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IMPLEMENTATION COMPLETION REPORT
(TF-27855 TF-27856 IDA-25990)

ON A

CREDIT

IN THE AMOUNT OF SDR 136.2 MILLION (US\$188 MILLION EQUIVALENT)

TO THE

REPUBLIC OF MOZAMBIQUE

FOR A

SECOND ROADS AND COASTAL SHIPPING PROJECT

December 24, 2003

**Transport
Africa Region**

CURRENCY EQUIVALENTS

(Exchange Rate Effective June 30, 2003)

Currency Unit = Mozambican Meticals
Mt 23,250 = US\$ 1.00
US\$ 1.40 = SDR 1.00

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

ASDI (or SIDA)	= Swedish International Development Agency
ADT	= Average Daily Traffic
AfDB	= African Development Bank
BADEA	= Arab Bank for Economic Development in Africa
CFD	= Caisse Française de Development
DCA	= Development Credit Agreement
DEP	= Provincial Department of Roads and Bridges, DNEP
DNEP	= National Directorate of Roads and Bridges
ECMEP	= Provincial State Enterprise for Construction and Maintenance of Roads and Bridges
EU	= European Union
EIRR	= Economic Internal Rate of Return
ESRP	= Economic and Social Rehabilitation Program
FRP	= Feeder Roads Program
FY	= Fiscal Year
GDP	= Gross Domestic Product
GOM	= Government of Mozambique
HDM	= Highway Design and Maintenance Standards Model
IDA	= International Development Association
ICB	= International Competitive Bidding
IRP	= Tanzania Integrated Roads Project
KDF	= Kuwait Fund for Arab Economic Development
KfW	= Kreditanstt fir Wiederaufbau (Germany)
LCB	= Local Competitive Bidding
LRC	= Local Road Contractors
LRCI	= Local Road Construction Industry
N.A.	= Not Applicable
OED	= Operations Evaluation Department
p.a.	= per annum
PDP	= Priority Districts Program
RMI	= Road Maintenance Initiative
ROCS	= Roads and Coastal Shipping Projects
RSA	= Republic of South Africa
TA	= Technical Assistance

TOR = Terms of Reference
USAID = United States Agency for International Development
voc = vehicle operating cost
vpd = vehicles per day

Vice President:	Callisto E. Madavo
Country Director	Darius Mans
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Task Team Leader/Task Manager:	Abdelmoula M. Ghzala

**MOZAMBIQUE
SECOND ROADS AND COASTAL SHIPPING PROJECT**

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<i>Project ID:</i> P001804	<i>Project Name:</i> MZ 2nd road and coastal
<i>Team Leader:</i> Abdelmoula M. Ghzala	<i>TL Unit:</i> AFTTR
<i>ICR Type:</i> Core ICR	<i>Report Date:</i> December 29, 2003

1. Project Data

Name: MZ 2nd road and coastal

L/C/TF Number: TF-27855; TF-27856;
IDA-25990

Country/Department: MOZAMBIQUE

Region: Africa Regional Office

Sector/subsector: Roads and highways (93%); Central government administration (4%); Sub-national government administration (3%)

Theme: Other urban development (P)

KEY DATES

	<i>Original</i>	<i>Revised/Actual</i>
<i>PCD:</i> 08/07/1992	<i>Effective:</i> 08/13/1994	07/11/1994
<i>Appraisal:</i> 06/28/1993	<i>MTR:</i> 09/30/1995	09/09/1996
<i>Approval:</i> 04/07/1994	<i>Closing:</i> 06/30/2001	06/30/2003

Borrower/Implementing Agency: GOVERNMENT/MIN. OF CONTRC-WAT

Other Partners:

STAFF	Current	At Appraisal
<i>Vice President:</i>	Callisto E. Madavo	Edward V.K. Jaycox,
<i>Country Manager/Director:</i>	Darius Mans	Stephen Denning
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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: L
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:

Context. In 1992, following the peace accord, the reconstruction of the Mozambican economy became an urgent task. To support the recovery of the agricultural sector which accounted then for roughly 50% of the

GDP and 80% of employment, and export earnings, the Bank along with the donor community supported the Government's Transport Sector Strategy by committing funding in parallel for the First Roads and Coastal Shipping Projects (ROCS1) in 1992, followed by Second Roads and Coastal Project (ROCS 2) in 1994. ROCS1 focused on laying the groundwork in the sector through the provision of extensive technical assistance and training to strengthen institutional capacity and the formation of critical Government of Mozambique's Policy (GOM) to improve the transport sector on a sustainable basis. The Second Roads and Coastal Project (ROCS 2) was to focus mainly on road rehabilitation and maintenance investment program while further enhancing the institutional capacity of the road sector being implemented under ROCS1.

Objective. As stated in the Staff Appraisal Report (SAR), the original objective of the ROCS2 were:

- (i) to contribute to the restoration of economic growth through improving road transport and protecting selected past road investments by rehabilitating priority roads, undertaking backlogged periodic maintenance, and resuming regular maintenance with a goal of restoring 85% of the paved network and 60% of the unpaved network to good or fair condition; and
- (ii) further strengthening the capacity of the Road Sector, to ensure effective planning and monitoring by the government, and the development of private sector contractors and operations.

Both objectives are equally important. The sustained restoration of economic growth, depends in part on the institutional capacity of the road sector. Both objectives were clear and reflected the key elements of the GOM's 15-year Road Recovery Strategy which was accorded very high priority by GOM to support its immediate economic recovery target and long-term development goal of economic development. The Road Recovery Strategy had three key elements: (i) reforming the regulatory and policy environment; (ii) further strengthening institutional capacity; and (iii) restoration of priority road links (improving access to marketing for agricultural produces and imports) through minimum cost rehabilitation and deferred maintenance works. The Project objectives were also in line with International Development Association's (IDA) country assistance through its Economic and Social Rehabilitation Program (ESRP) and, more specifically, the Priority Districts Program (PDP) of Mozambique. The project objectives had also the support of the donor community who considered them worthy of their respective financial support. While the risks due to the large size of the project relative to the implementing agencies' capacity were of concern, the amount of planned investment would only meet the threshold level of transport sector investment needed to help the recovery of the economy. *Recognizing the risks due to the large size of investment the following decisions were made:* the road program was developed taking into account the managerial capacity at National Directorate of Roads and Bridges (DNEP), now Autonomous Road Agency, (ANE) and each Provincial Department of Roads and Bridges (DEP-DNEP); the limited number of local contractors and funding (local and donor, recurrent and capital). Given the uncertainty of peace in the country at the time, the design of the project was specifically made flexible and various risk mitigating measures were incorporated to capture the full benefits of the investments under varying conditions of project implementations.

3.2 Revised Objective:

Project Objectives remained the same through out the project implementation.

3.3 Original Components:

The project was estimated to cost a total of US\$ 814.6 million and planned for co-financing by: African

Development Bank (AfDB): US\$83.4 million (10.2%); the European Union (EU): 97.9 million (12.0%); United States Agency for International Development (USAID): US\$25.0 million (3.1%); Caisse Française de Development /Republic of South Africa (CFD/RSA): US\$17.0 million (2.1%); Arab Bank Economic Development (BADEA): US\$14.9 million (1.8%); Kuwait Fund (KDF): US\$14.0 million (1.7%); Kreditanstalt für Wiederaufbau (KfW): US\$9 million (1.1%) Feeder Roads Program (FRP) Donors: US\$14.6 million; and, Phase II donors: US\$181.8 million (22.3%). The International Development Association (IDA) Credit was US\$188 million. IDA as a lender of last resort was committed to finance "the next highest unfunded priority" while initially leading the other donors by funding two main roads in the early phase of the program. At the time of appraisal of the project about US\$276 million in addition to IDA Credit was committed by the donor community, sufficient to finance the first two years of the program and part of the third year. Assuming peace agreement hold an estimated additional US\$170-200 million was expected. GOM was committed to finance about US\$169 million - 100 % of the routine maintenance and an increasing share of the periodic maintenance over the life of the project estimated at US\$114 million and annual US\$10.5 million to cover the emergency and rehabilitation part of the Program. GOM in a letter of commitment had assured IDA to provide the level of resources needed and the mechanism of funding for road maintenance and rehabilitation program.

As stated in the SAR, the project's three components were to be co-financed, and included:

Component A: A civil work program (US\$750.6 million, or 92% of project costs) comprising:

- (i) emergency rehabilitation or "backlogged" maintenance of about 11,700 km of mainly unpaved roads, about 3,200m of Bailey bridges and a road signing program in all 10 provinces;
- (ii) rehabilitation of about 3,450 km priority trunk roads;
- (iii) labor based reconstruction of about 3,250 km of feeder roads; and
- (iv) routine and periodic maintenance of that portion of the network that was in good or fair condition;

Component B: Engineering Services (US\$50.1 million or 6% of project costs), such as detailed feasibility studies, design studies and supervision of civil works in support of the project; and,

Component C: The continuation of the ROCS1 Institution Building Program (US\$13.9 million or 2% of project costs) including the extension of limited technical assistance originally included in ROCS1, assistance to the local road contracting industry, and short term assistance in engineering, policy and management issues and logistical support to DNEP and the DEPs (including office equipment, vehicles, laboratory equipment and housing).

The design of the above three components were clearly linked to the two objectives of the Project described above. The Project focuses on rehabilitating and maintaining a road network essential to support the economic recovery and ensure the sustainability of the road assets through building institutional capacity and funding mechanisms. As noted in the project SAR, the project design incorporated essential lessons learnt from experience of a similar project in Tanzania and, prior project implementation experience in Mozambique and the lessons of OED (see Section 3.5).

3.4 Revised Components:

The original objectives of the project remained unchanged. However, over the implementation period, the Development Credit Agreement (DCA) was amended five times to accommodate the challenges the government faced in meeting its counterpart funds, to allow carrying out of emergency works (repair works to 2000 and 2001 floods), and to changes in the closing date to allow time for the completion of ongoing

works.

Specifically, the DCA was amended on December 2, 1998 to increase the percentage share of IDA Credit contribution for periodic maintenance. The rationale for the amendment was: (i) the need for additional periodic maintenance works with a prioritization of the road program to account for the postponement of a few major rehabilitation works financed by the donors; and (ii) the gap between the programmed expenditure to be financed by the road fund and the Road Fund's revenues due to the cap imposed on road fund revenues for macro-economic reasons. Accordingly, paragraph 1 of schedule 1 of the DCA was amended increasing IDA funding of periodic maintenance to 80% disbursement.

Further, on June 18, 2001, the DCA was amended to extend the original closing date of June 30, 2001 to June 30, 2002. Again, on March 24, 2001, the DCA was amended to extend the closing date from June 30, 2001 to June 30, 2002. On April 2, 2002, the closing date was further extended from June 30, 2002 to June 30, 2003. These were mainly due to extreme floods in two successive years 2000 and 2001, which caused extensive damages to the road network and which ANE and the donors (including IDA which was able to react quickly due to the flexibility of ROCS project) to shift attention to emergency roads repair (instead of periodic maintenance and rehabilitation). The other minor factor of delays was due to the nature of the project itself, which was opening roads with no systematic approach and no prior detail design, which in some cases resulted in major rehabilitation works instead of simple periodic maintenance as foreseen in the SAR.

Issues such as HIV/AIDS, gender and poverty monitoring not initially included in the project, were addressed through establishing a Social Unit. However, funding for the HIV/AIDS was provided by the cofinanceurs and did not require the amendment of the credit.

3.5 Quality at Entry:

The Quality Assurance Group (QAG) assessed the "project design to be sound" and "ready for implementation at the time of project approval". The ICR, too, assessed the quality at entry as satisfactory based on:

- (i) the consistency of the project objectives with GOM priorities and IDA's country assistance programs of removing the transport bottleneck to economic recovery on a sustainable basis;
- (ii) the special attention given in project design to lessons of experience from similar projects in other countries (such as the Integrated Roads Project in Tanzania), OED's recommendations and Mozambique's implementation of IDA financed projects. From the Integrated Roads Project in Tanzania, the design incorporated: carefully phasing of policy and investments, explicitly addressing the demand side issues in developing local contracting industry through the provision of suitable package works, attention to the quick resolution of the equipment issues; from OED, its recommendations from "Free-standing Technical Assistance for Institutional Development in Sub-Saharan Africa (No. 8573); and from prior projects in Mozambique, advance establishment of special accounts and careful disbursement planning; and advance agreement on maintenance and counterpart financing.
- (iii) clarity on the roles of IDA, donors and GOM in project implementation - with the support of the donors, GOM and IDA agreed that IDA's main role would be to continue assisting GOM in implementing its regulatory reform and institutional strengthening; financing priority civil works, as a

lender of last resort; and coordinating donor participation in the transport sector;

- (iv) risk management, the design of the project recognized the relative large size of the project to the GDP (15%) and the budget (27%) - key elements of risk mitigation measures in the project design were flexibility and the exit strategies through annual review of outcome in the event one or more of the assumptions did not work out. The design also recognized at the outset the institutional weakness of the implementing agencies at the start of the project and identified activities to enhance the capacity of the implementing agencies including technical assistance for implementation under ROCS1;
- (v) Performance indicators - an important aspect of the design of the project was the quality of the performance indicators covering economic, road condition, funding, capacity building and policy performance measures (Annex 1); and,
- (vi) Last but not least, the design of the project recognized the weakness in the institutional capacity of the project, and made provisions for the development of the local staff on a sustainable basis.

For all the above reasons, the project design was assessed to be comprehensive and sound. It incorporated relevant lessons identified and could well serve as a model for a more flexible sector investment approach, with wider applicability within Mozambique and the Africa region under post-conflict condition.

4. Achievement of Objective and Outputs

4.1 Outcome/achievement of objective:

Despite the large size of the Project, institutional weakness at the start of the project and the relative inexperienced staff of the implementing agencies, both project objectives were substantially met, and the achievement of the project objectives is assessed as *satisfactory*. The relative increase in traffic and decrease in transport cost are reflected in the relatively high post-construction economic rates of return on rehabilitated projects (see Section 4.3).

A. Support to Mozambique's Economic Recovery Program through Rehabilitation and Maintenance of Priority Roads.

This objective has been satisfactorily achieved in several respects. Overall, the quality of the civil works significantly improved the serviceability and maintainability of the critical restored road network. Through extended maintenance and rehabilitation, the road assets of past investments are being preserved. The share of good and fair road network which was 10% at appraisal now stands at 56% close to appraisal target of 60% for the total road network of 25,339 km in 2003. At closing date of project, about 78% of the paved road network was also in good or fair condition compared to completion target of 85%. On the average travel time declined by more than 50%.

Through the rehabilitation of the road network and bridges in the selected priority districts, especially the significant achievement of the Feeder Roads Program (FRP), the project helped remove transport bottlenecks particularly for agricultural production and distribution. Overall, the economy has recovered. GDP, which grew at annual rate of - 0.1% between 1980-1990, averaged 7.5% for the period 1990-2001. In particular, export of goods and services, which includes transport services, increased to 13.4% of GDP in 1990-99 from -6.8% in 1980-90. The high rate of growth of the construction sector has also added to the overall GDP. In particular, the six fold increase in expenditure as compared to appraisal for the labor-based reconstruction of priority feeder roads in which both gender participated have created significant number of jobs and generated income for the participants in the works, and has contributed to the overall alleviation of poverty. The job creation and income generation in the country side through

construction industry has been highly appreciated both by the beneficiaries and the donor community.

Resumption of regular private transport services to formerly inaccessible areas is now possible as road conditions have improved. The land mines were removed and the security situation had improved allowing the people to engage in social and economic activities. The lower unit transport costs in real terms have led to significant increased traffic as vehicle fleet have also increased from 13,000 to about 200,000 vehicles over the last ten years. The result is the increase in the basket of goods and services available in rural areas. The number of bicycles, improved school and social services, increased market activities, better housing conditions along rehabilitated roads, use of health posts, development of informal sectors are all evidence of the positive impact of roads improvement.

B. Strengthening the Capacity of the Road Sector

The institutional capacity building programs (technical assistance, training and studies) carried over from ROCS1 to ROCS2 were *substantially* achieved and contributed to better planning and monitoring of the road maintenance by the government and the development of private sector contractors and operations.

Planning and monitoring. While effective planning and monitoring by the Government need to be further strengthened, modest progress has been made under the project. Further, to make the sector more efficient and effective, the Road Agency (ANE) has been established and strengthened as an autonomous agency with its own Board. The Road Fund, initially under ANE, has become independent of ANE with its own separate board. A direct transfer mechanism of road fund revenue has been agreed and mechanism for the transfer of revenue from oil companies to the Road Fund is being worked out. Capacity to manage the sector and sustain gains from the investments has substantially improved in both ANE and the Mozambique road sector as a whole. Of over one hundred young engineers trained under ROCS1 and ROCS2, 41 engineers were employed in ANE where some have taken line responsibility. The remaining engineers are either working in the public or private sector in Mozambique. A Social Unit which was established under DNEP, is now part of ANE with an expanded responsibility to address HIV/AIDS, poverty and gender. The Unit also has setup a database for monitoring the use of labor based methods in road works.

Local contracting industry. A competitive local road construction industry is emerging. The number of private contractors in the industry has significantly increased. Local contractors were trained and local contractors association with over 50 construction firms have been formed. Their capacity has improved with the support of the TA funded under ROCS1 and ROCS2 projects. With the direct fund transfer mechanism expected to be in place soon for the Road Fund, the uninterrupted funding for road maintenance and operation would remove major constraints and further enhance the development of a competitive road construction industry.

CETA Sarl, a construction enterprise, has been transformed from a state owned enterprise to private enterprise with acquisition of the major equity by company managers, technicians and workers. The partnership with Mozambique Investment Company, a venture capital company, has provided CETA Sarl, an opportunity for acquiring good practice in the construction industry. In addition, the ten Provincial State Enterprises for Construction and Maintenance of Roads (ECMEP) have been consolidated into three enterprises. Increasing share of their annual works is now shifting from direct to competitive bidding. By 2005, no direct contract will be assigned to ECMEPs.

Technical Assistance and Consultants Services to ANE have been effective. While students were

recruited and trained in universities both in country and abroad, the large technical assistance has enhanced the capacity of ANE. The young engineers trained under ROCS1 and ROCS2 financing have taken line responsibilities. In addition, several critical useful studies have been financed under the projects and the findings and recommendations of some of these studies are being applied with positive impact. In particular, the *Integrated Road Sector Strategy for Mozambique*, the *Financial Management Systems Developments and Implementation Study*, and the *Environmental Impact Assessment for the Roads and Bridges Management and Maintenance Program* helped the development and preparation of the on-going *Roads and Bridges Management and Maintenance Program* (RBMMP). The *Highway Network Management System* (HNMS) was another important study which may need additional work to lay down a good basis for the assessment of road roughness and road condition. On the institutional front, GOM planning and procurement capacity was improving with a number of planning, accounting, payment and procurement procedures now, well established. Local contractor and consultant capacity was also showing improvement. Nearly US\$ 168.08 million, contracted out for road maintenance works and feeder roads program, was carried out by local contractors.

4.2 Outputs by components:

A. Civil work program (US\$750.6 million, SAR; US\$ 695.0 million, ICR)

Overview. The output of this component is rated as *satisfactory* and has contributed to the achievement of objective 1. Field inspections at completion of rehabilitation and maintenance works showed the quality of works to be overall above average. To accelerate the economic recovery, especially agriculture, enhance job creation and income generation more resources were directed to funding labor-based construction of feeder roads from the rest of the civil work program. Social clauses in civil works contracts were applied to help create awareness of and to mitigate the spread of HIV/AIDS.

(i) **Emergency rehabilitation or "backlogged" maintenance (US\$105.5 million SAR; US\$ 141.1 million, ICR).** The project was declared effective on July 11, 1994, just three months after Board Presentation. Since the project was ready for implementation, within a short time emergency rehabilitation and periodic maintenance works through out the country were launched. At the time, about 11,700 km of mainly unpaved roads, and about 3,200m of Bailey Bridges were estimated to need emergency rehabilitation or "backlogged" maintenance. A total of 5,993 km of roads and 3,200 meters of Bailey bridges types were executed under emergency maintenance. The road-signaling program in all ten provinces was fully executed. As noted above, the traffic volume increased and travel time decreased on rehabilitated roads. For example, the price of fish fell in inland towns served by the rehabilitated roads. As reported in the Project's supervision report, by April 1996, over 6,200 km had received major or labor-based rehabilitation, emergency opening or periodic maintenance.

(ii) **Rehabilitation of priority trunk roads (US\$ 400.4 million, SAR; US\$ 386.1 million, ICR).** The plan was to rehabilitate about 3,450 km. Actual total roads rehabilitated was 1,436.7 km consisting of 1,227.1 km of major paved road and 209.8 km of major unpaved roads. The small share of rehabilitation works as compared to appraisal target was due to the serious deterioration of the road condition, higher costs due to the limited number of contractors participating in the bids, the lack of additional resources due to the six fold increase in actual expenditure (compared to the planned) for feeder roads to stimulate economic growth and alleviate poverty through more intensive Feeder Road Program, and the shortfall of US\$42.5 million in expected donors' funding.

(iii) **Labor based reconstruction (US\$ 12.0 million, SAR; US\$ 73.86 million, ICR).** The total planned labor-based Feeder Road Program for rehabilitation was about 3,250 km of feeder roads.

However, the total actual length of feeder roads rehabilitated was 6,106.6 km. The labor based Feeder Roads Program created significant jobs and generated income. The program served as a training ground of local contractors whose number now stands at over 50 contractors.

(iv) **Routine and periodic maintenance (US\$137.0 million; US\$ 94.2 million, ICR).** The road network at the start of the project had only about 10% in good to fair condition, compared to 56% at project completion due the successful routine and periodic maintenance carried out under the project. Over the project implementation period, a total of 88,545 km of roads received routine maintenance - on the average of 11,000 km per year. However, the length of roads which had periodic maintenance was 434 km or 18% of the initial target. This was due to shifts in resources allocations to (i) routine maintenance from periodic maintenance; (ii) labor-based reconstruction (US\$ 12.0 million, SAR; US\$ 73.86 million, ICR); and (iii) emergency rehabilitation or "backlogged" maintenance (US\$105.5 million SAR; US\$ 141.1 million, ICR) the reduction in the anticipated contributions of the donors (US\$42.5 million) and the increase in road construction unit cost. The Government, however, despite the weakness in making timely transfer of resources to the road fund, has slightly exceeded its commitment to the project financing.

B. Engineering Services (US\$50.1 million, SAR; US\$38.4 million project costs)

This component financed: (i) Feasibility and Surveys (Appraisal: US\$4.5 million; Actual: US\$7.0 million); (ii) Detail Design (Appraisal: US\$9.4 million; Actual: US\$4.5 million) and, (iii) Supervision (Appraisal: US\$31.9 million; Actual 26.9 million). Overall, execution was satisfactory. The government has continuously been committed to enforcing the contract, especially with regard to the quality of works. Government supervision of consultants and contractors was strict. Those who did not perform as expected were replaced. This may have contributed to the overall quality of the civil works.

C. The continuation of the ROCS1 Institution Building Program (US\$13.9 million, SAR; US\$ 38.1 million)

This component financed: (i) Road Sector Capacity Building and Local Contract Development Program (Appraisal: US\$4.3 million; US\$11.6 million; ICR); (ii) Policy Support (Appraisal: US\$1.5 million; Actual: US\$1.0 million); and (iii) Logistics (US\$6.7 million; Actual US\$25.5 million). The execution of this component was also satisfactory. Significant resources were used for Bailey bridges, and logistic support to ANE such as office equipment, vehicles, laboratory equipment and housing. The latter is an incentive that ANE has to attract and retain key staff, a key issue of sustainability in Mozambique where demand for qualified engineers is high.

D. Safeguard Policy

HIV/AIDS, social, gender and environmental issues emerged as a major concern of ROCS2. An estimated 1.3 million people are infected with HIV in Mozambique and the epidemic is now into its second decade. HIV/AIDS is a major challenge to social and economic development, and the capacity of the Government, communities and families. This is now addressed through ANE's Social Unit's Action Plan. ANE's Social Unit is the designated AIDS Focal Point for the road sector at the central level, in charge of dealing with issues related to HIV/ AIDS. Its mission is the coordination of programs at the level of ANE and overseeing its follow-up and evaluation, and coordinating with the other national HIV/AIDS programs. The social Unit has commissioned two studies aimed at recommending on actions to minimize the impact of the road works on STIs and HIV transmission (Austral, 2002) which form the basis of the Strategy for the HIV/AIDS sub-component of the Social Unit's Action Plan (from 2003 to 2005). Guidelines were issued and a set of Social Clauses is now attached to the technical specifications of all roads sub-projects.

The relationship between the project staff and the local communities, government officials and traditional leaders is considered an important aspect that will contribute to the overall success of road projects. Under the social clauses, the contractor is obliged to comply with a series of requirements related to social issues – social relations, gender, health, security, wages, living conditions, etc., concerning the contractor's employees as well as the local communities. The social clauses state that the contractor should use all reasonable endeavors to ensure workers follow this program. The contractor is required to allow his workers to participate on HIV/AIDS activities for three hours per month during working hours; to schedule appropriate timing and duration for the implementation of HIV/AIDS activities as part of the work plan of the work force and key personnel; to provide suitable sites for communication activities and for condom distribution, monitoring of the implementation of Peer Educator activities and the provision of support as necessary to the ASP. The Social Unit has developed AIDS awareness and information activities in coordination with the health institutions, with support from NGOs. These activities are now being financed by the follow-on Project. With respect to gender issues related to road work, the social clause also states that at least 25% of the total unskilled labor force should be women.

4.3 Net Present Value/Economic rate of return:

The economic evaluation is based on following six selected roads. As shown in the list below, works on the different roads ranged from periodic maintenance to new construction.

Road section	Length	Type of works
Maputo – Namaacha Road	75 km	Part construction, part overlay
Marracuene – Manhica Road	48 km	Widening and overlay
Chonguene –Chibuto Road	52 km	Upgrading to paved surface
Inxhope – Gorongosa Road	73 km	Part reconstruction, part periodic maintenance
Gorongosa – Caia Road	224 km	Mostly new construction
Pemba – Montepuez Road	202	Reconstruction

The re-estimated EIRRs relative to the appraisal estimates and NPV for each road is summarized below. Five of the six roads show ERR values exceeding 12 per cent, with a range from 12.8 to 57.6 per cent. The exception is the Gorongosa-Caia road, where the indicated rate of return is 10.6 per cent, below the 12 per cent benchmark. However, the road will in practice constitute a vital link in the country's main north-south highway, and may yield substantial development benefits in the longer term, especially once the Zambezi river has been bridged at Caia, as is currently planned. Sensitivity analysis carried assuming a 20% decrease in projected benefit showed above the 12% for all except for Gorongosa-Caia road which reduced to 8.2%.

EIRR (in %) and NPV (12%, US\$ million)

	SAR	ICR	
	EIRR	EIRR	NPV
Maputo – Namaacha Road	24.7	18.81	7.9
Marracuene – Manhica Road	49.0	57.63	9.71
Chonguene –Chibuto Road	32.8	20.1	4.03
Inxhope – Gorongosa Road	23.0	12.8	0.53
Gorongosa – Caia Road*	-	10.6	-6.13
Pemba – Montepuez Road	22.7	18.51	6.50

*Result could radically change for the better once the Zambezi River Bridge is constructed

4.4 Financial rate of return:

Not Applicable

4.5 Institutional development impact:

Overall, institutional impact is positive. DNEP, responsible for maintenance and management of the road system under ROCS2, saw further strengthening following its transformation to ANE. The Road Fund which is part of ANE is being reorganized as a separate unit with its own board. Over one hundred students have graduated from universities mainly in engineering studies. These young engineers are having hands-on experience under experts financed under the project. A private local contracting industry has emerged with over 50 contracting firms and executed most of the feeder road program and road maintenance civil works. The contractors have formed an association which has been fighting for a bigger share of the of the investment contracts. The former roads brigades, ECMPs are increasingly operating on competitive bidding basis. The training provided to the contractors has significant positive impact on efficiency and quality of works completed. The Social Unit with its social clauses is addressing issues of AIDS/HIV, gender and environmental issues. The findings and recommendations of studies completed under the project are being implemented with an overall positive impact (section 4.1). However, notwithstanding the positive impact made by the project to date, systematic strengthening of the planning and monitoring capabilities of ANE need to be pursued in follow-on projects.

5. Major Factors Affecting Implementation and Outcome

5.1 Factors outside the control of government or implementing agency:

Flooding: In 2000 and 2001, exceptional rainfall caused a one in 100-year flooding. Resources had to be diverted from the rest of the program to repair the damages done to certain sections of the roads. The flood exposed that certain sections of roads experienced repeated failure, underscored the need to address such problems with special design taking into account the long-term solution.

Phasing of institutional and policy reforms and civil works: By focusing on institutional and policy reforms under ROCS1 and creating institutional capacity, the project was able to make progress on the civil works program under ROCS2. In this regard, the Project staff made wise decisions by taking into account the experience from similar projects and the recommendations of OED report on free standing technical assistance for institutional development in sub-Saharan Africa. The subsequent success of ROCS2 has attracted the attention of the Governments of Angola and DR of Congo which are addressing similar post-conflict economic recovery and institutional problems in the road sector, as did Mozambique in the early 1990s.

Donor coordination: The donor coordination in the road sector in Mozambique was generally good and greatly contributed to the successful implementation of the program. However, more donors having support staff at the local level will further improve coordination. The alignment of the individual donor's assistance with the project objectives and IDA's country assistance program made coordination relatively easy for IDA, the lead agency.

Technical Assistance: The quality of technical experts recruited for TA was overall good and contributed to the accomplishments of the project objectives. At the time of project implementation start up, ANE had

only about 5 national engineers. ANE now has retained 41 of over 100 young engineers trained under the project. The TA also provided hands-on-experience for ANE's young engineers.

Lack of adequate materials in the close vicinity of some road works: To address this general issue (which is typical in many other countries), the Bank assisted ANE to set up a research and development unit headed by an international material engineer to develop alternative economic road construction materials. This was done and a joint paper by Mozambique and Uganda (with Bank support) on the new construction materials was prepared and published and presented at the International Conference on Low Traffic Roads held in Nevada in June 2003.

Cost escalation. As noted in Section 5.4, cost escalation was higher than anticipated at design due to several factors including cost of material and higher increase in the general level of the domestic prices. During project implementations, such increase in prices affected price adjustment clause to contracts lasting less than 18 months.

5.2 Factors generally subject to government control:

Government Commitment: Despite delays in timely disbursement, particularly from the Road Fund which continues to be of concern for the implementing agency and the donor community, the commitment of GOM to the sector has remained strong. GOM has largely met its share of the counterpart funds. In fact, it paid US\$176.8 million to the project compared to US\$169.0 million foreseen originally. However, the low level consumption of fuel due to low traffic volume may constraint generating adequate road fund in the immediate future.

5.3 Factors generally subject to implementing agency control:

Delays in payments of local contractors: Over the course of project implementation, for reasons of meeting macroeconomic targets, the Ministry of Finance exercised payment restrictions from the Road Fund. This had adversely impacted the continuity of payments to the local contractors. Until the mechanism for direct transfers to the Road Fund is put in place, the uncertainty will continue to be a potential problem to the development of the local contracting industry.

Flexibility: The establishment of a Social Unit within ANE has helped articulate policies, and taking measured actions related to social, gender, environment and HIV/AIDS issues. Based on recommendations of studies, and experimentation on a small scale, Social Clauses are now an important feature of every civil works contract. As noted above (Section 4.2), the social clauses oblige the contractor to take measures related to the welfare of the workers and the community where roads construction and maintenance works are being executed.

5.4 Costs and financing:

At appraisal, the total project cost was estimated at US\$ 814.6 million, including contingencies of US\$ 102.0 million of which US\$ 188.0 million equivalent was financing by IDA, US\$ 169 million from GOM and the balance US\$ 457.6 million from the cofinanciers. The total actual cost of the project was US\$776.26 million, falling short by US\$38.34 million of the appraisal amount. Financing was from IDA Credit, US\$186.26 million; from GOM US\$176.8 million, and US\$413.2 from other donors (Annex 2).

On the cost side, unit costs assumed at appraisal for each category of works were on the low side, partly due to the absence of a competitive construction industry, partly to the greater than expected deteriorated

state of the roads, and partly due to lack of adequate construction material in close proximity to the road works (See Section 5.1).

Average Cost (US\$/km)

Type of Activity	Appraisal	Actual	% increase
“Backlogged”/emergency works	6,000	23,500	292
Rehabilitation	150,000	286,740	91
Feeder Roads	17,000	61,000	259
Periodic maintenance	4.500	12093	169
Routine maintenance	250	765	206

"Backlogged" maintenance/emergency works/ was appraised at US\$6,000/km but actual cost averaged US\$23,500/km, an increase of 292%; average planned cost of rehabilitation was US\$150,000/km compared to actual cost of US\$ 286,740 per km (ranging from US\$ 106,000 per km to US\$350,000 per km). Assumed periodic maintenance cost was US\$17,000/km for resealing of paved roads while actual cost averaged US\$61,000/km. Feeder roads which had an estimated cost of US\$4,500/km at appraisal but has actual average of US\$12,093 per km. Routine maintenance cost US\$250 per km had an average US\$ 765/km. Thus, net increases in unit prices range from 91% for periodic maintenance to 292% for "backlogged" maintenance or emergency works, far above the price contingencies of the baseline costs allowed in the project design. This explains in part the relative shortfalls in the actual length of rehabilitated roads and in the limited size of the length of roads receiving periodic maintenance. A six-fold increase in resource from the appraisal estimate which resulted in doubling of the feeder roads as well as the US\$38.34 decrease in expenditure also contributed to the shortfall in the length of roads receiving rehabilitation and periodic maintenance.

6. Sustainability

6.1 Rationale for sustainability rating:

The Project sustainability is rated as likely due to the favorable factors made possible by the achievement of the project and GOM commitment:

Favorable sector policy environment: The favorable private sector policy stance has helped develop local contractors. The EMCEPs are increasingly being encouraged to bid for contracts. By 2005, they are expected to fully compete for all works. CETA Sarl, is transformed from state-owned to a private company and is operating with a venture capital company as a shareholder, Mozambique Investment Company. The development of such a competitive construction industry environment is likely to reduce costs and enhance quality of construction.

Growing institutional capacity: The streamlined Road Agency organizational structure focuses on contract management and monitoring, while trained young engineers are being exposed to best practices by working with experts in their fields. However, although the current relative higher remuneration to professionals at ANE gives the Agency a competitive edge to attract and retain qualified staff, the incentive needs to remain competitive as ANE has already lost over half of its trained staff to the private sector and other Government agencies.

Road maintenance fund: Mechanism being developed for direct transfer will encourage planning and allow optimum allocation of the resources of the Road Fund by the Road Fund Board, which is separate

and independent from the Road Agency (and its Board).

A follow-on Project: The quick commencement of the ongoing ten-year follow-on project, Roads and Bridges Management and Maintenance Project (RBMMP) which provides broad donor financial and technical support to the road sector is likely to deepen institutional and policy reforms and contribute to the sustainability of the road network in good to fair condition.

Social recognition for members of the Board of the Road Fund: Members of the Board include representatives of the contractors association and road users. The institutional arrangement is expected to provide transparency and effective use of the road fund. Moreover, given the potential social pressure on members of the Board by their respective constituents, the probability of a good functioning Road Fund is enhanced. This is evidenced by the relatively high success of the routine maintenance program under the project where local contractors serve as pressure group as they are the main beneficiaries of the road fund expenditure.

A functioning Social Unit: In the Road Agency, the Social Unit advocates for measures related to HIV/AIDS, gender, road safety, and environment policies. The Social Unit's social clause included in every bidding document has enhanced the quality of works and the welfare of the workers recruited locally. By creating awareness and behavioral changes, its policies promote the fight against the spread of HIV/AIDS, the participation of female in the work force, the preservation of the environment and the road safety. Through the policies promoted by the Social Unit, the human resources of ANE and the community, for whom the roads are being constructed, may be protected from the spread of AIDS/HIV. The participation of women in civil works activities would enhance poverty alleviation.

GOM commitment: GOM has demonstrated its commitment to its Road Recovery Strategy. During the implementation of ROCS2, GOM has contributed US\$178.6 million compared to its commitment of US\$169 million at project appraisal. However, there were times when contractors experienced delayed payments. This will be corrected through direct transfer mechanism to the road fund from the oil companies.

6.2 Transition arrangement to regular operations:

As noted above, most of the measures needed for sustainability of the benefits of the project were integrated or being integrated into regular operation of ANE. In particular, the road maintenance and institutional capacity building measures have been continued under IDA funded follow-on project, Roads and Bridges Management and Maintenance Project (RBMMP). However, continued donors support to the follow-on project depends on the Government commitment to improve the transfer mechanism for the road fund. The government has adopted a legislation, which support the establishment of a separate Road Fund, and it is actively studying the experience of other countries with direct transfer mechanism from the oil companies (road user fee).

7. Bank and Borrower Performance

Bank

7.1 Lending:

Bank Performance in lending operation was *satisfactory*. The extended dialogue between the Bank and GOM, the desire of Project team and management to develop a model investment program which incorporated the lessons from the experience of GOM in project implementation, other projects in the region, OED's findings and recommendations and lessons from Road Maintenance Initiative (RMI)

contributed to the quality (Section 3). This resulted in a model investment program, which is characterized by flexibility, realism and focused on supporting the economic recovery of Mozambique, and creating institutional capacity and policy reform. Already, the Governments of Angola and DR of Congo are studying the Mozambique's successful post-conflict experience.

Identification was *satisfactory*. ROCS1 became effective in 1992 and ROCS2 in 1994. The phased investment program allowed ROCS1 to address mainly institutional and policy reforms to create favorable conditions for successful implementation of the works program under ROCS2.

Preparation of the Project was also *satisfactory*. Preparation of the project was undertaken during a very difficult period in Mozambique's history. Although the peace accord was signed in 1992, the road network was mined and the bridges have been destroyed. It was difficult to drive around and ascertain the road condition. Some of the surveys had to be done from the air, as there was no access. Priority had to be given to areas, which can contribute to improved agricultural production. There was no certainty which agricultural product the market would favor. The intuitional capacity was relatively weak. Implementing agency had no more than five engineers. The uncertainty, the lack of full knowledge of the situation on the ground, the direction of development of the agricultural sector all led the Bank team to approach the preparation from a new perspective and hence the focus on phasing of investment activities, institutional capacity and policy reforms in stage. The development was to be gauged through annual reviews. Subsequent developments have confirmed that the model was appropriate for Mozambique during the post-conflict period where long-term planning was difficult due to the political and economic uncertainties facing the country.

Appraisal was satisfactory. An appraisal team of specialist in finance, engineering, operation, procurement, and environment participated. Government commitment was documented in the *Letter of Sector Policy* and *Letter of Commitment of Local Resources*. The risks due to the pattern and speed of agricultural recovery, the possibility of reversal of the security situation, the timing and extent of regulatory reform and institutional strengthening were considered. The implementation risks in particular in the area of funding, procurement, contract management and contract supervision, equipment and contract development, and training and staff retention within Road Agency were analyzed. Flexible overall project design, phased investment plans, and annual project reviews mitigating some of the risks emerged as key aspects of the appraisal.

7.2 Supervision:

Over the period of 1994-2003, supervision missions was led by three task team leaders. The continuity of the staff was maintained through relatively well-documented supervision activity reports. The change in staff did not seriously affect the quality of supervision. The skill mix of the supervision varied depending on the issues the staff had planned to address during the specific supervision. As noted in Section 3, the Quality Assurance Group rated the quality of supervision assessment as 'satisfactory' and the realism of the project performance indicators as 'highly satisfactory'. The supervision team is credited for greatly improving the social orientation of the project, the development of an HIV/AIDS component, and piloting in one subproject area with the intent of expanding it in all subproject areas. In view of the limited technical staff of the implementing agency, Bank team's involvement was critical in assuring the quality of institutional and policy reforms. The task team, has remained within the spirit of the design of the project by being flexible throughout project implementation. In particular, during the period the government was unable to meet its commitment on the road fund due to its other commitments to achieve macroeconomic targets, the teams's flexible stance was critical to assure continued donors' commitment and to the overall success of the project. Overall, the performance of the IDA supervision staff was consistent and

satisfactory.

7.3 Overall Bank performance:

The overall Bank performance was rated satisfactory. The lending team has developed a sectoral investment model for Mozambique, which has generated wider interest as a good prototype for project design in post-conflict countries in Sub-Sahara Africa region, although the model could have even wider application under certain circumstances. The supervision team, with the appropriate skill mixes has followed the flexible approach and contributed to the overall quality of the project outcomes. The supervision team's initiative has helped launch Social Action Plan which addressed HIV/AIDS, poverty, gender and labor input data base, not initially included in the project appraisal.

Borrower

7.4 Preparation:

Borrower preparation of the project was satisfactory. Since the government had planned to provide only about 20% of the total appraisal project cost of US\$814.6 million, a key element of project preparation was winning the support of the donor community who would fund the balance of 80%. Through well documented *Letter of Sectoral Policy, Letter of Commitment of Local Resources, Transport Sector Strategy and Road Recovery Strategy*; GOM persuaded the donor community of its serious commitment to the project. With only five engineers in house, most of the preparation had to be contracted out, or implemented with recruited technical assistance staff. The selection of TA staff was executed well. Thus, the government has performed well in policy formulation, resource mobilization and consultant recruitments.

7.5 Government implementation performance:

Overall, government implementation performance has been satisfactory. Having charted the strategy, it has stayed the course. Given its limited capacity, it had to rely on technical assistance for much of the implementation. Its selection of TA staff proved to be satisfactory. In some cases where the TA staff did not perform as expected, the Road Agency's management did not hesitate to ask for replacement. Except for the recurring issue of the road fund transfer mechanism, which has at times been a source of conflict with the donor community, it has performed well given the major institutional constraints it faced at the start of the project. Moreover, at project closing, the road fund transfer mechanism has been agreed and the Road Fund was established with a separate Board from the Road Agency's Board. It has supported the social issues by enforcing the social clauses.

7.6 Implementing Agency:

Overall, ANE (its predecessors DNEP and DEP), has performed satisfactorily. It has been proactive in certain areas such as establishing of the Social Unit. Over the implementation life of ROCS2, ANE has emerged as a potential model Road Agency. It has young engineers willing to get field experience. However, to retain its staffs, it need to pay relatively competitive salaries. Moreover, at this time, the skill mix of ANE is strongly biased towards civil engineers and may benefit from recruiting economists, and statistician, particularly in the area of planning.

7.7 Overall Borrower performance:

Overall, the borrower's performance is rated as satisfactory. Both the implementing agencies and the Government have shown serious commitment even under difficult budgetary constraints. GOM's

commitment to institutional reforms and staff training, its willingness to provide better incentives to retain the staff are evidences that the government has remained committed to the policies expressed in the sector letters to IDA at the time of preparation of the project.

8. Lessons Learned

Successful post-conflict transitional model: ROCS's relatively large size of investment, number of donors, and number of contracts and the relative weak institutional capacity puts it in the category of complex projects. Yet, the success of the Mozambican experience under the ROCS project confirmed the validity of the hypothesis on which the project was initially conceived --*that flexible overall design, phased investment plans and annual project reviews can lead to effective outcome even under weak institutional environment, provided the project design incorporates technical assistance, training and supervision, and up-front policy reform to manage the risks. This view was shared by other donors.* This model, put forward by the project team in cooperation with the borrower, provided the strategic conceptual framework for donors consultation. It also provided the basis for building the donor community trust and confidence in support of the program with IDA as a lead agency. The approach helped mobilize significant share of the needed resources and helped remove the transport bottleneck with significant positive impact on post-conflict reconstruction of Mozambique. The success of ROCS2 and its significant impact on the economic recovery is evidenced by the relatively high GDP growth (7.5% over 1990-2001), increased export of goods and services (from -6.8% to +3.4 % of GDP); significant jobs and employment creation under FRP; improvement in the basket of consumption in rural areas. Moreover, as noted above, the success of ROCS has inspired curiosity of other neighboring post-conflict countries who have also seen, like Mozambique, their road networks not only deteriorated but also mined. Overall, the project design incorporated best practices and could serve as a model for a more flexible sector investment approach with potential applicability within Mozambique and the Africa region. However, while the approach has been successful for post-conflict situation, once the transition phase is completed, continuing on the same path would have serious drawback. The flexibility in investment work may lead to disregard serious planning and execution towards achieving specific targets on long-term basis. With limited resources for the sector, this could be a serious problem. The follow-on project is designed to inculcate discipline and careful planning, execution and achieving of well planned and prioritized targets, according to the national integrated road strategy.

The Road Fund Dilemma: In 1997, during the fourth year of project supervision, GOM was faced with hard budget constraints arising from competing commitments. On one hand, there was a resource need for additional periodic maintenance for works, stemming from the rephrasing of a few major rehabilitation works financed by donors; and on the other hand, there was a resource gap between the programmed expenditures to be financed by the Road Fund and the Road fund's revenues due to the cap imposed on road fund revenues for macroeconomic reasons. Bank project team and management, after due consideration of the borrower's resource constraints; supported the borrower's request for an increased IDA funding of periodic maintenance up to 90%. As a lead agency, IDA's response played a critical role in harmonizing the competing demands of the donors and helped the government meet its international commitments. Such flexibility with respect to conditionality constraints, particularly in a post-conflict society, is critical to bridge resource gaps during transitional adjustment period, and the conflicting demands of international development agencies.

Social orientation of the project: Though mitigating measures for HIV/AIDS was not included in the original design, the supervision team together with the Borrower addressed social issues by including an HIV/AIDS component, piloted in one subproject area and expanded it to all subprojects. This experiment

has led to social clauses, which oblige contractors for the welfare and protection of their workers, particularly, from the spread of HIV/AIDS. In addition, supervision has led to improvement in the mechanisms of monitoring and evaluating the social and economic impact of the project. Such proactive stance of supervision team need to be encouraged and such team should be recognized for its innovative approaches.

Appropriate engineering planning and design: The 2000 and 2001, one in a hundred-year flooding exposed serious repeated failures in certain sections of the rehabilitated roads. Floods of less than one in a hundred-year are more frequent in most of the developing countries and are known to cause serious damages to roads and bridges. This underscored the need to specifically address the trade-offs of the economic life of roads and bridges in flooding areas and to carefully construct such flood prone road sections. The flexibility of the project design allowed to quickly respond to the urgent needs for road repair following floods. However, unless for emergency operation, it is preferable to approach the road sector and road works with a systematic approach with appropriate detailed design prior to starting works. This would allow to know the exact nature of works needed and properly estimate the costs and avoid surprises, overruns, unnecessary claims and undue delays during construction.

Development of competitive local road construction industry: With the support of TA and demand for contracting capacity under ROCS2 to the local road contracting industry, the number of private contractors in the construction industry have significantly increased. A contractor association which champions its members interest has been created. However, quality of works and cost of construction have emerged as a concern (section 5.4). ANE plans to address these issues through more training and through the promotion of competitive bidding to stimulate innovation and cost effectiveness of the industry. By 2005, the plan is to eliminate all direct awards of all civil works and bid all contracts, including Provincial State Enterprises for Construction and Maintenance of Roads and Bridges (ECMEPs). In view of the Bank's commitment to poverty alleviation and the relative importance in value added of civil works contracts to the GDP and poverty alleviation, special attentions need to be given to the development of domestic contracting industry. In Mozambique, the stable flow from the road fund to road maintenance and the labor-intensive works for Feeder Roads Program could serve as ground for the development of the local contracting industry.

Lessons already incorporated in the design of the follow-on project, BRMMP. Reflecting the requirement of the improved economic environment, under which BRMMP is to be implemented, its design has: (i) incorporated a systematic approach to all road works; (ii) revised the tender documents to limit the price adjustment clause to contracts expected to last more than eighteen months; (iii) introduced adequate, realistic and feasible sector reforms including separation of the road Fund, from ANE and having separate boards of directors and one road council overseeing the overall sector; and (iv) within ANE and the Road Fund separate state of the art financial management systems and training program for national staff to adequately operating these financial management systems.

9. Partner Comments

(a) Borrower/implementing agency:

Background and Overview

This report has been prepared as part of the Borrower's contribution to the Implementation Completion Report (ICR) for the Second Roads and Coastal Shipping Project (*ROCS-2*), in accordance with the standard requirements for World Bank credit agreements, and on behalf of the Director General of the Administração Nacional de Estradas (ANE) of the Ministry of Public Works and Housing, the Government of Mozambique's executing agency.

Any assessment of the Second Roads and Coastal Shipping Project must begin with an understanding of the context in which the project was conceived and implemented. *ROCS-2* was initiated very shortly following the peace accord and the beginning of economic and social recovery efforts in Mozambique. It also followed immediately on the heels of the First Roads and Coastal Shipping Project (*ROCS-1*) and ran concurrently with it. Whereas *ROCS-1* addressed mainly the problems of institutional capacity and providing technical assistance to the road sector, *ROCS-2* addressed the need to urgently open and rehabilitate the badly deteriorated road infrastructure, and then to provide the necessary maintenance in order to sustain the benefits from that investment. It also complemented the institutional support provided under *ROCS-1*, a process that began with institutional capacity represented by two Mozambican engineers and has since grown to a roads management system that now employs dozens of local engineers, supported by technicians and others, with a total professional staff of over 100.

It must also be understood that at the time *ROCS-2* was initiated and during its implementation, there was public concern, including press coverage, regarding the appropriateness of so much of Mozambique's scarce resources and access to credit being invested in roads. While the need to upgrade the road network was apparent, some of the public questioned the capital-intensive nature of road infrastructure investments at a time when other social needs were so glaring. There were also questions regarding the selection of roads to open and rehabilitate; the technologies being utilized to reconstruct the road network, the employment of foreign consultants and contractors, and the lack of capacity of local entrepreneurs. In short, questions regarding the effectiveness of the project were raised from the start.

The *ROCS-2* project was able to respond to these challenges as a result of the flexibility built into its design and implementation. The main lessons learned from *ROCS-1* included the need to strengthen project design and control. To address many of the issues being raised by the public, the implementing agency, initially DNEP and later ANE (referred to jointly as DNEP/ANE) with the assistance of the World Bank responded by selecting a team to examine these problems. To address the macroeconomic-impact and resource-allocation issues, more systematic social-economic benefit analysis was incorporated into project selection to ensure that road rehabilitation had the greatest immediate impact. The flexibility of *ROCS-2* was demonstrated as programs were developed to train and support local small contractors so as to develop local capacity. And research into the suitability of local construction materials was undertaken so as to improve the quality and sustainability of the civil works.

The challenges continued during implementation as Mozambique was ravaged by floods in 2000 and 2001, which in addition to the horrendous human and social costs, also caused substantial damage to a still fragile road network. *ROCS-2* enabled the Government to respond quickly and effectively to these needs by allocating emergency funds to the repair of the most impacted sections of roads.

During the course of *ROCS-2*, contracting problems also arose, due to both institutional and financial reasons including significant depreciation of the local currency, resulting in the need to efficiently deal with claims and price adjustment issues. The flexibility of *ROCS-2* enabled the Government to resolve these problems and to ensure that projects and contracts were successfully realized.

In all these matters, the very close collaboration of ANE, the Bank and other donors enabled the Government to react effectively and efficiently. Moving from *ROCS-1* to *ROCS-2* and now ultimately to *Roads-3* (the current program being funded by the Bank and other donors), DNEP/ANE has been able to move forward and ensure sustainability.

Mozambique's road network at the end of *ROCS-2* is dramatically improved over its state at project inception. But as importantly, road sector management is also dramatically improved, including the realization of sector and institutional reforms, increased management capacity, planning capabilities, better engineering design, proper contract management, and state of the art financial management.

To be sure, much remains to be accomplished in upgrading the road infrastructure and in continuing institutional development. These are the objectives of the *Roads-3* program, the World Bank component of which is called the Roads and Bridges Management and Maintenance Programme (RBMMP). Using the accomplishments and lessons learned from *ROCS-2* as a base, there is every reason to believe that this next program should be very successful.

1. Project Assessment

The condition of the road infrastructure, at the start of *ROCS-2*, presented a major challenge to Mozambique in general and ANE in particular. Following years of civil war and neglect of the road network, a weak, poorly staffed and trained roads maintenance and management administration faced great difficulties in mobilizing resources and methods needed for the rehabilitation of the road network, sorely needed as a precondition to economic growth and national development.

ROCS-2, following almost immediately on the heels of the First Roads and Coastal Shipping Project (*ROCS-1*), established the necessary institutional, manpower, and financial resources, which enabled the GOM to start the rehabilitation of the road network, ensure the implementation of maintenance, and develop the capacity to plan and implement road management strategies.

1.1 Objectives

The primary project objective of the *ROCS-2* project was defined as “to contribute to the restoration of economic growth through: (i) improving road transport and protecting selected past road investments by rehabilitating priority roads and eliminating much of the huge backlog of deferred maintenance and resuming regular maintenance activities; and (ii) further strengthening the capacity of the Road Sector, by continuing the regulatory reform and institution building initiated under *ROCS-1*, to ensure effective planning and monitoring by the government and by the development of private sector contractors and operators, to a large extent through on the job activities.”

The physical (civil works) objectives were to be achieved in parallel with the institutional objectives. It was clearly understood that the improvements in the latter were necessary to ensure the efficient implementation of civil works, but that the most pronounced impact of institutional reforms and strengthening would only become evident toward the end of the *ROCS-2* project. It was also clear that successful achievement of

objectives would depend on the timely delivery of the required financial resources by both government and donors.

It is clear today, simply from the increase in road traffic and reduced travel times throughout most of the road network, that the *ROCS-2* project substantially addressed the objectives of improving road transport and reducing backlog maintenance. Very significant improvements in institutional capacity have also been realized, accompanied by a complete reform in the management of the road sector. The principle of regular maintenance has been institutionalized and accepted at all levels. The main challenges remaining to ensure the sustainable realization of this objective include ensuring the availability of adequate local funding and additional improvements in institutional capacity to manage the process.

1.2 Design

Due to the uncertainty surrounding projected agricultural and industrial developments and hence traffic levels, road conditions and rehabilitation costs, the project was designed with flexibility. This functioned well and facilitated changes to the program to accommodate changed priorities resulting from delays in the completion of the backlog maintenance, changes in priority districts, the need to address natural disasters, (e.g. the floods of 2000 and 2001). A further advantage of the flexible approach was the ability to accommodate new donor support throughout the project (e.g., the Japanese bridge funding which permitted the replacement of some thirty bailey bridges on primary and secondary roads with permanent concrete structures, and then the reuse of the bailey bridges on tertiary roads).

Whilst the flexible approach allowed for changed priorities it also offered a convenient mechanism for accommodating institutional delays and for being able to deal with technical issues such as the suitability of materials. And although total Government contributions to the project exceeded the levels established in the original PAD, delays in funding were also able to be accommodated.

1.3 Implementation

The *ROCS-2* project was conceived as a five-year program with closure in June 2001. The closing date was twice extended, first to June 2002 and then to June 2003, to accommodate the Government's needs to consolidate its financial commitment due to macroeconomic reasons and also in order to accommodate completion of civil works due to changes that arose during the course of the project. These included some changes in orientation as more systematic approaches to project selection and implementation, and also as a consequence of the priorities that had to be given to emergency works in response to the floods of 2000 and 2001.

Under *ROCS-2* substantial improvements were achieved in reopening nearly half of the classified road network. The percentage of roads in good or fair condition increased from 10% at project appraisal to 56% at the close of *ROCS-2*, very close to the target of 60%, while impassable roads decreased from 50% to only 8% of the network. Similarly, at closing about 78% of the paved road network was in good or fair condition compared with a target of 85%.

The management of the road sector was reformed with the creation of the semi-autonomous road agency (ANE), which replaced the government's National Directorate of Roads and Bridges (DNEP) previously responsible for the road network, and the strengthening of the Road Fund for the financing of road maintenance. Simultaneously, substantial progress was made in institutional capacity building, development of local road works execution capacity, and training of technicians and engineers.

The difficulties that the Government faced in making available in a timely fashion the committed and required levels of funding for maintenance did lead to delays in the achievement of periodic maintenance and rehabilitation targets; yet these targets were eventually attained as both Government and donors accommodated the program to financial constraints.

1.3.1 Civil Works

Primary and Secondary Roads: Under *ROCS-2*, planned rehabilitation of priority trunk roads was approximately 3,500 kilometers and actual rehabilitation was 1,437 kilometers consisting of 1,227 kilometers of paved roads and 210 kilometers of unpaved roads. The low percentage of rehabilitation achieved in relation to that planned was largely due to the serious deterioration of the road network, higher costs due to the limited numbers of contractors participating in bids and the desire to stimulate economic growth and alleviate poverty through a more intensive Feeder Road Program. The shortfall was, however, partially offset by execution of a total of 5,993 km of roads and some 3,200 meters of bailey bridges under the emergency maintenance component of the project. All of these works have led to reductions in travel times of up to 50%.

Tertiary Roads: Between 1992 and 2000, 6,630 kilometers of tertiary and unclassified roads, out of a total of 15,868, were rehabilitated under the *ROCS-1* and *ROCS-2* rural programs, which were carried out by ANE's Directorate of Regional Roads (DER). Actual labor-intensive works totaled 6,107 kilometers, almost double the planned amount of 3,250 kilometers. Over half of the rural roads works were located in the northern four provinces of Zambezia, Nampula, Cabo-Delgado, and Niassa where the feeder roads programs were largely focused.

Routine Maintenance: Routine maintenance execution also improved steadily and substantially. In 1994, less than four thousand kilometers of the total classified network were subject to routine maintenance. This number climbed steadily to almost 15,000 kilometers of road in 1998. Over the 8 years of *ROCS-2*, a total of 88,546 kilometers of road received routine maintenance, an average of 11,000 km per year. Measured against the targets established by the Government, the amount of routine maintenance executed from 1994 through 1999 was, on average, nearly 80% of the programmed amount. The average level of coverage (percent of total network given routine maintenance) during this period was 36%, ranging from 26% in Zambezia province to 58% in Manica province.

Periodic Maintenance: By contrast, execution of periodic maintenance fell short of the planned levels. According to the targets established by the 1994 Sector Policy Letter, an average of over 3,000 kilometers of periodic maintenance were to be executed from 1994 to 1999, while an average of only 434 kilometers (18% of the target) were carried out. This shortfall in the physical volume of periodic maintenance was largely due to higher unit costs of maintenance as the scope of required maintenance activities became known and due to a shifting of priorities some planned periodic maintenance was redefined to rehabilitation to take into account the actual condition of roads as more systematic selection and design of civil works was built into the project. These problems of planning and executing maintenance were evaluated and led to a strengthening of highway network management through the development of the Highway Network Management System and subsequently contributed to the improved design of the follow-on project, *Roads-3*.

1.3.2 Capacity Building

Regulatory Reforms: Considerable progress was made with regard to regulatory reforms, which culminated

in the disbanding of DNEP and the establishment of the autonomous ANE. The establishment of ANE did not, however, address all of the planned regulatory reforms, namely the separation of the administrative authority from the Road Fund. This separation was, however, achieved at the same time as the closure of *ROCS-2* i.e. in June 2003.

Institutional Capacity Building: Both DNEP and now ANE have benefited from substantial institutional building initiatives. At the start of *ROCS-2*, the professional staff of DNEP consisted of some 5 engineers (there were 2 engineers at the start of *ROCS-1*). During the course of the project around 100 engineers have graduated, some 41 of which are on the ANE staff. In addition, DNEP and ANE staff have benefited from specialized courses and specially tailored on-the-job training. As expected given the shortage of qualified personnel and personnel throughout the country in both the public and private sector, some of these trained personnel have moved from DNEP/ANE to work in the private sector and related government institutions as well. Thus the impact on national capacity in fact surpasses the substantial benefits that have been realized in DNEP/ANE capacity alone.

Planning Capacity: Under *ROCS-2*, a computerized highway management information system was developed and implemented, which permitted a more systematic and methodical planning of civil works interventions. During the course of *ROCS-2*, the Highway Network Management System (HNMS) has significantly improved the ability of ANE to analyze road network data and to plan maintenance schedules. Further development of local capacity to manage and utilize this planning tool is required to fully realize the potential of the HNMS. In particular, the need to focus on the development engineering skills did not adequately permit the employment or development of information systems, planning, and other specialists who are needed to most effectively apply these specific planning tools. However, these needs were recognized and training priorities in the follow-on project, *Roads-3*, reflect this.

Engineering Capacity: Under *ROCS-2*, considerable advances were made in the adoption and development of appropriate standards for structural design and rehabilitation of road pavements and for road construction materials. DNEP/ANE also developed standards for the maintenance of Mozambican roads. But foremost among the engineering issues addressed under *ROCS-2* was the quality of local materials and their suitability to design requirements—mainly with regard to the “wearing” course in unsurfaced roads and the base on surfaced roads. It was determined that road construction materials meeting standard specifications are simply not available in large areas of Mozambique and that between 30-40% of the road network falls in areas where suitable wearing course materials are not available within an economically viable hauling distance. In the past these materials were either used as they occurred on unsurfaced roads, or stabilized with high cement content in the case of surfaced roads. As a consequence, unsurfaced roads tended to fail within six months and cement stabilization of surfaced roads led to many construction-related problems and substantial maintenance difficulties.

DNEP/ANE undertook an extensive applied research program in order to find an effective use of the extensively occurring substandard base materials. The objective was to improve the engineering properties of these materials so that they could be used as base material and at the same time permit maintenance of the road network with labor-intensive methods. Extensive laboratory testing was followed by trial sections which were monitored. The results enabled ANE to prepare and implement its own specifications for low-volume sealed roads using these substandard materials. The results have been presented internationally, and will be applied during *Roads 3* permitting more efficient and effective rehabilitation and maintenance of the road network.

Development of Local Contractors: Similarly, considerable effort was put into the development of the local construction industry, especially following the identification of this particular constraint. Approximately 50

mainly small and medium contracting enterprises were trained under this initiative. Although the initiative was quite successful, the difficulties faced by nescient small contractors were identified, including that contractors were not given sufficient time or work to facilitate their development to “independence”. Again, this lesson has been incorporated into *Roads-3*. One exception to this was CETA which is now functioning successfully as a local contractor, following its privatization.

Studies and Technical Assistance: Under *ROCS-2* numerous studies were undertaken, the results of which contributed to increased institutional capacity. Notable were the Integrated Road Sector Strategy for Mozambique, the Financial Management Systems Development and Implementation Study, and the Environment Impact Assessment for the Roads and Bridges Management and Maintenance Program, all three of which served as foundations for the development of the follow-on project, Roads and Bridges Management and Maintenance Programme (RBMMP). In addition, the HNMS, noted above, was developed and implemented; two roughness and road condition surveys were implemented, and several social-economic studies were undertaken. Considerable technical assistance was also funded under *ROCS-2*, including specialists in pavements, materials, highways, bridges, contracts management and training (all under IDA funding), and several other specialists working in regional roads funded by other donors.

2. Assessment of Borrower’s Performance

Overall, the performance of the Borrower should be rated as very good, especially considering that one hundred percent of the credit was utilized as planned and amended during the course of the project. As noted above, many of the targets were explicitly achieved or even surpassed. And the ability of the implementing agency, DNEP/ANE, to respond to shortcomings and problems in collaboration with the major donors, including the World Bank, should be seen as an accomplishment in its own right. The major areas of shortcomings deserve special attention in order to continue improvements in performance in the future.

2.1 ANE’s Technical Performance

Institutional Transition Effects: The necessary time to transform the DNEP into ANE probably should have been recognized from the start. The changes in institutional structure, the preparation of internal regulations, the appointment of staff and, last but not least, the delay in establishing market related salaries certainly limited the positive impacts to some degree. Regardless, the performance of ANE as a roads management institution today is vastly improved over the role of DNEP at the initiation of *ROCS-2*. The lesson learned would seem to be that such transition effects need to be considered and catered for in project design.

Management Capacity Constraints: As a result of the rapid recovery of the Mozambican economy, the emphasis placed on the road sector and a general shortage of suitably experienced personnel, some personnel assigned to this sector have been required to perform in positions for which they have not been adequately trained. Although the development of ANE’s management skills and capabilities was a critical goal of both *ROCS-1* and *ROCS-2*, the competing pressures of developing a cadre of engineers and actual implementation of the program during its early days made it difficult to dedicate the resources necessary (especially the scarce time of DNEP/ANE’s senior management) to ensure the rapid achievement of this goal. This is a matter of comparing the objectively “good” performance against potential. Management constraints had their most significant impacts in delays in implementing the project, procurement, and in some of the various errors built into a number of the earlier projects. The project recognized the needs and by end of *ROCS-2*, increased management training was incorporated into the institutional strengthening component, and is also a targeted objective in *Roads-3*.

Attrition of Trained Staff: As noted above, despite the substantial improvements in DNEP/ANE staff capacity, one further constraint on the implementing agency's ability to function more efficiently was the transfer and loss of staff which benefited from both formal and on-the-job training, out of the organization. While ANE has served the useful function of providing "trained" personnel for the general government structure and the private sector, this problem is likely to continue for the foreseeable future until such time as Mozambique has sufficient suitably qualified personnel or ANE can offer compensation packages that rival the private sector options available to the most capable personnel. This "fact of life" must be taken into account in future designs.

Appropriate Skills Mix and Personnel Management: Related to the points raised above, despite a much improved staff, at project close, ANE still lacks sufficient qualified and motivated personnel to undertake many of the required functions, particularly in the areas of contract management, planning, and finance. This suggests the importance of developing a human resource program appropriate to a roads management organization. In the future, staffing plans and development activities will need to be more responsive to the roads management requirements and the responsibilities of ANE and the Road Fund (as opposed to pure engineering activities). The institutional reforms that created ANE have given the agency the necessary autonomy and flexibility to implement personnel policies that can establish a climate of responsibility, accountability and delivery for all levels of personnel, with commensurate rewards. Recognizing this, *Roads-3* has been designed to improve these shortcomings.

Technical Assistance: During the implementation of *ROCS-2*, the lack of required skills among DNEP/ANE staff necessitated the use of technical assistants for specific line functions. In general, the technical assistance component of *ROCS-2* performed well in filling gaps in staff competencies, especially in the areas of procurement and contract management. This led to the situation where, although local staff lack the specific skills required to undertake their jobs, technical assistants did not have the time to properly focus on technological transfer component of technical assistance because of the pressures to deliver immediate results. Now that ANE has substantially improved local staff capacity, the technical assistance component of *Roads-3* will be able to focus more effectively on developing local capabilities through more technology transfer and mentoring roles.

2.2 ANE's Financial and Administrative Performance

The DCA required ANE to maintain records and accounts in a manner which would permit reporting on resources and expenditures in accordance with sound accounting practices. In addition the DCA required that the records and accounts for each fiscal year be audited, in accordance with appropriate auditing principles, by independent auditors, acceptable to IDA. ANE complied with these requirements.

The DCA also included an implementation program, which planned for the strengthening of ANE's financial information and technology systems, financial management and accounting procedures.

In support of the implementation of the program, ANE, in 1999, implemented a new Financial Management System (FMS) which included an advanced computer accounting system, by SunSystems, which was finally installed in 2002. The system is configured to facilitate Project Management Reports (PMR) as required by IDA..

The development and installation of the FMS was a major accomplishment of *ROCS-2*. It puts ANE in the position of being able to better manage performance through finance-based reporting as opposed to pure technical (engineering) reporting. ANE's experience with the FMS has pointed out two areas which do

require additional strengthening. First, senior management must become accustomed to requesting and using the output of the FMS. Secondly, the administrative unit responsible for operating the FMS continues to suffer from a lack of qualified personnel, notably at the level of senior accountants. Such skills are in short supply nationally, and the competition for these services is intense. As a result, ANE does not have sufficient capacity to carry out in a timely manner some basic accounting and finance functions such as account reconciliations, project tracking, and budgeting, all of which are included in the FMS. These constraints are similar to the challenges that arose on the technical side (implementation and effective use of the HNMS for example) and are being given high priority in *Roads-3*.

In general, however, ANE's financial and administrative performance must be considered very satisfactory, most especially when compared to capabilities and performance at the start of *ROCS-2*. For example, ANE is now capable of independently producing timely preparation of Replenishment Requests and other Withdrawal Applications, preparation of accounts for Audit and submission of Audit Reports to IDA. ANE has also prepared an operating procedure for the assignment and handling of Government of Mozambique counterpart funds.

2.3 GOM Performance

The Government of Mozambique, through the Letter of Sector Policy, committed itself to finance about US\$169 million of *ROCS-2* expenditures. This included 100 % of the routine maintenance and an increasing share of the periodic maintenance over the life of the project estimated at US\$114 million. An additional US\$10.5 annually was committed to cover the emergency and rehabilitation part of *ROCS-2*. That the Government met its overall commitment can be seen by the fact that total Government contributions to *ROCS-2* totaled US\$176.8 million, i.e., almost US\$ 8 million in excess of the planned amount.

The counterpart funds for maintenance were generated via a fuel levy and general user charges and accessed via the Road Fund. These funds pass through the Ministry of Finance, and for reasons of macroeconomic constraints, the Government was not always able to fulfill its obligations in a timely transfer of funds to the Road Fund. The effect of the above delays did have an impact on the implementation of maintenance activities, a result that has been recognized and has been addressed in the planning for *Roads-3*, in which the Government has committed itself to specific timely transfer of resources to the Road Fund.

The Road Fund and ANE were separated in mid 2003. It is hoped that the measures taken to secure timely and necessary funding for the future Road Programme will avoid the problems. These include, but are not limited to, the strengthening of ANE and Road Fund's project management capacity and the allocation of the Government of Mozambique's counterpart funds in dedicated accounts prior to the effectiveness of next Road Programme.

One additional area that has had an impact on project performance concerns the introduction of Value Added Tax. In consequence of the introduction of the VAT system in June 1999, the Government introduced a promissory note system for the payment of VAT charged to ANE by Contractors. In principle, the promissory note system as designed should have functioned adequately. However, in practice it has caused difficulties that have resulted in inordinate payment delays and consequent claims for interest on late payments. The Government is currently modifying the system in an effort to remedy the problems so as to avoid transferring the impact of delayed payments onto the pricing of future projects.

3. Financiers' Performance

The *ROCS-2* Project was financed by both donor and lender agencies, including IDA which assumed an overall coordinating role of the various agencies, for the macroeconomic aspects of the project and that of supervising their own element of the project. In general the coordination and performance of the various funding agencies was very satisfactory.

ANE has established and leads a donor coordination program which includes as a regime of quarterly meetings between ANE and the financiers. These meetings follow agendas that are determined by ANE but which also include matters suggested by the donors as a group or individually. These are occasions for ANE to convey to donors its strategies, plans, and performance reports. Meetings have also focused on specific issues such as emergency works. At these meetings donors are able to raise issues that they would like to see addressed. ANE intends to continue and expand this coordination by also implementing regular less formal forums where donors can discuss technical matters with ANE professionals. It is expected that this will address some of the problems of coordination experienced during the implementation of *ROCS-2*.

3.1 Performance of the World Bank

The role of the World Bank in the implementation of the project included supervision, oversight, issuance of prior approvals (“no objections”) and formal reviews. The Borrower notes that the Bank and the teams assigned to work with the Borrower performed well. The team worked in concert with DNEP and later ANE staff to design *ROCS-2* and later to refine the project as challenges and opportunities presented themselves. A true sense of partnership developed between the staff of DNEP/ANE and World Bank team.

Three areas merit specific attention:

Supervisory Visits: These are the most essential forms of interaction between IDA personnel and the Borrower’s staff. These missions were well planned and quite effective, as can be seen from the record of the Aide Memoires. The Borrower uses the Aide Memoires to formulate specific action plans from the actions and measures which are contained in the Aide Memoire for each mission. From the Borrower’s side, staff were always made available as a priority to facilitate the missions’ objectives. During *ROCS-2*, and especially due to the capacity constraints facing DNEP/ANE, supervisory missions were fairly frequent. These enabled the Borrower and World Bank team to work together to make adjustments to the program as required.

Local Supervision: Most donors have local offices that deal with the implementation of their projects and programs on a continuous basis. This has the advantage of permitting rapid and hands-on interaction between the Borrower and the Funding Agencies, especially in the preparation of procurement approval requests. For a short time, the World Bank had a local staff member assigned to assist ANE in the implementation of the project, but otherwise, the local office of the World Bank has had limited involvement in project implementation and planning. Given the size of the Bank’s participation in the project (and in the subsequent RBMMP) it would be helpful to have a full-time local contact which would facilitate the Borrower’s communication, adherence to procedures and submissions to IDA.

3.2 Performance of Other Donors

As it has been noted above, several funding agencies (donors and lenders) funded the Project. The Total Project Cost was at about US\$ 815 million, of this approximately US\$ 772 million was made available to the Government of Mozambique, by these agencies, for the execution of *ROCS-2*.

The major financial contributors to the project are detailed below (in million US\$):

Financier	Planned	Actual		Financier	Planned	Actual
ADB	83.4	76.3		GOM	169.0	176.8
AFD		2.3		IDA	188.0	182.3
ASDI		36.2		IDB		3.7
BADEA	14.9	14.1		KfW	9.0	37.1
CFD/RSA	17.0	0.2		KFAED	14.0	18.3
DFID		6.8		Phase II Donors	181.8	39.8
EEC	97.9	59.4		USAID	25.0	92.0
FRP Donors	14.6	26.6		Total	814.6	772.1

In general the performance of the other funding agencies was quite satisfactory. The presence in many cases of local representatives, in general, greatly facilitated the implementation of these projects.

In contrast to IDA, a number of the other funding agencies utilize Banco de Mozambique to validate direct disbursements to contractors. This introduces an additional level of bureaucracy which almost always leads to additional delays and difficulties in obtaining information. In the future, ANE will encourage funding agencies to either use the special bank account system, as used by IDA, or to make direct payments to the Road Fund, in an attempt to reduce the problems and delays experienced.

4. Lessons Learned

The main lessons learned from *ROCS-2* would seem to be constructive ones. Commitment to the goals of institutional strengthening and regulatory reform yielded generally very good results. The civil works targets were largely attained as a result of program flexibility. But where problems have been identified, it is clear that either more could have been accomplished, or at least accomplished sooner..

4.1 Project Design

The flexibility built into *ROCS-2* was clearly an advantage, but one not likely to be easily replicated. At the same time, the use of performance indicators in *ROCS-2* which served as milestones and which assisted in the revision and refinement of the program are also an integral part of the follow-on project, *Roads-3*.

The design of the project also included asymmetries in goals and objectives. In particular, the range of outcomes over which the implementing agency, DNEP and later ANE, could reasonably be expected to have command was somewhat limited. The regulatory reforms and sector financing were clearly beyond the control of the ANE professionals and decision makers who were the main interlocutors with the World Bank. It would be best to clearly distinguish which outcomes are directly under the control of the implementing agency so as to have a clearer idea of controllable measures of project success.

4.2 ANE Performance

The Borrower believes that its overall performance has been good, as indicated in the sections above. Still, it is recognized that the implementing agency, ANE, will be required to do more in the future, and to perform at a higher level of efficiency. The lessons learned during the implementation of *ROCS-2* will be instrumental in this regard.

The main lesson learned from *ROCS-2* would seem to be that strengthening institutional capacity through the addition of trained engineering staff, organizational reforms, and development of tools such as HNMS, are necessary but not necessarily sufficient conditions to effective roads management. The follow-on project, *Roads-3*, will focus more on the management and planning side of capacity strengthening. In particular, attention is being paid to the skill mix, making sure that, for instance, engineers are used to achieve their full potential as engineers. This requires the recruitment and training of specialists in statistics, transport economics, and administrative support.

The second generation of institutional reforms that have just been realized also put into practice lessons learned from *ROCS-2*. ANE and the Road Fund have been split into two separate administratively and financially autonomous bodies, operating under the management of separate Boards of Directors. Each will be better able to take advantage of their autonomy, authorities, and responsibilities in order to become more efficient commercial and results-oriented institutions. Performance-based systems of management and personnel remuneration are planned to be adopted by each, and this should go a long way to improving sector management efficiency.

Better use of technical assistance is another important lesson coming out of *ROCS-2*. Previously, the pressure to get projects implemented combined with the capacity constraints in DNEP/ANE necessitated that technical assistants be used to fill in the skills gaps directly. But management recognizes that the cost of this was somewhat slower development of local staff. In the future, technical assistance will be used more for mentoring and technology transfer to ANE's professional staff, as a concerted effort will be made to use technical assistance in a more balanced fashion.

On the civil works side, ANE's management recognizes that improved planning is required to ensure the necessary balance among routine maintenance, periodic maintenance and rehabilitation interventions. At the same time, it is recognized that since this also crucially depends on assured and timely sources of funding, ANE and the Road Fund will strive to coordinate their funding and implementation planning.

4.3 GOM Performance

One of the key lessons learned from *ROCS-2* is the importance of payments discipline. The Borrower is committed to working with other Government organs to ensure the Government's timely adherence to their funding commitments and improvements in VAT payment procedures. It is recognized that failure to do so will almost certainly lead to delays, some shortfalls in achieving targets (which are more time-based in *Roads-3*), and even higher unit costs.

Several measures are being proposed to deal with these issues. Attempts are being made to have fuel levies and user charges paid directly to the Road Fund rather than via the Ministry of Planning and Finance, which would greatly alleviate the current funding problems. Also, the next project requires a financial contribution from the Government's capital budget for certain works. This distinction should make it easier for the Government to identify its specific targets and to comply with their commitment in this regard.

4.4 Funding Agency Performances

Access to the agencies via locally based representatives greatly facilitated the implementation of projects where these representatives were given sufficient authority, which, in general, was the case. Certain of the finding agencies have made changes to their local structures and this is seen as a positive step for the implementation of the next project.

(b) Cofinanciers:

Co-financiers were consulted during the ICR mission and their views taken into account in drafting the ICR. The draft final ICR was sent by fax to four of the major donor representatives in Maputo, Mozambique, on December 2 requesting their comments by December 15. However, no comments were received from the cofinanciers by December 29, 2003.

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

10. Additional Information

None.

Annex 1. Key Performance Indicators/Log Frame Matrix

Outcome / Impact Indicators:

Indicator/Matrix	Projected in last PSR ¹	Actual/Latest Estimate
Amendment of Road Fund regulations.	100%	100% completed
Creation of the Road Board.	100%	100% completed
Creation of DNEP as an independant Road Authority.	100%	
Housing policy agreed by MOPH and in place,	100%	100% completed
Proposal for a sustainable and self-funded Chimoio Training center.	100%	100% completed
Legalization of ECMEPs as commercial contractors.	100%	100% completed
85 % of the paved network and 60% of upaved roads in good and fair condition.	85% 60%	78% 56%
Cumulative training of 2,500 persons.	100%	100%
Completion of the design standards study.	100%	50%
Implementation of the Highway Network Management System.	100%	100%
Bridge inspection system in place.	100%	100%

Output Indicators:

Indicator/Matrix	Projected in last PSR ¹	Actual/Latest Estimate
Completion of the rehabilitation of the Quelimane-Namacurra road.	180 km	69 km
Completion of 70% of the 2,400 km Rural Road Program.	1600 km	6,106.6 km of rural roads completed
Completion of a 530 km periodic maintenance program.	530 km	434 km periodic maintenance completed
13,000 km of roads under routine maintenance (10,500km by local contractors including ECMEPs).	13,000 km	13,000 km of roads under routine maintaince
Construction of 24 houses	24 houses	24 houses completed
Creation of 40 small local contractors.	40 local contractors	40+ contractors +Association created

¹ End of project

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
Road Network Rehabilitation and Maintenance	654.40	699.66	106.3
Engineering Services	45.70	38.40	84
Institutional Development	12.50	38.20	305.6
Total Baseline Cost	712.60	776.26	
Physical Contingencies	54.40		
Price Contingencies	47.60		
Total Project Costs	814.60	776.26	
Total Financing Required	814.60	776.26	

Actual IDA disbursements as of June 23, 2003, difference is due to rounding.

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

Expenditure Category	Procurement Method ¹			N.B.F.	Total Cost
	ICB	NCB	Other ²		
1. Works	196.10 (140.50)	26.70 (12.50)	10.00 (5.86)	513.80 (0.00)	746.60 (158.86)
2. Goods	4.00 (4.00)	0.00 (0.00)	1.60 (1.60)	5.90 (0.00)	11.50 (5.60)
3. Services	0.00 (0.00)	0.00 (0.00)	22.30 (22.30)	32.90 (0.00)	55.20 (22.30)
4. Refund of PPF	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	1.50 (1.50)	1.50 (1.50)
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	200.10 (144.50)	26.70 (12.50)	33.90 (29.76)	554.10 (1.50)	814.80 (188.26)

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

Expenditure Category	Procurement Method ¹			N.B.F.	Total Cost
	ICB	NCB	Other ²		
1. Works	411.62 (84.26)	211.79 (54.43)	76.25 (10.34)	0.00 (0.00)	699.66 (149.03)
2. Goods	33.37 (4.65)	6.56 (0.00)	6.43 (2.34)	0.00 (0.00)	46.36 (6.99)
3. Services	0.00 (0.00)	0.00 (0.00)	29.96 (29.96)	0.00 (0.00)	29.96 (29.96)
4. Refund of PPF	0.00	0.00	0.18	0.00	0.18

	(0.00)	(0.00)	(0.18)	(0.00)	(0.18)
5. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.10 (0.10)	0.00 (0.00)	0.10 (0.10)
6. Miscellaneous	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Total	444.99 (88.91)	218.35 (54.43)	112.92 (42.92)	0.00 (0.00)	776.26 (186.26)

Difference is due to rounding. Data valid as of October 31, 2003.

^{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.
Road Network Rehabilitation and Maintenance	157.33	168.55	424.75	149.03	176.80	373.96	94.7	104.9	88.0
Engineering Services	17.25	0.00	32.90	32.16	0.00	6.24	186.4	0.0	19.0
Institutional Development	13.42	0.45	0.00	5.07	0.00	33.03	37.8	0.0	0.0

Actual IDA amounts are as of June 23, 2003. CoF represent aggregate figures. Total may not add due to rounding.

Annex 3. Economic Costs and Benefits

POST-EVALUATION OF ROCS ROADS

Introduction

The post-construction evaluation of six selected roads from the ROCS2 program and the selected roads, and works performed, were as follows:

Maputo – Namaacha	75 km Part reconstruction, part overlay
Marracuene – Manhica	48 km Widening and overlay
Chonguene – Chibuto	52 km Upgrade to paved surface
Inchope – Gorongosa	73 km Part reconstruction, part periodic maintenance
Gorongosa – Caia	224 km Mostly new construction
Pemba – Montepuez	202 km Reconstruction.

Principal donors financing the construction works included the Kuwait Fund, IDA, African Development Bank, USAID and BADEA. IDA was the principal financier for Marracuene-Manhica, and also funded the design for Chonguene-Chibuto and Pemba-Montepuez. As shown in the list above, works on the different roads ranged from periodic maintenance to new construction.

Methodology

The six projects have been broadly evaluated on the basis of data available within ANE concerning construction costs, periodic maintenance costs, past and present road condition, traffic flows, and vehicle operating costs. For two roads (Marracuene-Manhica and Pembe-Montepuez) previous feasibility studies were available, but for the other roads no such studies could be located.

The economic evaluations followed the same procedure as is used in HDM-4, whereby project-related capital and periodic maintenance costs are compared with economic benefits resulting from vehicle operating cost reductions. It was decided, however, not to include details of routine maintenance costs, which in practice account for comparatively small elements of the typical overall cash flow.

HDM-4 automatically calculates deteriorations in road roughness resulting from traffic levels and forecast maintenance activities. Since HDM-4 was not used in this study, it was necessary to make assumptions about rates of road deterioration in terms of International Roughness Indicator (IRI) values between successive years. These assumptions, made in accordance with experience in other countries, are detailed in the annexes for individual roads.

The evaluations have been performed using economic values at 2003 prices for all costs and benefits. For the four roads receiving periodic maintenance or undergoing reconstruction, they have included fifteen years of benefits, while for the two roads involved in upgrading or major new construction the benefit period has been extended to twenty years. These benefit periods are in accordance with standard practice.

While these evaluations are post-evaluations in the sense that they take place after completion of construction, they are still made at a time when benefits will continue to be enjoyed for many years to come. Although based on the latest available information, they thus remain as being no more than best assessments of the economic viability levels likely to be achieved in practice.

Detailed methodological assumptions and results for individual roads are set out in Annexes 1 to 6 (project file)

Data Sources

Capital Costs

Capital costs were based on actual expenditure figures supplied by ANE. These figures were generally split into design, construction and supervision components, and were stated to exclude value added tax (VAT). On the basis of economic pricing assumptions set out in previous consultancy reports (including those on project roads by Roughton International and Louis Berger), the values were further reduced by 10 per cent to reflect shadow pricing of labour and other input factors.

Capital costs were all quoted by ANE in US dollars. Values were converted to 2003 prices by assuming dollar inflation at 3 per cent per annum.

Periodic Maintenance Costs

Standard costs of periodic maintenance on a paved road (typically for a reseal every seven years) were given by ANE as US\$ 61,500 per kilometre. This figure was at 2003 prices. On the basis of available earlier consultancy reports, it was assumed that this figure should be multiplied by a factor of 0.75 to give an economic value. The economic cost of periodic maintenance was therefore taken to be US\$ 46,125 per km.

Road Condition Data

Data on road surface and condition were available from the Sweroad road condition survey of 1995. This survey predated all the six projects except for the Maputo-Namaacha road, where works started at the end of 1993. It classified all road sections on the main and secondary network as being 'paved, gravel or earth', and as having surface condition which was 'good, fair, poor, bad or impassable'. For practical purposes it was assumed that for paved roads these surface conditions could be equated to the following IRI values for road roughness:

Good	2.0
Fair	4.0
Poor	7.0
Bad	12.0.

Verbal descriptions were also obtained from senior ANE engineers on pre-project conditions of the various roads. Finally, data on road roughness (in IRI) were obtained from the mid-2003 Roughton International inventory of the road network. The detailed current data by 100-metre section for the Marracuene-Manhica and Chonguene-Chibuto roads is in project file.

Traffic Data

Traffic data are gathered by counts, on an annual or less frequent basis, at a number of designated count stations around the country. These data are then used to prepare annual estimates of average daily traffic (ADT) on individual sections of all roads on the classified network. Estimates for road sections where no count has been conducted are generally made on the basis of interpolation between traffic levels recorded at adjacent count stations.

Print-outs giving traffic flows for all six roads under study (and also, where thought relevant, for possible parallel routes) were obtained for the years 1995 to 2003 inclusive. Some data for 2003 were not yet available.

Since traffic counts are not made in all years at all of the count stations, some results in count station sections are themselves estimates, often made by applying a growth rate to the figures of a previous counting year. It is therefore not always possible to know whether the flow given for a particular year and section is actual or estimated, and the figures are therefore sometimes confusing, especially as they often show large variations from year to year. Some care is therefore required in interpreting the ANE traffic data.

On roads where consultants' feasibility reports were available, it was possible to cross-check data from these reports with those from the ANE information system. This proved useful for the Marracuene-Manhica and Pemba-Montepuez roads.

It was thus possible to make reasonable estimates of traffic flows and growth rates over the past few years on the various project roads. In preparing traffic estimates for use in the computation of benefits, four vehicle types were defined, namely light vehicles (cars, pick-ups and minibuses), buses, medium trucks (2/3 axles), and large trucks (4 or more axles). Agricultural tractors, also specified in the ANE traffic counts, were excluded from these estimates, as tractors are unlikely to generate significant vehicle operating cost savings.

Vehicle Operating Costs

Standardized vehicle operating costs (VOCs) are maintained by ANE, and a print-out of the latest version was obtained. Results are shown in meticaís per vehicle-km for the four vehicle types specified in the previous section. The costs provided were stated to relate to the year 1997.

In order to convert the meticaís costs to US dollars at 2003 prices, they were firstly converted to 1997 dollars at the appropriate exchange rate for that year of M 11,404 to the dollar, and then multiplied to reflect six years of dollar inflation by the factor,

$$(1.03)^6 = 1.19405.$$

The VOCs are specified for a wide range of road roughness values, and results were extracted for the four vehicle types and for IRI values between 2.0 and 12.0 (corresponding to the range between 'good' and 'bad' surfaces). They include passenger and cargo time costs, which amount to approximately 10 per cent of the total for light vehicles and buses, but to less than 1 per cent for the goods vehicles.

Summary of Results

Details of the evaluations and results for individual roads are set out in Annexes 1 to 6 (Project file). Table 1 presents a summary of results for all six roads, giving brief project details including capital costs, plus a set of feasibility indicators including Net Present Value (NPV), Benefit-Cost Ratio (BCR) and Economic Rate of Return (ERR). All costs and benefits are expressed in 2003 US dollar prices, and all discounted values are discounted at a test rate of 12 per cent per annum to the first year of construction.

It may be seen that five of the six roads show ERR values exceeding 12 per cent, with a range from 12.8 to 57.6 per cent. The exception is the Gorongosa-Caia road, where the indicated rate of return is 10.6 per cent, a short way below the 12 per cent benchmark. Since much of this road did not exist when construction started in 2000, and since a copy of the earlier feasibility study document was not available, assumptions made may well have been conservative. This road will in practice constitute a vital link in the country's main north-south highway, and may yield substantial development benefits in the longer term, especially once the Zambezi river has been bridged at Caia, as is currently planned.

Table 1. Summary of Economic Feasibility Results for Selected ROCS Roads

	Maputo/ <u>Namaacha</u>	Marracuene/ <u>Manhica</u>	Chonguene/ <u>Chibuto</u>
Length (km)	75	48	52
Works performed	Reconstruct/ Overlay	Widening and overlay	Upgrading
Construction period	1994-97	1995-96	1998-99
Benefit period	1998-2012	1997-2011	2000-19
Economic capital cost (a) (US\$ mn)	26.216	6.209	5.512
Econ. cap. cost per km (US\$ '000)	350	129	106
Discounted capital cost (b) (US\$ mn)	- 29.008	- 7.237	- 6.050
Discounted periodic maint. costs (b) (US\$ mn)	- 1.633	- 1.159	- 1.407
Discounted benefits (b) (US\$ mn)	48.539	48.107	11.481
Net Present Value (b) (US\$ mn)	17.898	39.711	4.024
Benefit-Cost Ratio	1.62	6.49	1.67
Economic Rate of Return (% p. a.)	18.8	57.6	20.1
	Inchope/ <u>Gorongosa</u>	Gorongosa/ <u>Caia</u>	Pemba/ <u>Montepuez</u>
Length (km)	73	224	202
Works performed	Reconstruct/ Periodic maint.	New road	Reconstruct
Construction period	2001-03	2000-03	2000-02
Benefit period	2004-18	2004-23	2003-17
Economic capital cost (a) (US\$ mn)	9.572	54.000 (c)	33.941
Econ. cap. cost per km (US\$ '000)	130	241	168
Discounted capital cost (b) (US\$ mn)	- 8.838	- 48.234	- 32.775
Discounted periodic maint. costs (b) (US\$ mn)	- 1.773	- 4.832	- 4.890
Discounted benefits (b) (US\$ mn)	11.145	46.934	54.090
Net Present Value (b) (US\$ mn)	0.534	- 6.132	16.425
Benefit-Cost Ratio	1.06	0.87	1.50
Economic Rate of Return (% p. a.)	12.8	10.6	18.5

- Notes: (a) Taken as 90 % of construction costs net of VAT
(b) Revalued at 2003 prices, and discounted to first construction year at 12 % p.a.
(c) Estimated cost including provision for outstanding claims.

Sensitivity Analysis

Sensitivity analysis has been undertaken to assess the effect on feasibility indicators if benefits are for any reason reduced. The implications of a 20 per cent benefit reduction have been examined for all roads.

For most roads capital costs are already known, and no assessment is therefore made of the effect of a change in costs. The exception is for the Gorongosa-Caia road, where a large claim from the contractor is still outstanding. For this road additional cases are examined in which financial costs to be paid in 2003 are either increased or reduced by US\$ 5.0 million. (These cases thus assume total financial capital costs excluding VAT of US\$ 65.0 million and US\$ 55.0 million respectively). Following the convention of the main analysis that economic costs are equivalent to 90 per cent of financial costs excluding VAT, it is assumed that the two cases correspond to an increase or decrease in economic capital costs of US\$ 4.5 million. Results are presented in Table 2.

Table 2. Results of Sensitivity Analysis

(NPVs in US\$ million at 2003 prices discounted at 12 % p.a. to first year of construction)

	<u>NPV</u> (US\$ mn)	<u>BCR</u>	<u>ERR</u> (% p.a.)
1. <u>Base Results</u>			
Maputo-Namaacha	17.898	1.617	18.8
Marracuene-Manhica	39.711	6.487	57.6
Chonguene-Chibuto	4.024	1.665	20.1
Inchope-Gorongosa	0.534	1.060	12.8
Gorongosa-Caia	(6.132)	0.873	10.6
Pemba-Montepuez	16.425	1.501	18.5
2. <u>Reduce Benefits by 20 %</u>			
Maputo-Namaacha	8.190	1.282	15.2
Marracuene-Manhica	30.090	5.158	48.7
Chonguene-Chibuto	1.728	1.286	15.4
Inchope-Gorongosa	(1.695)	0.808	9.5
Gorongosa-Caia	(15.519)	0.678	8.2
Pemba-Montepuez	5.607	1.171	14.1
3. <u>Additional Results (Gorongosa-Caia)</u>			
<i>(a) Financial cost reduced by US\$ 5.0 mn</i>			
Benefits as forecast	(2.929)	0.935	11.2
Benefits reduced by 20 %	(12.316)	0.726	8.8
<i>(b) Financial cost increased by US\$ 5.0 mn</i>			
Benefits as forecast	(9.335)	0.819	9.8
<u>Benefits reduced by 20 %</u>	<u>(18.722)</u>	<u>0.636</u>	<u>7.6</u>

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					
	04/1990	1	Transport planner (1);		
	06/1990	3	Transport planner (1); highway engineer (1); port engineer (1);		
	12/1990	2	Highway engineer (1); training specialist(1)		
	05/1991	2	Highway engineer (1); training specialist (1)		
Appraisal/Negotiation					
	07/23/1993	6	Financial analyst/mission leader (1); operation officer (1); highway engineer (1); civil engineer (1); procurement specialist (1); environmental specialist (1)		
Supervision					
	06/10/1994	5	Financial analyst/mission leader (1); operation officer (1); environmental specialist (1); economist (1); training specialist (1)		
	04/28/1995	5	Engineer (1); highway engineer (1); training specialist (1); administration (1); finance/economics specialist (1)	S	S
	03/11/1996	3	Engineer (2); finance/economics specialist (1)	S	S
	04/07/1997	3	Co-team leader (1); team leader (1); project assistant (1)	S	S
	07/12/1997	3	Co-team leader (2); project assistant (1)	S	S
	10/03/1997	2	Team leader (1); project assistant (1)	S	S
	04/03/1998	3	Team leader (1); engineer (1); project assistant (1)	S	S
	07/17/1998	3	Team leader (1); engineer (1); project assistant (1)	S	S
	10/15/1998	3	Team leader (1); project assistant (1); engineer (1)	S	S
	02/05/1999	5	Team leader (1); engineer (1); project assistant (1); senior operations officer (1); senior highway engineer (1)	S	S
	07/26/1999	6	Team leader (1); senior operations officer (2); engineer	S	S

		(1); consultant (1); principal transport economist (1)		
	12/18/1999	7 Team leader (1); engineer (1); consultant (4); lead specialist (1)	S	S
	04/07/2000	3 Team leader (1); engineer (1); consultant (1)	S	S
	10/07/2000	2 Engineer (1); financial specialist (1)	S	S
	03/06/2001	2 Operations officer (1); senior highway engineer (1)	S	S
	07/25/2001	2 Team leader (1); highway engineer (1);	S	S
	12/08/2001	2 Task team leader (1); financial management specialist (1);	S	S
	02/22/2002	2 Team leader (1); financial management specialist (1)	S	S
	07/19/2002	3 Senior highway engineer (TTL) (1); Financial management specialist (consultant) (1); liaison officer (1);	S	S
	04/14/2003	2 Team leader (1); Financial management specialist (consultant) (1)	S	S
ICR	08/05/2003	2 Operations officer (1); economist (1)	S	S

(b) Staff:

Stage of Project Cycle	Actual/Latest Estimate	
	No. Staff weeks	US\$ ('000)
Identification/Preparation	31.4	96.1
Appraisal/Negotiation	37.2	118.5
Supervision	208.22	1,104.53
ICR	5.0	10.00
Total	281.82	1,329.13

As of August 25, 2003

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

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

	<u>Rating</u>				
<input checked="" type="checkbox"/> <i>Macro policies</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Sector Policies</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Physical</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Financial</i>	<input type="radio"/> H	<input type="radio"/> SU	<input checked="" type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Institutional Development</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Environmental</i>	<input type="radio"/> H	<input type="radio"/> SU	<input checked="" type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
 <i>Social</i>					
<input checked="" type="checkbox"/> <i>Poverty Reduction</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Gender</i>	<input type="radio"/> H	<input type="radio"/> SU	<input checked="" type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Other (Please specify)</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<i>AIDS Awareness</i>					
<input checked="" type="checkbox"/> <i>Private sector development</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Public sector management</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input type="checkbox"/> <i>Other (Please specify)</i>	<input type="radio"/> H	<input type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA

Annex 6. Ratings of Bank and Borrower Performance

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

6.1 Bank performance

Rating

- | | | | | |
|--------------------------------------|--------------------------|------------------------------------|-------------------------|--------------------------|
| <input type="checkbox"/> Lending | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |
| <input type="checkbox"/> Supervision | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |
| <input type="checkbox"/> Overall | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |

6.2 Borrower performance

Rating

- | | | | | |
|--|--------------------------|------------------------------------|-------------------------|--------------------------|
| <input type="checkbox"/> Preparation | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |
| <input type="checkbox"/> Government implementation performance | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |
| <input type="checkbox"/> Implementation agency performance | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |
| <input type="checkbox"/> Overall | <input type="radio"/> HS | <input checked="" type="radio"/> S | <input type="radio"/> U | <input type="radio"/> HU |

Annex 7. List of Supporting Documents

The World Bank, *Staff Appraisal Report, The Republic of Mozambique, Second Roads and Coastal Shipping Project*, March 15, 1994.

The World Bank, *Mozambique First Road and Coastal Shipping Project, Staff Appraisal Report*, May 6, 1992.

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The World Bank, *First Roads and Coastal Shipping Project, ICR*, June 29, 2000.

CETA S.A.R.L, *Company Overview*, 1992-2002,

QAG, *Summary Assessment Sheet*, August 5, 1999

QAG, *Summary Assessment Sheet*, not dated.

