedures, copies of the draft PPAR was sent to government officials and agencies for their review but no comments were received.

Summary

This is the Project Performance Assessment Report (PPAR) for *the Road Sector Development Program Support Project* (Credit 3032-ET) which was the first phase (approved in 1998) of a multi-phase Road Sector Development Program (RSDP) in Ethiopia. At an estimated total project cost of US$ 538.1 million (and final cost of US$ 534.2 million), this project provided for the institutional strengthening of the Ethiopian Road Agency and Road Fund to manage and maintain the core road network of the country and to prepare the way for improvements at the regional and district levels.

The objective 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 and services.

Implementation was hampered by some initial delays and cost overruns due to a number of factors including mobilization problems caused by the border conflict between Ethiopia and Eritrea, leading to Ethiopia shifting its primary port of trade from Assab to Djibouti.

The Monitoring and Evaluation of this project was exceptionally well done with 19 indicators that were tracked by a Roads Inspectorate Unit providing independent reports on the performance of road sector operations. This system has been further developed in the subsequent Phase II follow-on project and has been adopted by the African Ministers of Transport/Infrastructure as best practice.

The outcome of the project was *satisfactory.* Relevance was high and endorsed in the poverty alleviation strategy for the country and was deemed critical to ensuring that food aid could be quickly distributed in times of natural disaster including drought. The development objectives were satisfactorily achieved and a good foundation created for subsequent phases of the project. Rates of return were higher than anticipated at appraisal in the range of 26-35 percent. The risk to development outcome is rated *low to negligible* based on the measured performance of the subsequent phase (for example the proportion of asphalt roads in good condition rose from 17 to 64 percent) and the continued support of many development partners; the good coordination of these financiers and donors was also a very positive factor.

Bank performance was *satisfactory,* showing thorough preparation and good, proactive supervision practices. The Ethiopian Road Agency (ERA) was encouraged to

adopt a dispute resolution mechanism involving the use of a panel of dispute resolution experts which produced significant benefits including the avoidance of costly arbitration. The Bank also ensured support from the Sub-Saharan Africa Transport Policy Program, especially with regard to road maintenance and rural travel and transport issues.

Borrower performance was also *satisfactory.* The Government of Ethiopia showed strong commitment to the program and introduced the necessary proclamations establishing ERA, the Road Fund and a new compensation law in a timely manner. Although ERA showed certain weaknesses initially, the effort at institutional strengthening and especially adjustments in salaries to attract and retain key staff paid off, so that by project closure enormous progress had been achieved.

This project was the first in a series of follow-on projects planned on a programmatic basis with multi-donor support. It is recommended that a further evaluation be conducted after Phases II and III of the RSDP have been concluded and the ICRs prepared. The latter two phases have utilized Adaptable Program Lending instruments. The main lessons from Phase I are as follows:

i. Even in a very low income country, a successful infrastructure program can be established with strong government commitment, sound preparation, continuity of management and funding flow, and a coordinated multi-donor approach. The RSDP support project showed that the up-front focus on policy issues can contribute substantially to a successful outcome;

ii. A successful roads program needs to be monitored by means of establishing appropriate and practical indicators with a dedicated unit to measure progress and report regularly to the decision-makers. The indicators need to be able to establish progress with the softer issues such as income generation, improvements in skills levels, and creation of employment opportunities;

iii. In a large road program, specific attention needs to be given to effective contract administration. The appointment of Dispute Resolution Experts can yield significant benefits including avoidance of costly arbitration.

Vinod Thomas
Director-General
Evaluation

1. Background

1.1 Ethiopia is a landlocked country located in the Horn of Africa. Currently, virtually all (98 percent) of its imports and exports are routed through the port facilities in neighboring Djibouti. Ethiopia is Sub-Saharan Africa's second most populated country after Nigeria, with 76.5[1] million inhabitants and is renowned for its distinctive cultural heritage and varied topography.

1.2 The country, however, suffers from widespread poverty with more than half the rural population living below the poverty line and less than a quarter with access to safe water. Most urban inhabitants live in slum conditions, characterized by overcrowding and lack of sanitation. This situation has been exacerbated by drought, civil unrest and warfare; in 1984-85 Ethiopia experienced a catastrophic famine as a result of which more than a million people died. Because the country relies heavily on subsistence agriculture it remains vulnerable to a failure of the annual rains, and thus the existence of a sound basic road network to distribute food aid remains critically important.

1.3 At the end of 2006, the overall road network comprised 39,477 km of which 19,313 km were federal roads. About 95 percent of Ethiopia's passenger and freight traffic uses the road system and it is the only means of access to the widely scattered rural communities. But despite ongoing efforts to expand the road network the country still has one of the lowest road densities in Africa (36 km per 1,000 sq km in 2006, compared with an African average of 60 km per 1,000 sq km)[2].

1.4 Against this background, the Road Sector Development Program (RSDP) was established in 1997, supported by multiple donors, and after 2003, Adaptable Program Lending (APL) instruments were adopted designed to support long-term sector wide development. This PPAR is focused on the first phase of the RSDP, the mainly IDA-financed *Road Sector Development Program Support Project* (Credit 3032-ET). The PPAR is intended to establish a basis for further evaluation of phases two and three, in due course. Phase I was finished in 2002. At the time of preparing this PPAR (September /October 2007) Phase II had ended and Phase III had been launched, but the ICR for Phase II had not yet been prepared. Obviously some aspects of the further phases are pertinent to this PPAR, since they enable an assessment of the risk to the development outcome in the first phase.

1.5 The donor community in Ethiopia has acknowledged the Bank's leadership role in the preparation of the RSDP. Experience with sector reform in other sub-Saharan African countries on a two way basis has been shared through the Road Management Initiative (RMI) and the Rural Travel and Transport Program (RTTP) both of the Sub-Saharan Africa Transport Policy Program (SSATP[3]) managed by the Bank. Of particular interest in Phases II and III is the application of the APLs, providing for greater flexibility in

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[1] Ethiopia Country Brief, World Bank, August 2007.
[2] Ethiopian Road Authority, Nine Year Assessment Report, 2006.
[3] The SSATP is a regional knowledge sharing program supported by multiple funding agencies

project design and in financing client needs as new issues arise. The impact on Ethiopia of the continuity of the RSDP is an additional factor considered in this evaluation.

2. The project

Project Objectives

2.1 The objectives of the project as indicated in the Project Appraisal Document (PAD[4]) were 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 and services.

2.2 The development objectives were broad, but sensible as a starting point, although not easily evaluable. It is noticeable that in later phases of the RSDP these objectives were tightened up on the basis of experience. For example specific mention is made in RSDP III of environmental and social sustainability and more focus placed on developing the capacity and increasing the participation of domestic consultants and contractors, as well as addressing development issues down to woreda[5] and community levels.

2.3 The Road Sector Development Program Support Project (RSDPSP Credit 3032-ET) was the first phase (1997-2003, later extended to 2005) of the road sector investment program, which supported the Government's RSDP through an integrated package of investments, sector reforms and institutional re-organization. It was not, however, an APL (see paragraph 1.4). Subsequent phases of the RSDP, RSDP II (2003-2007) and the recently approved RSDP III (2007-2010) have been supported through the Bank's APL instruments designed to provide long term support involving ongoing restructuring and systemic reform, with trigger indicators of achievement that had to be met before proceeding to the next stage. Additional APLs are planned up to 2014.

2.4 A feature of the Government's RSDP was participation by other development agencies either in parallel financing with IDA or in co-financing arrangements. In RSDP I nearly US$15 million was provided through co-financing primarily for institutional strengthening and capacity building. While this amount may appear to be comparatively small in comparison to the overall project cost, the impact of the technical assistance was

[4] The wording in the Development Credit Agreement was similar, but mixed the component descriptions with the overall objectives.
[5] The woreda is a district level of government and provides most social and economic services.

significant. It gave impetus to the whole RSDP initiative and created a supportive enabling environment, which has led to a coordinated donor approach to the sector and increased donor funding in subsequent phases. The main[6] partners were GTZ, DFID, EU and the Nordic Development Fund (NDF). GTZ funded detailed preparatory work for the reform agenda, DFID supported capacity building initiatives and contract preparation, the EU provided for contract administration, some activities of the Ethiopian Road Agency's (ERA's) Environmental Management Branch, and gave support in respect of transport planning and economics. The NDF co-financed the capacity building for four Regional States Roads Organizations (RROs) and assisted ERA's training centers to develop curricula for road maintenance, contract and financial management, and small scale contractor training. IDA provided technical assistance through a Japanese grant (TF-25158) to carry out village level travel and transport surveys and domestic construction industry studies.

Project Components and Cost

2.5 The project components as listed in the PAD as well as the appraisal and final costs are given in Table 2.1 below.

Table 2.1 Components and Costs for the Road Sector Development Program Support Project, RSDP Phase I (Credit 3032-ET) in US Dollars millions

Component Description	App Bank	App Govt.	App Co-fin	Act Bank	Act Govt.	Act Co-fin
Rehabilitating and Upgrading Paved Trunk Roads (522 km); 4 contracts	108.40	46.40		100.87	28.87	
Upgrading Trunk Roads from Gravel to Asphalt (855 km); 6 contracts	178.00	131.60		209.74	121.93	
Construction Supervision	20.00	12.50		20.36	16.67	
Institutional Strengthening and Capacity Building technical assistance for ERA, RROs; Environmental Guidelines and Sector Environmental Assessment; Technical Preparation for Rural Roads Improvements	2.80	23.50	14.90	2.40	18.84	14.53
TOTAL: APPRAISAL 538.10 **ACTUAL 534.21** *Includes 20.00 from Credit 2438-ET and the balance from Credit 3438-ET	309.20	214.00	14.90	333.37*	186.31	14.53

2.6 An earlier road project, known as the Road Rehabilitation Project (Credit 2438-ET) focused on the Mille-Assab road to Eritrea, but is relevant because it made a contribution of US$20 million to RSDP I to cover a significant cost overrun. The balance of funds to cover this overrun was provided from the Emergency Reconstruction Program (Credit 3438-ET) - a separate project to improve the condition of roads damaged in the Ethiopian-Eritrea conflict. The co-financing contributions from various development

[6] Other financiers involved in parallel financing included KfW, JICA, AfDB and the Governments of Italy and the Netherlands.

partners were all in support of the institutional strengthening and capacity building component.

3. Implementation

Quality at Entry (QAE)

3.1 The project QAE was reviewed by the Quality Assurance Group (QAG) and rated marginally satisfactory overall. The rating of marginally satisfactory was largely due to concerns about a possible underestimate of resettlement needs on one road. However, with the benefit of hindsight it is clear that in the event the anticipated higher amounts for resettlement did not materialize due to careful final road location design which minimized the number of project affected persons. All other aspects including risk assumptions and social and environmental assessments were satisfactory or better. QAE was thus satisfactory.

Implementation Experience

3.2 *Cost Overruns and Price Escalation.* There was a quantity underestimation amounting to 17 percent for the Modjo-Awash-Arba road contract due to a change in road design from overlay to reconstruction. This arose from rapid deterioration in sections of the road between design review and actual construction. The original completion time was extended by 1,006 days contributing to a 45 percent price adjustment over the original contract price. Overall, all civil works together cost 8.5 percent more than budgeted with all physical and price contingency allocations being fully utilized. This was mostly due to the overrun on the Modjo-Awash-Arba road. The additional amount was covered by contributions from two other credits (see paragraph 2.6). Delays in mobilization and the unsatisfactory performance of a few contractors led to a credit extension of two years and to unforeseen price escalation because of increases in world market prices for fuel and bitumen during that period. The mobilization problems were mainly due to the border conflict between Ethiopia and Eritrea leading to Ethiopia shifting its primary port of trade from Assab to Djibouti.

3.3 *Handling of Disputes.* The use of Dispute Review Experts in this project produced significant benefits, including avoidance of costly arbitration. Amicable solutions were found by ensuring the rights and obligations of each party were fully understood and thus litigation was avoided through facilitated discussions.

3.4 *HIV/AIDS.* At project preparation the HIV/AIDS program for Africa was not yet operational. Nevertheless, a strategy for the sector was retro-fitted under the project. The target groups were the staff of ERA, contractors, consultants and the local communities at the project sites. ERA was one of the first to benefit from funding under the Multi-country HIV/AIDS Program when it became available in 2002 securing US$ 1.3 million to roll out its initial program.

3.5 *Involvement of private contractors in road maintenance and construction.* During implementation of RSDP I, due to a low level of local capacity and experience,

international contractors were the major implementers of federal road rehabilitation, upgrading and construction projects with 70 percent of the total contracts. Local contractors had 20 percent of the contracts and the remaining 10 percent were undertaken using force account. The development objective refers to a vaguely worded intention to "build the capacity of the local private sector". In terms of measurable outputs the number of private local contractors increased from 2 to a peak of 12 during implementation, while substantially more kilometers were constructed by such contractors in comparison to the length of works completed departmentally using forced account. Training was carried out in assisting the international contractors with feasibility studies, design review, environmental impact assessment and supervision activities. While stronger capacity was indeed developed through participation in RSDP I various constraints were also identified that were inhibiting rapid progress. These were 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. This led to a specific objective to address this issue more substantially in the subsequent RSDP II.

3.6 *Environmental and social safeguards.* Overall performance of environmental and social safeguards management progressively improved during implementation. ERA was proactive in evaluating compensation amounts to be paid as part of a resettlement audit. By project closure a new compensation law was in place which made subsequent payments easier. Some 5, 877 persons affected by the project were registered and received compensation to the total value of US$ 6.9 million. IEG found no evidence of dissatisfaction with compensation from the admittedly very small sample of affected households contacted by the mission.

4. Monitoring and Evaluation

Design

4.1 Monitoring and Evaluation (M&E) of the RSDP is the responsibility of a specific branch of the Planning and Programming Division of ERA. With the strong support of the international development agencies funding the program, it was agreed that a special effort would be made to measure the progress of the RSDP. Consequently a local consultant was recruited to collect selected data annually and prepare reports on the monitoring indicators (both outcomes and outputs). Sixteen indicators were initially chosen covering a four year period (1997/98 to 2001/02). Fairly standard indicators related to road density, traffic flow, road roughness, journey time, passenger fares and freight rates, vehicle operating costs, and accidents were collected. But other useful additions related to maintenance cost and expenditure, time for payments to contractors, time for contract administration, construction costs and incidence of vehicle overloading. In 2001/02 three additional indicators were added, namely, employment opportunities for local labor, income generation[7] and improvements in skill levels. Later, in RSDP II, a

[7] ERA 2007. There was found to be a strong correlation between the level of employment created and the amount of income generated.

basis was established for Millennium Development Goals (MDGs) focusing on access and affordability and the indicator baseline was extended to cover all transport modes. The baseline designs and follow-up from IEG's viewpoint were highly relevant, appropriate and, for the first 19 indicators used in RSDP I methodologically sound.

4.2 A Roads Inspectorate Unit (RIU), which is accountable to the ERA Board, provides independent inspection and monitoring reports on the performance of road sector operations. This unit also draws on information from the Pavement Management System (PMS) and the Maintenance Management System (MMS) established under the credit.

Implementation

4.3 The annual data collection and reporting has been carried out professionally and consistently. Results have been reported to ERA's management[8] and shared with decision makers in the GOE. The data have been used as a basis for comparative reporting of the rate of progress of the RSDP through its various dimensions. The road condition assessments and maintenance cost and expenditure indicators have also informed the Road Fund of where priorities should be directed. Initial funding from the EU covered the first four years of M&E data collection and reporting. ERA financed a continuation for two further years before the GOE Treasury agreed to continue the work which was expanded to cover the MDG and broader transport indicators. The IEG mission noted that the M&E system was "owned" by the beneficiaries in the sense that it was updated and seen as a useful tool, and that the implementation had been conducted conscientiously and rigorously.

Utilization

4.4 The M&E findings have been shared with various GOE ministries and have been supported by the Ethiopian Treasury. ERA and the Road Fund (which fall under the Ministry of Works and Urban Development) have used the findings for planning purposes, to respond to enquiries about the RSDP, and to measure progress in the various dimensions of the program. Areas of concern such as road safety, maintenance and construction costs, local employment aspects, and freight rates have received special attention in terms of policy discussions. The fact that the development of indicators has been further expanded under RSDP II is important. This M&E system has become a flagship product for Ethiopia and the general indicators established for transport in relation to the MDGs have been adopted by the African Ministers of Transport/Infrastructure as best practice.

4.5 Overall, the project's M&E is rated **high**.

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[8] For example Updating of the RSDP Performance and MDG transport Indicators, 2004/05, Final Report, WT Consult for ERA, Addis Ababa, 2007

5. Other Issues

5.1 Both safeguard and fiduciary compliance were satisfactory, but during the field trips undertaken by IEG observations were made concerning aspects of transport planning, road safety and vehicle overloading prevention. While it is appreciated that the project being assessed was designed to address large infrastructure bottlenecks in the road network, it is believed that the comments are relevant in that the project provided the foundation for the subsequent further implementation of the RSDP and its sustainability.

5.2 With regard to the first topic it is clear in Phase I that a formalized overall transport master plan is urgently needed in Ethiopia. Although the 1995 Bank Transport Sector Memorandum (which was a major input to the RSDP) covered the expansion of the international airport, the rehabilitation of the Addis-Djibouti railway and the need for inland container depots, the linkages between such initiatives and the implications for the road system remain unclear. It is also apparent that urban transport planning is lagging behind, especially in Addis Ababa, where many of the traffic signals are no longer functioning and where the traffic becomes gridlocked during peak traffic periods. Traffic congestion will likely constrain urban growth if the problem is not addressed urgently.

5.3 These issues, however, have been recognized, and during Phase II a transport master plan has been drafted (funded by the EU) although, at the time of preparing this PPAR it had yet to be tabled and discussed[9]. The urban problem has also been acknowledged and through grant funding and an allocation under APL 1, urban transport needs have at least been assessed.

5.4 The second area which appeared to be underemphasized is road safety. While funds for road safety are made available from the Road Fund, the focus is overwhelmingly on road maintenance with only 1.14 percent allocated to road safety[10]. Once a Road Safety Council has been established (resulting from a recommendation of an EU-financed study) it appears likely that this important topic will receive more attention.

5.5 The last issue concerns the control of overloaded vehicles. Ethiopia has a system of weighing stations which appears to be quite effective in deterring overloading practices and thus protects the roads from undue damage. However, the truckers association commented that the road haulers have to accept the paperwork of consignments collected at the dockside in Djibouti, but this documentation may be inaccurate and when the trucks cross the border into Ethiopia and are weighed, they sometimes have to offload their goods because the weight limits have unwittingly been exceeded. The obvious answer to this would be to have a weighing station at Djibouti port, but because this is in another country the matter will require bilateral negotiations.

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[9] An Addis Abba Urban Transport Plan was completed in December 2005, but was not implemented in part because of post-election transitional arrangements in the city government that affected both the mandate to proceed and the capacity to pursue the plan.

[10] Despite the fact that the Road Fund allows up to 3 percent of its revenue to be allocated to road safety activities.

6. Ratings

Outcome

6.1 Overall outcome, taking into account the achievement of the individual development objectives and the ratings of relevance, efficacy and efficiency, was **satisfactory**.

Relevance

6.2 Relevance is *high.* The development objectives were derived from the stated overarching goal of the GOE's RSDP, and aligned with the Bank's country assistance strategy (CAS) at that time through enhancing pro-poor growth, institutional capacity building and human development. A more recent interim CAS put more emphasis on good governance, but still strongly supported the pro-poor growth strategy, while the Poverty Reduction Strategy Paper[11], containing the Plan for Accelerated and Sustained Development to End Poverty (2005-2010), included as a main pillar "Strengthening the infrastructure backbone of the country." The importance of a sound basic road network to assist with the transportation of food aid in drought situations is also crucial. The further relevance of this project is derived from the comprehensive multi-phase nature of the program and the great interest shown in the outcome by international financial institutions.

Efficacy

6.3 **Objective 1: Improving trunk and regional rural road access and utilization to meet the agricultural and other economic development needs.** *Achievement is rated satisfactory.* The weighted average percentage of works completed (in financial terms) under the 10 works contracts was 94.3 percent. The PAD anticipated that 1,300 km of roads would be completed out of which 1,264 km were actually finished; the remaining 36 km were eventually completed under Credit 3438. The financing shortfall was the result of a cost overrun and higher than expected price escalation, especially the high cost of petroleum fuel.

6.4 Vehicle operating costs on the improved roads decreased by about 16 percent and journey time by between 25 and 30 percent. This contributed to the lowering of truck freight rates by 25 percent per ton/km in 1999/00 on the import/export corridor and 47 percent on the other trunk routes. The lower costs would have stimulated the domestic markets including agriculture and other commodities, and contributed to a positive export growth and competitiveness (as reflected in International Monetary Fund statistics[12]), but it is not possible to say how much of this growth was due to the road improvements and how much was as a result of other factors.

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[11] Ethiopia: Poverty Reduction Strategy Paper, Report 40406-ET, World Bank, August, 2007

[12] Average annual export growth between 1999 and 2005 was 15 percent.

6.5 **Objective 2: Building up institutional capacity in both the public and private sectors for sustainable road development and maintenance.** *Achievement is rated highly satisfactory.* From an institutional capacity building perspective this project provided a solid foundation for the RSDP. ERA showed effective leadership and commitment; detailed preparatory work for a reform agenda had been carried out over a two year period, supported by GTZ; substantial resources (US$ 35.77 million) were utilized for the various activities and both technical and strategic assistance were provided by many development partners, working well together on a coordinated basis.

6.6 ERA was strengthened by the implementation of an upward revision of salaries (up to 66 percent) and other benefits, thus enabling the organization to recruit and retain core staff – a major problem in the past. This factor, coupled with technical assistance activities, improved ERA's capacity in managing procurement, contract administration, planning and financial management. In 2002 a new procurement code was enacted and an independent Public Procurement Agency with monitoring functions was established at federal level. Pavement and maintenance management systems were introduced and ERA's financial management system was updated, while a new accounting package and a computerized store system were developed in-house. The RROs were strengthened in accordance with advice given by the NDF and training manuals were successfully introduced in the training centers. In addition, ERA's 10 District Maintenance Organizations (DMOs) benefited from a comprehensive five year capacity building program to enable them to carry out cost effective maintenance on a decentralized basis. The establishment of the RIU also improved the overall technical and financial auditing of maintenance and construction activities.

6.7 IEG's assessment of the outcome of institutional progress in the public sector was based on the fact that all the outputs were achieved, and that interviews with the beneficiaries, consultants, contractors and international development agencies were positive concerning the soundness of the program. ERA in particular was seen as a competent and progressive organization. In addition greater stability in funding for road maintenance was established through the setting up of a dedicated Road Fund[13], including a Road Fund Administration and a Board that comprised of representatives of the federal government, regional states and the private sector.

6.8 While the level of achievement in the public sector was high, less progress was made in the private sector. Because of limited prior experience only 20 percent of contracts were awarded locally. Most internationally appointed contractors did link with local contractors and contributed to their development and some consultancy services provided opportunities for on-the-job training for ERA counterpart staff. The project also helped to identify the main constraints inhibiting greater participation by the local private sector, but perhaps could have done more (see paragraph 3.5). Given that the objective of building capacity was vague, and that there were no indicators to measure progress to such a goal, and taking into account that this was a first initiative in this area, IEG rates progress with private sector capacity building as satisfactory and the overall rating for building institutional capacity (public and private) as highly satisfactory.

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[13] Proclamation No. 66/1997.

6.9 **Objective 3: Providing economic opportunity for the rural poor both through increased employment in rural road works and affordable means of transport (AMT) and services.** *Achievement is rated satisfactory.* Employment opportunities for local labor were tracked, and the additional number of persons employed was about 7,400 for an average period of 40 months spread over ten contracts. Of these persons approximately 40 percent were skilled. The number of women employed, however, was relatively low[14]. There would have been some multiplier effects on the local economy, but no attempt was made to measure secondary benefits resulting from greater income and improved access.

6.10 For the majority of the rural population in the remotest areas the main means of transport is walking with head and back loading, supported by animal transport. This project was seen as a limited first step towards including the concept of how to improve the level of affordable means of transport in the country's transport framework. It comprised the establishment of an Ethiopian Rural Travel and Transport sub-program to look at what measures could be taken to improve the options for remote communities and the conducting of pilot studies in selected woredas. The pilot studies were completed and focused on constructing low cost roads, footpaths and trails, and projects to reduce the burden of travel and transport by providing access to water wells, grinding mills and schools. An access strategy was developed specifically by each community and was thus locally-owned. Although the impact on land tenure system on the location and distribution of the rural population was not addressed, several improved access schemes for individual villages were successfully implemented. The IEG mission noted that the subsequent introduction of low cost hanging bridges has also been successful. Progress overall was rated satisfactory.

Efficiency

6.11 Economic rates of return (ERR) and net present values (NPV) were calculated in the ICR for all the rehabilitated and upgraded roads at appraisal and completion using the same HDM-III[15] model for consistency. The results given in Table 6.1 below show in all cases that the returns have improved since appraisal in a range of 26-35 percent and that the value of the project is very strong, far higher than the assumed opportunity cost of capital of 12 percent[16]. IEG deemed the methodological assumptions to be appropriate.

[14] Between 4 and 7.2 percent based on a sample of three contracts.

[15] Highway Development and Management System, version III.

[16] The opportunity cost of capital was taken as 12 percent to be consistent with the original feasibility study conducted in July 1997, although the rate currently is 10 percent. This made no significant difference to the rates of return calculated.

Table 6.1 EIRR and NPV of Rehabilitated and Upgraded Roads

Road Link	Length	ERR Appraisal	ERR ICR	NPV Appraisal	NPV ICR
Description	*km*	*%*	*%*	*@12% million ETB*	*@12% million ETB*
Modjo-Awash-Mille	442	20.3	34.5	919.4	4,476.4
Woldiya-Alamata-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-Harar	311	25.2	30.7	947.2	2,552.9

6.12 The higher values at completion are attributable to higher traffic growth and lower vehicle operating costs than anticipated at appraisal, even taking into account both the higher construction and fuel costs that pertained during implementation. The IEG mission studied the traffic counts and traffic composition for the years 1992-2005[17] and found that the expected traffic volumes have continued to rise after completion on average slightly faster than anticipated and that trucks continue to predominate in the traffic mix. The traffic growth is more due to expansion of the industrial and service sectors rather than the agricultural sector, while the incidence of truck traffic emphasizes the importance of the weighing stations program to discourage vehicle overloading. Road condition was generally satisfactory, as observed by IEG, with only one road section needing attention to drainage issues[18]. Overall, the efficiency of the project was high.

Risk to Development Outcome

6.13 The ICR, using the old rating system, considered the sustainability of the project to be highly likely based on the contributions committed to the Road Fund for maintenance, the improved capacity of the agencies concerned, the involvement of beneficiaries and stakeholders in the ongoing sector reform process and the continued support from the international and bilateral funding agencies. IEG had the opportunity to make a further assessment based on progress with the Phase II project (ALP 1) and was fortunate to have been present for the launch of Phase III. This involved a review conference[19] held to assess the implementation of the first two phases, and provided IEG with an opportunity to interview key stakeholders.

6.14 With regard to the Road Fund, the total revenue collected over the last ten years has been ETB 4,117.7 millions (US$ 468 million). This amount has been sufficient to cover the routine maintenance of the federal road system and make a contribution to the needs of the regional and urban roads and to periodic maintenance. Currently 65 percent is allocated to federal roads, 25 percent to regional roads and the remaining 10 percent to

[17] ERA Report on the analysis of traffic flow patterns in Ethiopia (1992-2005).
[18] ERA Annual condition and axle load enforcement report, 2005.
[19] Implementation assessment of the ten year accomplishment in the road sector and launch of RSDP III, September 24-25, 2007, Sheraton Hotel, Addis Ababa.

urban roads[20]. Clearly the fund will need to be expanded as the system grows and the capacity to handle more maintenance activities improves. Recently, the GOE agreed that municipal and sales taxes levied on fuel sales could be added to the fund. In comparison to road funds in other African countries the Ethiopian fund does well, since only one third of such funds cover routine maintenance costs[21]. Administration costs are also low at about two percent of funds collected. The GOE continues to show strong commitment to the RSDP as exemplified not only in its financial support, but also as embodied in its latest Letter of Road Sector Policy[22].

6.15 There is also a strong sense of commitment to the RSDP from the international donor and finance community whereby 12 organizations have pledged their continued support for RSDP Phase III, with IDA, AfDB, EU and Japan covering one third of the expected costs. This will ensure that the program continues at least until 2010, but the likelihood of continuance until 2015 (to meet the Millennium Development Goals, in which improved accessibility is an important aspect) is extremely high. Perhaps the only scenario that could derail this support would be another outbreak of hostilities with neighboring Eritrea.

6.16 The reason for this level of support is to be found in Table 6.2 which shows that there is a steady improvement in the results of the program. Road condition and road density improved during Phase I (this project) and have continued and accelerated in Phase II. Average distance to an all-weather road has reduced from 21.4 to 13.0 km, while the proportion of asphalt roads in good condition has improved from 17 percent in 1997, to 33 percent at the end of Phase I, to 64 percent in 2007. This is clearly a success story.

6.17 The remaining critical factors required for sustainability of the program and project benefits are strengthening further the institutional and organizational capacity of the road agencies to ensure capacity is adequate for successful implementation and fostering the local contracting industry capacity to carry out the work. As both of these factors have been addressed in the development objectives of Phase III and as the international financiers are set to give additional technical assistance, the achievement of these objectives looks highly likely. IEG therefore concludes that the risk to development outcome is *negligible to low.*

[20] Half of this amount is for Addis Ababa.
[21] Benmaarmar M 2006 Financing of Road Maintenance in Sub-Saharan Africa SSATP discussion paper 6.
[22] Updated letter of road sector policy, Ministry of Finance and Economic Development, April 17, 2007.

Table 6.2 Change in Selected RSDP Indicators between 1997 and 2007

Ethiopia Country Indicators	1997 (RSDP begins)	2002 (End of Ph. I)	2007 (End of Ph. II)
Proportion of asphalt roads in good condition (%)	17	35	64
Proportion of gravel roads in good condition (%)	25	30	49
Proportion of rural roads in good condition (%)	21	28	46
Proportion of total network in good condition (%)	22	30	49
Road density/1,000 sq. km (km)	24.1	30.3	38.6
Road density/1,000 population (km)	0.46	0.49	0.55
Proportion of area more than 5 km from all-weather road (%)	79	75	68
Average distance to all-weather road (km)	21.4	17.0	13.0

Bank Performance

6.18 Bank performance overall was *satisfactory.* Several studies and investigations preceded finalization of the appraisal including a seminar on the management and financing of roads, sponsored jointly by the EU and ERA, which identified key issues and made recommendations on how to handle them. The Bank produced a Transport Sector Memorandum in 1996 that provided a comprehensive framework for reform, building on GTZ-financed technical assistance preparatory work on the reform agenda. Through these interactions there developed a good cooperative spirit among the development partners which has continued throughout the decade. Critical risks were appropriately assessed and advice by the Bank to the borrower contributed to the good compliance and efficiency in applying the Bank's procurement guidelines and standard documents. More attention perhaps could have been given to strengthening the role of the local private sector in the project. Performance during preparation was, on the whole however, satisfactory.

6.19 Bank supervision was also satisfactory. The project was large in scope and the team had to resolve many technical issues involving problems of design and contract administration. This included a timely extension following an unexpected cost overrun. While it is arguable that the supervision team could have anticipated this overrun earlier it is doubtful, given the level of capacity in the construction industry and ERA at that time that this delay could have been avoided. The team gave proactive support to ERA in meeting the requirements for key environmental and social safeguards, in the design of an HIV/AIDS prevention strategy, as well as in policy and institutional reform matters and capacity building initiatives. It drew on the resources of the SSATP in respect of advice on the Rural Travel and Transport Program and helped ERA to establish an effective review panel of dispute resolution experts. In IEG's view, this satisfactory performance was due to the combined experience of the team, the assignment of Bank headquarters staff to Addis Ababa, and the continuity of the same team throughout the project.

Borrower Performance

6.20 Borrower performance overall is also rated as *satisfactory.* On the GOE side the commitment to achieving the development objectives was very strong and highly satisfactory. Although there may have been other strategic reasons for supporting a good core road system associated with a sound Road Fund, there is no doubt that the important role of this infrastructure backbone to poverty alleviation was fully recognized. Decisions were timely including the proclamations establishing ERA, and the fund, as well as a new compensation law.

6.21 ERA was effective in program monitoring and organizing and leading coordination meetings with donors. It was also effective in establishing baseline indicator data and in the overall handling of safeguard issues. Moreover, it was responsive to suggestions to improve higher amounts for resettlement compensation in line with Bank's policies. Initial organizational deficiencies in ERA identified in appraisal in areas such as planning, contract and financial administration were progressively improved through the institutional strengthening component and by the end of the project the improvement was considered by the stakeholders interviewed by IEG to be significant. The results of the establishment of ERA's RIU were more modest than expected in that there was a lag between creating the capacity and its impact on improving the management of the system. However, by project closure the RIU was working effectively and it really began to produce good results in Phase II. Some early contracts were also delayed due to weak contractor performance. The effects of this could have been minimized had ERA been more proactive at the time. Taking all these factors into account the performance was satisfactory albeit in some aspects marginally so. Overall, given the scale of the operation, borrower performance (government and implementing agency) was satisfactory.

7. Lessons

7.1 This project was the first in a series of follow-on projects planned on a programmatic basis with multi-donor support. It is recommended that a further evaluation be conducted after Phases II and III of the RSDP using APLs have been concluded and ICRs prepared. The main lessons from Phase I are as follows:

i. Even in a very low income country, a successful infrastructure program can be established with strong government commitment, sound preparation, continuity of management and funding flow, and a coordinated multi-donor approach. The RSDP support project showed that the up-front focus on policy issues can contribute substantially to a successful outcome;

ii. A successful roads program needs to be monitored by means of establishing appropriate and practical indicators with a dedicated unit to measure progress and report regularly to the decision-makers. The indicators need to be able to establish progress with the softer issues such as income generation, improvements in skills levels, and creation of employment opportunities;

iii. In a large road program, specific attention needs to be given to effective contract administration. The appointment of Dispute Resolution Experts can yield significant benefits including avoidance of costly arbitration.

Annex A. Basic Data Sheet

ROAD SECTOR DEVELOPMENT PROGRAM SUPPORT PROJECT (CREDIT 3032-ET)

Key Project Data *(amounts in US$ million)*

	Appraisal estimate	*Actual or current estimate*	*Actual as % of appraisal estimate*
Total project costs	538.00	534.00	99.3
Loan amount	309.20	306.50	99.1
Government of Ethiopia	14.90	14.50	97.3

Project Dates

	Original	*Actual*
Appraisal	08/29/1997	08/29/1997
Board approval	01/15/1998	01/15/1998
Signing	-	01/25/1998
Effectiveness	04/27/1998	05/06/1998
Closing date	05/31/2003	05/31/2005

Staff Inputs *(staff weeks)*

	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

Mission Data

	Date (month/year)	No. of persons	No. of Persons and Specialty (e.g. 2 Economists, 1 FMS, etc)	Performance Rating	
				Implement. Progress	Development Objective
Identification/ Preparation	06/01/1996	8	Team Leader (1); Sr. Transport Economist (1); RMI Task Manager (1); Regional Procurement Adviser (1); Consultant (1); Environmental Specialist (1); Infrastructure Specialist (1)	S	S
Pre-appraisal	03/24/1997	9	Team Leader (1); Transport Economist (1); Sr. Accountant (1); Highway Engineer (1); Infrastructure Spec. (1); Environmental Specialist (1); Divisional Engineer (1); Operations Analyst (1)	S	S
Appraisal/Negotiation	09/20/1997	10	Team Leader (1); Pr. Transport Eco. (1); Financial Mgt. Spec. (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. Spec. (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)		
	10/21/1999	5	Sr. Highway Engineer (1); Highway Engineer (1); Infrastructure Spec. (1); Social Scientist (1); Sr. Accountant (1)	S	S

	Date (month/year)	No. of persons	No. of Persons and Specialty (e.g. 2 Economists, 1 FMS, etc)	Performance Rating Implement. Progress	Development Objective
	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); Operations Officers (1); Financial Specialist (1)	S	S
	06/28/2001	3	Task Team Leader (1); Environmental Spec. (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 (1); Soc. Scientist/Envn.Sp. (1); Operations Analyst (1)	S	S
	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)		
	12/20/2004	7	Team Leader (1); Sr. Transport Spec. (2); Social Scientist (1); Financial Spec. (1); Sr. Transport Eco.(1); Program Assistant(1)	S	S
	10/18/2002-	7	The project was supervised		

	Date (month/year)	No. of persons	No. of Persons and Specialty (e.g. 2 Economists, 1 FMS, etc)	Performance Rating Implement. Progress	Development Objective
	to project closing and ICR preparation		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 Specialist, Transport Economist, and Rural Transport Specialist.		