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Report No: PAD1249

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT PAPER

ON A

PROPOSED THIRD ADDITIONAL FINANCING

IN THE AMOUNT OF SDR 52.3 MILLION
(US$73.6 MILLION EQUIVALENT)

TO THE

REPUBLIC OF MOZAMBIQUE

FOR PHASE II OF THE

ROADS AND BRIDGES MANAGEMENT AND MAINTENANCE PROGRAM

March 10, 2015

Transport and ICT Global Practice
Country Department AFCS2
Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective January 31, 2015)

Currency Unit	=	New Mozambique Metical (MZN)
MZN 25.0	=	US$1
US$1	=	SDR 0.7093

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AF1	First Additional Financing
AF2	Second Additional Financing
AF3	Third Additional Financing
ANE	*Administração Nacional de Estradas* (National Road Administration)
APL	Adaptable Program Lending
CIF	Climate Investment Funds
CRW	Crisis Response Window
DA	Designated Accounts
DBT	Design Build and Transfer
DFID	Department for International Development UK
EIRR	Economic Internal Rate of Return
ESC	Environment and Social Clauses
ESMP	Environmental and Social Management Plan
ESIA	Environmental and Social Impact Assessment
FM	Financial Management
FRT	Flood Response Team
GFDRR	Global Facility for Disaster Reduction and Recovery
GoM	Government of Mozambique
HDM4	Highway Development and Management, Version 4
IDA	International Development Association
IFR	Interim Financial Reports
IRM	Immediate Response Mechanism
ISR	Implementation Status and Results Report
KPI	Key Project Indicator
Km	Kilometer
M	Meter
MZN	New Mozambique Metical
N1	National Road Number 1
NCB	National Competitive Bidding
OP/BP	Operational Policy/Bank Procedure
OPRC	Output and Performance Based Road Contract

PAD	Project Appraisal Document
PARP	*Plano de Acção para a Redução da Pobreza* (Action Plan for the Reduction of Poverty)
PDO	Project Development Objectives
PPCR	Pilot Program on Climate Resilience
PRISE	*Programa Integrado do Sector de Estradas* (Integrated Road Sector Program)
QCBS	Quality and Cost Based Selection
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
RBMMP2	Roads and Bridges Management and Maintenance Program, Phase 2
RE	Resident Engineer
RF	*Fundo de Estradas* (Road Fund)
SCF	Strategic Climate Fund
ToR	Terms of Reference
TSG	Technical Support Group
UGEA	*Unidade Gestora Executora das Aquisições* (Central unit in charge of procurement functions)

Vice President:	Makhtar Diop
Country Director:	Mark R. Lundell
Senior Global Practice Director	Pierre Guislain
Practice Manager:	Supee Teravaninthorn
Task Team Leader:	Kulwinder S. Rao

MOZAMBIQUE
ROADS AND BRIDGES MANAGEMENT AND MAINTAINANCE PROJECT

CONTENTS

DATA SHEET

Mozambique

MZ-Additional Financing for Roads and Bridges Management and Maintenance Program - Phase-2 (AF3) (P150956)

AFRICA

GTIDR

Basic Information – Parent			
Parent Project ID:	P083325	Original EA Category:	B - Partial Assessment
Current Closing Date:	31-Dec-2016		

Basic Information – Additional Financing (AF)			
Project ID:	P150956	Additional Financing Type (from AUS):	Restructuring
Regional Vice President:	Makhtar Diop	Proposed EA Category:	
Country Director:	Mark R. Lundell	Expected Effectiveness Date:	30-Jun-2015
Senior Global Practice Director:	Pierre Guislain	Expected Closing Date:	31-Dec-2017
Practice Manager/Manager:	Supee Teravaninthorn	Report No:	PAD1249
Team Leader(s):	Kulwinder Singh Rao		

Borrower				
Organization Name	Contact	Title	Telephone	Email
Ministry of Economy and Finance	Adriano Ubisse	Director	+258 843 996 380	aubisse@mpd.gov.mz

Project Financing Data–Parent (Mozambique -Roads and Bridges Management and Maintenance Program - Phase II-P083325)

Key Dates

Project	Ln/Cr/TF	Status	Approval Date	Signing Date	Effectiveness Date	Original Closing Date	Revised Closing Date
P083325	IDA-43080	Effective	23-May-2007	09-Jul-2007	05-Oct-2007	30-Jun-2011	31-Dec-2016
P083325	IDA-48920	Effective	07-Apr-2011	28-Jun-2011	27-Sep-2011	31-Dec-2012	31-Dec-2016
P083325	IDA-53460	Effective	13-Dec-2013	24-Feb-2014	23-Jul-2014	31-Dec-2016	31-Dec-2016
P083325	IDA-H9040	Effective	13-Dec-2013	24-Feb-2014	23-Jul-2014	31-Dec-2016	31-Dec-2016
P083325	TF-15898	Effective	24-Feb-2014	24-Feb-2014	24-Feb-2014	31-Dec-2016	31-Dec-2016
P083325	TF-15923	Effective	13-Dec-2013	24-Feb-2014	23-Jul-2014	31-Dec-2016	31-Dec-2016

P083325	TF-17375	Effective	07-Jul-2014	07-Jul-2014	23-Sep-2014	31-Dec-2015	31-Dec-2015

Disbursements

Project	Ln/Cr/TF	Status	Currency	Original	Revised	Cancelled	Disbursed	Undisbursed	% Disbursed
P083325	IDA-43080	Effective	USD	100.00	99.57	0.43	101.64	0.00	102.08
P083325	IDA-48920	Effective	USD	41.00	41.00	0.00	33.82	5.79	82.48
P083325	IDA-53460	Effective	USD	3.15	3.15	0.00	0.00	2.99	
P083325	IDA-H9040	Effective	USD	36.25	36.25	0.00	1.10	32.65	3.03
P083325	TF-15898	Effective	USD	9.25	9.25	0.00	0.00	9.25	
P083325	TF-15923	Effective	USD	6.50	6.50	0.00	0.00	6.50	
P083325	TF-17375	Effective	USD	13.99	13.99	0.00	13.99	0.00	100.00

Project Financing Data –Additional Financing MZ-Additional Financing for Roads and Bridges Management and Maintenance Program - Ph-2 (AF3) (P150956)

[ ] Loan [ ] Grant [ ] IDA Grant
[X] Credit [ ] Guarantee [ ] Other

Total Project Cost: 76.10 Total Bank Financing: 73.60

Financing Gap: 0.00

Financing Source – Additional Financing (AF)	Amount
BORROWER/RECIPIENT	2.50
International Development Association (IDA)	73.60
Total	76.10

Policy Waivers

Does the project depart from the CAS in content or in other significant respects?	No
Explanation	
Does the project require any policy waiver(s)?	No
Explanation	

Team Composition

Bank Staff

Name	Role	Title	Specialization	Unit
Kulwinder Singh Rao	Team Leader	Sr Highway		GTIDR

	(ADM Responsible)	Engineer		
Amos Martinho Malate	Procurement Specialist	Procurement Specialist		GGODR
Elvis Teodoro Bernado Langa	Financial Management Specialist	Financial Management Specialist		GGODR
Atsushi Iimi	Team Member	Senior Economist	Transport Economist	GTIDR
Cheikh A. T. Sagna	Safeguards Specialist	Senior Social Development Specialist		GSURR
Damon C. Luciano	Team Member	Temporary		GTIDR
Eden Gabriel Vieira Dava	Safeguards Specialist	Consultant		GSURR
John Bryant Collier	Safeguards Specialist	Senior Environmental Specialist		GENDR
Luis M. Schwarz	Team Member	Senior Finance Officer	Finance Officer	WFALA
Luz Meza-Bartrina	Counsel	Senior Counsel		LEGAM
Nigel Ross Hughes	Team Member	Senior Climate Change Specialist	Senior Climate Change Specialist	GENDR
Salma Chande	Team Member	Program Assistant		AFCS2

Extended Team

Name	Title	Location
Antonio Pinelo	Geotechnical and Pavement Consultant	
David Rudge	Highway engineer	

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
Mozambique	Provincia de Gaza	Xai-Xai			
Mozambique	Provincia de Gaza	Chongoene		X	

Institutional Data

Parent (Mozambique -Roads and Bridges Management and Maintenance Program - Phase II-P083325)

Practice Area (Lead)

Transport & ICT

Contributing Practice Areas

Cross Cutting Topics

[ ] Climate Change

[ ] Fragile, Conflict & Violence

[ ] Gender

[ ] Jobs

[ ] Public Private Partnership

Sectors / Climate Change

Sector (Maximum 5 and total % must equal 100)

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Transportation	Rural and Inter-Urban Roads and Highways	41		
Transportation	Urban Transport	40		
Public Administration, Law, and Justice	Central government administration	19		
Total		100		

Themes

Theme (Maximum 5 and total % must equal 100)

Major theme	Theme	%
Financial and private sector development	Infrastructure services for private sector development	29
Rural development	Rural services and infrastructure	29
Public sector governance	Administrative and civil service reform	14
Financial and private sector development	Other Private Sector Development	14
Human development	Injuries and non-communicable diseases	14
Total		100

Additional Financing MZ-Additional Financing for Roads and Bridges Management and Maintenance Program - Ph-2 (AF3) (P150956)

Practice Area (Lead)

Transport & ICT

Contributing Practice Areas

Cross Cutting Topics

[ ] Climate Change

[ ] Fragile, Conflict & Violence

[ ] Gender

[ ] Jobs

[ ] Public Private Partnership

Sectors / Climate Change

Sector (Maximum 5 and total % must equal 100)

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Transportation	Rural and Inter-Urban Roads and Highways	100		
Total		100		

Themes

Theme (Maximum 5 and total % must equal 100)

Major theme	Theme	%
Rural development	Rural services and infrastructure	70
Financial and private sector development	Infrastructure services for private sector development	30
Total		100

Consultants (Will be disclosed in the Monthly Operational Summary)

Consultants Required? No consultants are required

I. INTRODUCTION

1. This Project Paper seeks the approval of the Executive Directors to provide an additional credit in an amount of US$73.60 million to Mozambique Roads and Bridges Management and Maintenance Program - Phase 2 (RBMMP2) (P083325) Credit 4308-MZ. This is the third additional financing (AF3) to this project. The original project, approved on May 23, 2007, was a credit of US$100.0 million. The first additional financing (AF1) to RBMMP2 was approved on April 7, 2011 in the amount of US$41.0 million[1]. AF1 was designed to cover the cost increases associated with the original project scope as well as the cost of scaled-up activities. The second additional financing (AF2) in the amount of US$110.15 million[2] was approved on December 13, 2013. AF2 primarily financed the costs associated with unforeseen emergency works and additional activities required to mitigate damages to road infrastructure in the Gaza province following the January 2013 Limpopo floods. AF2 also introduced measures to build longer-term resilience to climate risks at the national level through support for the development of climate-resilient road standards and pilot programs. The proposed AF3 will cover the financing gap for the post-flood recovery road sector investments in Gaza province, persisting at the time of approval of AF2[3]. Further, it is proposed to extend the project's closing date by 12 months, from December 31, 2016 to December 31, 2017, to allow sufficient time (about 30 months) for the completion of all project activities[4]. The cumulative extensions will add 78 months to the original project duration.

2. AF3 will support the implementation of medium- and long-term technical solutions for restoration and rehabilitation of the regionally and nationally important disrupted sections of the roads affected by Limpopo floods in January 2013. In all, 196 kilometers of flood damaged roads and associated cross-drainage structures will be reconstructed and/or rehabilitated to restore all-weather access to markets and essential services in Gaza province. There are no new activities planned other than what are already introduced under AF2.

3. The Government of Mozambique (GoM) will contribute US$2.50 million to the project, which will be disbursed following the World Bank guidelines applicable to the project.

II. BACKGROUND AND RATIONALE FOR ADDITIONAL FINANCING IN THE AMOUNT OF US$73.60 MILLION

4. Mozambique has been experiencing strong economic growth over the last decade, supported by sound macroeconomic management and a number of large-scale foreign direct investments in the extractive and energy industries. Recent coal and gas developments could turn

[1] US$ 25.0 million to cover the cost increases linked to the original project scope and US$ 16.0 million for project scale-up.
[2] AF2 included funding from multiple sources. IDA financing provided US$3.15 million credit and US$36.25 million as a grant. CIF co-financing of US$15.75 million comprised of US$9.25 million as a grant and US$6.50 million as a loan. DFID contributed €11.48 million through Global Facility for Disaster Reduction and Recovery (GFDRR) trust fund. GoM contributed US$40.0 million as counterpart funding.
[3] The available funding from all sources was inadequate to fully cover the project cost. Consequently, AF2 was approved with a financing gap of US$73.6 million.
[4] At this time, only the medium-term road works (estimated cost US$120.0 million) remain to be implemented. These works will be procured by the third quarter of the 2015.

Mozambique into a major player in the global markets. Growth in the service sector has also been strong. Despite the recent contraction in oil prices, the economy is expected to grow steadily.

5. However, rapid growth has not yet translated into poverty reduction in the country. Poverty remains persistently high, particularly in rural areas. The poverty headcount fell by only 4 percentage points from 56 percent in 2004 to 52 percent in 2009. The persistent poverty and geographic inequality indicate a challenge of inclusive growth in Mozambique. Among others, transport connectivity is one clear constraint. Rural road access is estimated at only about 32.7 percent. About 17.3 million people are still left unconnected to the road network. Although Mozambique is endowed with an abundance of land and water resources, many farmers do not have good access to national and global markets. The majority of agricultural production remains subsistence farming. Local businesses are also less connected to the regional or global market, despite the fact that job creation is becoming increasingly important for policymakers.

6. To eradicate poverty and create more jobs, it is essential to provide better road access to people and businesses. In Mozambique, half of total freight shipments and 98 percent of passenger traffic are carried by roads.[5] In the short term, transport costs and travel time can be reduced by improved rural road conditions. In the medium to long term, firm profitability can be increased and more jobs can be created in the agriculture and non-agriculture sectors. Rural road improvements increase agriculture output prices and production. Improved access will help increase household consumption and alleviate poverty.

7. The World Bank has been assisting the Government of Mozambique (GoM) to finance its priority road sector investments alongside other donor funded infrastructure projects. In 2001, a three phase, ten year Adaptable Program Lending (APL, now called Series of Project) was designed to support the government's road sector program. APL design was based on GoM's integrated road sector strategy of August 2000 that focused on improving roads and bridges to remove constraints to economic growth. Since 2006, GoM, working in close collaboration with its Road Sector Development Partners, prepares a multiyear *Programa Integrado do Sector de Estradas* (PRISE) or Integrated Road Sector Program. PRISE is implemented using a sector-wide approach. Each phase of the APL had triggers based on the implemented and measured progress at implementing policy and institutional reform and civil works in the previous phase.

8. Phase I of the Program (RBMMP1), in the amount of SDR 127.4 million (approximately US$186.4 million), was designed as a four-year program starting on July 1, 2001. RBMMP1 closed in June 2007. It financed the rehabilitation and upgrading of 670 kilometers of the N1 in Maputo, Gaza, Inhambane, and Sofala Provinces.

9. The second phase of the Program (RBMMP2), was approved on May 23, 2007 in the amount of US$100 million, and declared effective on October 5, 2007. The main objective of the investments was to reduce constraints on trade and growth, increase access to rural populations, and reduce transport costs. The focus of RBMMP2 civil works were three sections of N1, the primary arterial highway running from North to South of the country, in Maputo, Gaza, and Inhambane provinces. Improvement of these three sections of N1 was originally planned under

[5] INE Statistical Yearbook 2013. Also see World Bank. (2013). "Impact Evaluation for Infrastructure: General Guidance and Existing Evidence" for more detailed discussion and supporting information.

RBMMP1 but was later relegated to RBMMP2 due to insufficient funding. These sections form an integral part of the key transport backbone of Mozambique.

10. RBMMP2 supported and contributed to PRISE[6] through the earmarked funds for specific activities using a pooled financing arrangement with GoM and other donors[7]. However, the pooled funding, which involved application of World Bank procurement guidelines to the entire program, proved unacceptable to other donors, leading to a substantial implementation delay. Eventually, the impasse led to the restructuring of RBMMP2, following which the pooled financing mechanism was discarded and an additional financing in the amount US$41 million in IDA financing was added. The AF1 for the restructured RBMMP2 was approved on April 7, 2011 and the additional credit was made effective on September 27, 2011. AF1 extended the project closing date (of June 30, 2011) by 18 months to December 31, 2012.

11. The RBMMP2 was restructured the second time on November 19, 2012, to incorporate additional activities to mitigate the induced damages to the classified road network during the extreme weather occurrences (series of cyclones in 2011-12 rainy season). The restructuring reallocated the credit proceeds among existing categories in order to finance the additional Project activities. The project closing date was also extended at that time, by one year, to December 31, 2013.

12. In January 2013, the lower Limpopo Valley and other parts of southern Mozambique experienced devastating flooding that destroyed irrigation and transport infrastructure and severed many roads in one of Mozambique's most productive agricultural regions. The extent of overall damage triggered the risk of increased inflation and food insecurity throughout the country. Year-on-year inflation for food and non-alcoholic beverages rose from 2.5 percent in December 2012 to 6.1 percent in June 2013, remaining high at 5 percent until recently.[8] Although post-flood planting turned out to be generally successful, Government statistics indicate that food supplies were just average in 2013, which are only sufficient to meet people's basic food requirements. While maize production increased slightly, cassava production dropped by 22 percent.[9] To support the GoM address the emergency situation expeditiously, RBMMP2 was restructured yet again and AF2 was planned as a Project in Situations of Urgent Need of Assistance operation under OP/BP 10.00. The AF2 in the amount of US$110.15 million was approved in December 2013[10]. The closing date of RBMMP2 was extended by three additional years, to December 31, 2016. This additional financing (AF2) became effective in two phases; the IDA Credit and Grant and the Strategic Climate Fund (SCF) Pilot Program for Climate Resilience (PPCR) Grant and Credit became effective on July 23, 2014, while GFDRR Grant was declared effective on September 23, 2014.

[6] GoM's road sector program, PRISE, had three components: (A) Overheads; (B) Maintenance; and (C) Investments. RBMMP2 contributed to components (A) and (B) through a US$35 million allocation, and to component (C) with US$65 million for infrastructure investments and related consultant's services for civil works aimed at rehabilitating and upgrading 160 kilometers of the N1 in three sections in Maputo, Gaza and Inhambane Provinces.

[7] The original financing plan of RBMMP2 was for US$1,043 million out of which IDA's contribution was US$100 million.

[8] Instituto Nacional de Estatística (National Institute of Statistics).

[9] Instituto Nacional de Estatística (National Institute of Statistics), and Famine Early Warning Systems (FEWS) Network, Mozambique Food Security Outlook, July-December, 2014.

[10] All physical works pertaining to the original credit and AF1 and were substantially complete in December 2013.

13. The AF2 introduced three components to RBMMP2 including (i) Emergency-related (road) works in the Limpopo River Basin (approximately US$153.0 million); (ii) Pilot Program for Climate Resilient Rural Road infrastructure (approximately US$15.75 million – Climate Investment Fund funded); and (iii) zero-budget Immediate Response Contingency Fund. Emergency-related civil works were further split in two categories. The immediate emergency works (approximately US$15.0 million) were designed to restore the basic connectivity over the affected road network, while medium-term restoration/rehabilitation works (approximately US$138.0 million) were planned to provide substantive medium and long-term technical solutions that will also reduce the adverse impacts of future extreme weather events on the rehabilitated road network.

14. Since the available funds from different sources were inadequate, AF2 was approved with a financing gap of US$73.6 million. While the immediate emergency works and other project components were fully funded, the medium-term rehabilitation works were impacted by the financing gap. AF3 covers that financing gap and provides the remainder of the required funding for the above-described medium-term rehabilitation works under Part D (b) of the ongoing project.

15. AF3 supports the improvement of access of the population to all season roads in an area that was badly impacted by Limpopo floods. Without the project interventions, these communities will continue to lack all weather connectivity in the foreseeable future. Restricted access to the basic services as health, education, and markets will have serious repercussions on the entire communities in general and the poor and vulnerable, in particular. An unreliable and poor transport network will negatively impact agricultural production; a key economic activity for most households.

16. Although no detailed impact evaluation has been carried out in Mozambique, the previous project, RBMMP Phase 1, is considered to have contributed to improving the coverage and condition of road network and promoting agricultural productivity. The country's total length of roads in good or fair condition was increased from 13,500 km to 17,352 km, 73 percent of total roads. Rural population with access to an all season road has also increased to 32 percent in 2011 from 30 percent in 2007[11] [12]. Better maintained roads will translate into increased mobility in the country. The proposed additional financing to RBMMP2 also aims at improving the condition of key roads.

Climate Change

17. Mozambique is experiencing continuous and increased vulnerability to extreme weather events and longer-term climate change and is considered one of the most vulnerable countries in Africa to climate change. The country experiences long dry spells, severe floods and frequent coastal storms. This year, the north and central part of Mozambique are experiencing heavy floods. To build resilience to climate risks in Mozambique, the World Bank is supporting a broad range of interventions that compliments the activities introduced under AF2. At the policy level, the Climate Change Development Policy Operation series is supporting reforms that build climate

[11] World Bank. (2007). Implementation Completion and Results Report: Mozambique: Roads and Bridges Management and Maintenance Project Phase I. Report No. ICR0000586.
[12] World Bank. (2012). Project Performance Assessment Report: Mozambique: Roads and Bridges Management and Maintenance Project Phase I and Railways and Ports Restructuring Project. Report No. 69813-MZ.

resilience into sector planning and development, including reforms in the roads sector. These include the introduction of climate resilient design and maintenance standards for roads and support for a new reform introduced in 2014 that now requires mandatory climate risk screening of all new roads investments.

18. The PPCR-supported *Transforming Hydro-Meteorological Services Project (P131049, Grant TF014031)* is supporting institutional strengthening and modernization of national hydro-meteorological services and includes a strong geographical focus on the Limpopo Valley. Department for International Development - UK (DFID) is providing support through the World Bank for the *Enhancing Spatial data for Flood Risk Management Project (P149629, Grants TF017383 and TF017384)* which is building capacity of Mozambique to prepare for and manage flood events in the lower Limpopo and Zambezi river basin. This support includes the development of high resolution digital elevation and flood models that should contribute to improved road planning capability and could also help tailor road designs to specific geographical and hydrological conditions.

Alternates to Additional Financing

19. The public sector continues to be the dominant source of funding to invest in and maintain an efficient road network, which is vital for the economic and social development of the country. Despite an increasingly important role of rail systems, road transport remains the dominant mode of transport, carrying more than half of the total freight movements and more than 98 percent of passengers.[13] Unmet road investment needs are still significant. About 80 percent of classified roads are unpaved, and only 42 percent of the road network is in good condition.[14] In addition, about 100 km of roads are affected by floods every year.[15]

20. Besides the DFID, a notable contribution for the post-flood rehabilitation works came from the European Union, which resumed general budgetary support for the road sector. The government has committed substantial counterpart funding to the project, but is unable to mobilize additional resources to cover the financing gap. Finally, GoM has sought assistance of IDA for the remaining financing gap. Relatively low traffic volumes and lack of alternative routes preclude private sector financing and user-charge based cost recovery options.

21. GoM roads program (PRISE) supports the country's poverty reduction strategy and addresses the development of infrastructure, a priority area under the Poverty Reduction Action Plans (*Plano de Acção de Redução da Pobreza* – PARP) PARP-I (2001-2005) and PARP-II (2006-2009), and which continues to be a priority area under PARP 2011-2014. PARP 2011-2014 centers on agricultural productivity growth, promotion of small and medium-sized enterprises and social and human development. Road and bridge maintenance is recognized as essential to facilitate farmers' and firms' access to domestic and international markets. RBMMP2 and its AF3 will continue the World Bank's strong support to the government's development objectives and address

[13] Instituto Nacional de Estatística (National Institute of Statistics), Statistical Yearbook 2013.
[14] Instituto Nacional de Estatística (National Institute of Statistics, Estatísticas dos Transportes e Comunicações, 2009 – 2011.
[15] GFDRR. (2011). Economic Vulnerability and Disaster Risk Assessment in Malawi and Mozambique.

key priorities identified in the FY12-15 Country Partnership Strategy under Pillar 1: Competitiveness and Employment and Pillar II: Vulnerability and Resilience.

PDO and Current Project Status

22. The program objective of the overall Roads and Bridges Management and Maintenance Program (RBMMP) is to stimulate growth and contribute to poverty reduction through improved road infrastructure, better sector policies, and enhanced roads sector management. Specifically it does so by assisting the Recipient in: (a) improving the coverage and conditions of its roads and bridges; (b) strengthening the Recipient's institutional capacity to manage and administer the road sector; (c) establishing financing mechanisms for road maintenance; (d) promoting the use of local resources in roads construction and management; and (e) improving road transport safety.

23. The project development objective of this phase of the Program, i.e. RBMMP2, is to improve access of the population to all season roads through maintenance, rehabilitation and upgrading of the classified road network. The project development objectives (PDO) of RBMMP2 have remained unchanged since the approval of the original project in 2007[16].

24. Currently, the overall achievement of the PDO for RBMMP2 is Satisfactory. As of the end of 2014, the Key Project Indicator (KPI) 1, the percentage of the classified roads in good and fair condition, was 68 percent. KPI 1 is impacted largely by the damages sustained by the road network in Gaza province and dropped from 72 percent in December 2012 to 66 percent in the following year. The KPI 2, the percentage of the rural population within 2 kilometers of an all-season classified road, is 32.7 percent (against final target of 43.2 percent in 2016). All three major civil works components have been completed. Except for preparatory studies for the next phase of the Series of Project, all other project activities, including the new activities added upon project restructuring in October 2012, were substantially completed by December 31, 2013. The preparatory studies were impacted by the disturbed security situation in Sofala & Inhambane province. However, with the normalization of the situation in the second half of 2014, the related consulting services have restarted. Overall, the Project Implementation Progress is rated as Moderately Satisfactory.

25. The emergency works under AF2 were divided into two categories: (a) immediate emergency works to restore basic connectivity along selected flood damaged roads in Gaza Province ahead of the rainy season, and (b) medium-term rehabilitation works that will be implemented using Design Build Transfer (DBT) methodology. All immediate emergency works undertaken under Part D (a) of the Project for reestablishing connectivity are substantially complete and the DFID/GFDRR grant is fully disbursed. Due to steep foreign exchange fluctuations that resulted in about a 7 percent decrease in the dollar value of funding, the GFDRR grant amount was supplemented with funding from GoM. The immediate emergency works resulted in 621 km of restored road connectivity. Overall, the physical progress of the works is 95 percent. Further details are available in Annex 3.

[16] Inadvertently, the PP for AF2 referred to the program level development objectives as the PDO for RBMMP2. A similar inconsistency exists between the legal agreements of the project on one hand and the PAD for original credit (2007) and PAD for AF1 on the other. This anomaly has been corrected by amending the negotiated legal agreements.

26. The PPCR, part of the Climate Investment Funds (CIF), supported the following two AF2 activities: (i) preparation of National Design and Construction Standards for the classified paved and unpaved road network to ensure that future design, construction, and maintenance standards enhance the climate resilience of road investments country wide; and, (ii) piloting of improved road designs for unclassified roads and development of improved local arrangements for their maintenance – also with the objective of building longer-term resilience to climatic risks. Currently, procurement of services for these two activities is ongoing, albeit at a slower pace than planned.

27. One of the roads included in the RBMMP2, Xai-Xai Chissibuca road, implemented under a traditional input type of contracting, had experienced premature cracking of the road pavement. The premature cracking of the pavement on this road was not attributed to extreme weather activity in the region. The matter was investigated through an exhaustive independent technical and contractual audit, in order to determine the influence of the cracks on the pavement residual life, responsibility of involved parties, and determine a required remedial action. The technical and contractual Audit report by the independent Auditor was received in August 2013. The Audit has determined that the contractor and the supervising engineer were directly responsible for the observed defects. Currently, the GoM is in a discussion with the responsible parties so that the road will be repaired and brought to the planned quality, enabling the country to receive the value for money paid for rehabilitation of this important national road.

28. The Financial Management and Procurement performance rating is *Moderately Satisfactory* due to the delays in the submission of audit reports, observed inconsistencies in processing procurement transactions, and challenges related to improving financial management of the Road Fund (RF). Although an Action Plan for improved financial management is under implementation, challenges still remain and the RF would benefit from additional qualified staff. Key components of the action plan include capacity building for RF's accountants throughout the country and completion of the customization of the integrated financial management system. The RF is working with the financial management system supplier to implement customization improvements. There are no overdue audits for this project or Interim Financial Reports (IFRs) from the implementing agency.

29. The project does not have any unresolved environmental and/or social safeguards issues. The environmental and social safeguards performance was rated *Satisfactory* in the most recent Implementation Status and Results (ISR) report dated December 8, 2014. The RBMMP2 is a Category B Project. The three safeguards OP/BPs triggered in the original project, 4.01, 4.11, and 4.12, were all rated as *Satisfactory* in ISR sequence 15, archived on December 8, 2014. The updated Environmental and Social Impact Assessment (ESIA) of May 2013 will guide the preparation of Environmental and Social Management Plans (ESMP) for each sub-project of the emergency-related civil works. A Resettlement Policy Framework (RPF) for the project is available. Resettlement Action Plan (RAP) for the N1 road between Jardim and Benfica under the original project was prepared and disclosed in 2006. External auditors had noted a successful resettlement process. However, for the project activities under AF3, RAPs are unlikely to be prepared as there will be no land acquisition leading to involuntary resettlement or restrictions of access to resources or livelihoods.

III. PROPOSED CHANGES

Summary of Proposed Changes

No new activities are planned. The principal objective for AF3 is to provide funding for the medium-term rehabilitation works under Part D (b) of the ongoing project and cover the previously identified financing gap. The project closing date will be extended to allow sufficient time for project activities to be completed. The results framework has been revised to reflect the new project closing date and two indicators linked to PPCR component have been revised to more effectively measure the progress of related project activities. The Project Development Objectives stated in the legal agreements will be aligned with other Project documentation. The unallocated amount of AF2 is being reallocated to Part A and Part D (see Annex 4).

Change in Implementing Agency	Yes [ ] No [X]
Change in Project's Development Objectives	Yes [ ] No [X]
Change in Results Framework	Yes [X] No [ ]
Change in Safeguard Policies Triggered	Yes [X] No [ ]
Change of EA category	Yes [ ] No [X]
Other Changes to Safeguards	Yes [ ] No [X]
Change in Legal Covenants	Yes [ ] No [X]
Change in Loan Closing Date(s)	Yes [X] No [ ]
Cancellations Proposed	Yes [ ] No [X]
Change in Disbursement Arrangements	Yes [ ] No [X]
Reallocation between Disbursement Categories	Yes [X] No [ ]
Change in Disbursement Estimates	Yes [X] No [ ]
Change to Components and Cost	Yes [X] No [ ]
Change in Institutional Arrangements	Yes [ ] No [X]
Change in Financial Management	Yes [ ] No [X]
Change in Procurement	Yes [ ] No [X]
Change in Implementation Schedule	Yes [X] No [ ]
Other Change(s)	Yes [ ] No [X]

Development Objective/Results

Project's Development Objectives

Original PDO

The primary objective of the overall Roads and Bridges Management and Maintenance Program (RBMMP), is to stimulate growth and contribute to poverty reduction through improved road infrastructure, better sector policies, and enhanced roads sector management. More specifically by (i) improving the coverage and conditions of roads and bridges in the territory of the Recipient; (ii) strengthening the Recipient's institutional capacity to manage and administer the road sector; (iii)

establishing financing mechanisms for road maintenance; (iv) promoting the use of local resources in roads construction and management; and (v) improving road transport safety.
The project development objective of this phase of the APL is to improve access of the population to all-season roads through maintenance, rehabilitation and upgrading of the classified road network.
The indicators to assess the achievement of the PDO are (i) the percentage of classified roads in good and fair condition, and (ii) the percentage of the rural population within 2 km of an all-season road.
Intermediate outcomes have been defined as follows: (a) improved road sector management capacity; (b) enhanced execution of the road maintenance program; and (c) timely and cost-effective implementation of the IDA financed rehabilitation and upgrading of sections of the National Road N1.

Change in Project's Development Objectives

Explanation:

The PDO of the parent project remains unchanged. However, the Program level development objective was incorrectly stated as the Project PDO in the original legal agreements. This error is being corrected in project documents and legal agreements moving forward. The Intermediate outcomes indicators have been defined as follows: (a) the share of planned paved road routine maintenance achieved annually; (b) the share of planned unpaved road routine maintenance achieved annually; (c) Number of kilometers of flood damaged roads rehabilitated in Limpopo; (d) Establishment/Revision of National Design Specification and standards for paved and unpaved road network; and (e) pilot to reduce weather induced disruptions on selected rural road in Gaza Province.

Proposed New PDO - Additional Financing (AF)

The project development objective of this phase of the Program is to improve access of the population to all-season roads through maintenance, rehabilitation and upgrading of the classified road network.

Change in Results Framework

Explanation:

The results framework has been revised to account for the revised completion date of the project and the indicators which have been completed are being dropped from further monitoring. Two intermediate indicators for the Pilot Program for Climate Resilient Rural Road Infrastructure component are being amended to objectively measure the impact of the project. The target for the indicator 'Number of kilometers of flood damaged roads rehabilitated in Limpopo' has been revised downwards from 293 km to 196.10 km to account for the completion of some project works by the GoM from its internal resources.

Compliance

Change in Safeguard Policies Triggered

Explanation:

The works will not involve land acquisition nor resettlement activities. The Involuntary Resettlement safeguard Policy (OP/BP 4.12) is not triggered.

Current and Proposed Safeguard Policies Triggered:	**Current (from Current Parent ISDS)**	**Proposed (from Additional Financing ISDS)**
Environmental Assessment (OP) (BP 4.01)	Yes	Yes
Natural Habitats (OP) (BP 4.04)	No	No
Forests (OP) (BP 4.36)	No	No

Pest Management (OP 4.09)	No	No
Physical Cultural Resources (OP) (BP 4.11)	Yes	Yes
Indigenous Peoples (OP) (BP 4.10)	No	No
Involuntary Resettlement (OP) (BP 4.12)	Yes	No
Safety of Dams (OP) (BP 4.37)	No	No
Projects on International Waterways (OP) (BP 7.50)	No	No
Projects in Disputed Areas (OP) (BP 7.60)	No	No

Covenants - Additional Financing (MZ-Additional Financing for Roads and Bridges Management and Maintenance Program - Ph-2 (AF3) - P150956)

Source of Funds	Finance Agreement Reference	Description of Covenants	Date Due	Recurrent	Frequency	Action

Conditions

Source Of Fund	Name	Type
IDA	Subsidiary Agreement	Effectiveness

Description of Condition

The Additional Condition of Effectiveness consists of the following, namely that the Subsidiary Agreement has been executed on behalf of the Recipient and the Project Implementing Entity.

Risk

Risk Category	Rating (H, S, M, L)
1. Political and Governance	Substantial
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Moderate
8. Stakeholders	Moderate
9. Other	
OVERALL	Substantial

Finance

Loan Closing Date - Additional Financing (MZ-Additional Financing for Roads and Bridges Management and Maintenance Program - Ph-2 (AF3) - P150956)

Source of Funds	Proposed Additional Financing Loan Closing Date
IDA recommitted as a Credit	31-Dec-2017

Loan Closing Date(s) - Parent (Mozambique -Roads and Bridges Management and Maintenance Program - Phase II - P083325)

Explanation:

The closing date of the project will be extended by 12 months from December 31, 2016 to December 31, 2017 in order to allow time to complete the emergency-related works in the Limpopo River Basin.

Ln/Cr/TF	Status	Original Closing Date	Current Closing Date	Proposed Closing Date	Previous Closing Date(s)
IDA-43080	Effective	30-Jun-2011	31-Dec-2016	31-Dec-2016	31-Dec-2013, 31-Dec-2012, 31-Dec-2013, 31-Dec-2016
IDA-48920	Effective	31-Dec-2012	31-Dec-2016	31-Dec-2017	31-Dec-2012, 31-Dec-2013, 31-Dec-2012, 31-Dec-2013, 31-Dec-2016
IDA-53460	Effective	31-Dec-2016	31-Dec-2016	31-Dec-2017	31-Dec-2016
IDA-H9040	Effective	31-Dec-2016	31-Dec-2016	31-Dec-2017	31-Dec-2016
TF-15898	Effective	31-Dec-2016	31-Dec-2016	31-Dec-2017	31-Dec-2016
TF-15923	Effective	31-Dec-2016	31-Dec-2016	31-Dec-2017	31-Dec-2016
TF-17375	Effective	31-Dec-2015	31-Dec-2015	31-Dec-2015	31-Dec-2015

Change in Disbursement Estimates (including all sources of Financing)

Explanation:

The disbursement estimates have been updated as per the latest progress and the revised closing date.

Expected Disbursements (in USD Million) (including all Sources of Financing)

Fiscal Year	2016	2017	2018
Annual	25.00	35.00	16.10
Cumulative	25.00	60.00	76.10

Allocations - Additional Financing (MZ-Additional Financing for Roads and Bridges Management and Maintenance Program - Ph-2 (AF3) - P150956)

Source of Fund	Currency	Category of Expenditure	Allocation	Disbursement %(Type Total)

			Proposed	Proposed
IDA	XDR	Works and Consultants' services under Part D (b) of the project.	52,300,000.00	100.00
		Total:	52,300,000.00	

Reallocation between Disbursement Categories

Explanation:

Funds in the category "Unallocated" will be allocated to the categories corresponding to Parts A and B and Part D as noted in Annex 4.

Ln/Cr/TF	Currency	Current Category of Expenditure	Allocation		Disbursement %(Type Total)	
			Current	Proposed	Current	Proposed
TF-15898	USD	Gds, Wks, CS, Trg, OP Part E	9,250,000	9,250,000	100	100
TF-15898		Designated Account	0	0	0	0
		Total:	9,250,000	9,250,000		
TF-15923	USD	Gds, Wks, CS, Trg, OP Part E	6,500,000	6,500,000	100	100
TF-15923		Designated Account	0	0	0	0
		Total:	6,500,000	6,500,000		
TF-17375	EUR	WKS, GDS, CS Part D (a)	11,478,476	11,478,476	100	100
		Total:	11,478,476	11,478,476		
IDA-43080	XDR	IDA43080 GDS WK SERV CS TG OC	22,959,121	22,959,121	100	100
IDA-43080		IDA43080 WORKS Part C	39,644,834	39,644,834	100	100
IDA-43080		IDA43080 CONS SERV Part C	3,218,939	3,218,939	100	100
IDA-43080		IDA43080 UNALLOCATED	0	0	0	0
IDA-43080		Designated Account	0	0	0	0
IDA-43080		Designated Account	0	0	0	0
		Total:	65,822,894	65,822,894		
IDA-48920	XDR	IDA48920 GDS WK	12,123,000	12,123,000	100	100

		SERV CS TG OC				
IDA-48920		IDA48920 WORKS Part C (a)	10,015,000	10,015,000	100	100
IDA-48920		IDA48920 CONS SERV Part C (b)	4,162,0000	4,162,000	100	100
IDA-48920		IDA48920 UNALLOCATED	0	0	0	0
IDA-48920		Designated Account	0	0	0	0
IDA-48920		Designated Account	0	0	0	0
		Total:	26,300,000	26,300,000		
IDA-53460	XDR	GDS WK SERV CS TG OP Part A and B	267,000	346,950	100	100
IDA-53460		UNALLOCATED	533,000	0	0	0
IDA-53460		WKS, CS Part D	1,300,000	1,753,050	100	100
IDA-53460		Designated Account	0	0	0	0
		Total:	2,100,000	2,100,000		
IDA-H9040	XDR	GDS WK SERV CS TG OP Part A and B	3,008,000	3,910,250	100	100
IDA-H9040		UNALLOCATED	6,015,000	0	0	0
IDA-H9040		WKS, CS Part D	14,677,000	19,789,750	100	100
IDA-H9040		Designated Account	0	0	0	0
		Total:	23,700,000	23,700,000		

Components

Change to Components and Cost

Explanation:

The cost of component D, Limpopo River Basin Emergency Works, will increase by US$11 million, from US$153 million to US$164 million. This cost increase results from a clearer understanding of the overall costs of the works following more detailed assessment of the roads' reconstruction needs and the associated engineering costs.

Current Component Name	Proposed Component Name	Current Cost (US$M)	Proposed Cost (US$M)	Action
OVERHEAD	OVERHEAD	21.80	23.30	Revised
MAINTENANCE	MAINTENANCE	36.83	36.83	
INVESTMENTS	INVESTMENTS	86.94	86.94	

LIMPOPO RIVER BASIN EMERGENCY WORKS	LIMPOPO RIVER BASIN EMERGENCY WORKS	153.00	164.00	Revised
CLIMATE RESILIENT RURAL ROAD INFRASTRUCTURE	CLIMATE RESILIENT RURAL ROAD INFRASTRUCTURE	15.75	15.75	
IMMEDIATE RESPONSE CONTINGENCY FUND	IMMEDIATE RESPONSE CONTINGENCY FUND	0.00	0.00	
	Total:	311.32	326.82	

Other Change(s)

Implementing Agency Name	Type	Action
ROAD FUND (Fundo de Estradas)	Implementing Agency	No Change
National Road Administration (ANE)	Implementing Agency	No Change

Change in Implementation Schedule

Explanation:

The project implementation time has been increased by one year to allow sufficient time for construction of all planned medium-term rehabilitation works.

IV. APPRAISAL SUMMARY

30. ***Technical:*** **The medium-term restoration/rehabilitation works** involve more complex permanent solutions, which are required not only to restore the most affected areas, but also to prevent the potential adverse effects of future floods by incorporating long-term and modern technical and engineering solutions. The works involve rehabilitation of key road segments, cross drainage structures, and bridges, and improvement to horizontal and vertical alignments. The information supporting the technical solutions will be based on the on-going LIDAR surveys in the Limpopo River basin (providing modeling for different flooding scenarios and the extent of high water levels) and the modern geotechnical solutions responsive to the local poor soil conditions.

31. Total cost associated with the medium-term civil works is about US$149.0 million. This cost includes 20 percent physical and financial contingency (to cover the price adjustments on account of inflation) that is consistent with similar works of this nature. The implementation of these works will be monitored by an experienced international consultant. Under AF2, a sum of

US$72.90 million is available for the medium-term works[17]. The balance of US$76.10 million is covered under the proposed AF3.

32. The civil works will be implemented using an Output and Performance Based Road Contracting (OPRC) approach based on Design Build Transfer (DBT) methodology to ensure the required quality and financial control of the works. The works will chiefly involve design and construction of the stabilized flexible pavements with single/double seal bituminous surfacing, culverts and minor bridges, six major bridges (span 60meter to 100meter), slope protection works, scour protection measures, river training works, pavement marking, and road signage.

33. The Design and Build approach is tailored to allow bidders to bid on the basis of a detailed design of their choosing which plays to their strengths in terms of practical solutions which they are confident will work and are allied to the resources they have and will need in the form of equipment, staff and skilled personnel and experience. The conceptual designs and OPRC contract format provide flexibility for innovations and faster designs during the construction period. Compared with traditional input contracts, OPRC contracts provide greater control over the timelines for implementation by establishing contractual deadlines as part of the contract service standards. The DBT approach also provides the necessary quality and cost control allowing works to be implemented under a lump sum price option. OPRC contracts transfers major risks from the government to the implementing contractors and make risk sharing more equitable and effective (as compared to traditional contracts).

34. In all, seven road sections covering a length of 196.1 kilometers will be rehabilitated. Two of the roads, N1 – Chicumbane/Xai-Xai (24 km) and Chókwè/Tlhawene (31 km), that were originally under the project have been repaired by GoM with its own funds and no longer require emergency interventions. Further technical details of these works and road sections are included in Annex 3. The initially proposed 52 km Chibuto – Alto Changane road was also considered unsuitable for inclusion. Inspection showed it to be an earth road (not gravel) which is not an all-weather road, with the final 6 km section un-trafficable during the rainy season on account of annual flooding.

35. ***Economic Analysis:*** To carry out the economic analysis of project investments, a conventional road maintenance model, Road Economic Decision (RED), is used. The RED model is a simplified cost benefit analysis tool, which has the particular advantage to analyze low- to medium-traffic roads. The evaluation compares the 'with project' case where a road is rehabilitated and the 'without project' case where only routine maintenance is carried out. Main costs and benefits taken into account are road construction costs; maintenance costs; savings of vehicle operating costs; and other quantifiable savings, such as transport time savings and accident costs. The most significant benefits are expected to come from a reduction in vehicle operating costs.

36. The Economic Internal Rate of Return (EIRR) for the expected interventions on the seven road sections varies between 24 percent and 44 percent. The project has a Net Present Value using a 12 percent discount rate at US$87.7 million and has a program level EIRR of 32 percent. A sensitivity analysis has been undertaken to test robustness of the results under the assumptions of

[17] This includes US$40.0 million of borrower co-financing and US$32.9 million of IDA credit financing (of which US$8.5 million comes from previously unallocated AF2 funds and US$24.4 million was originally allocated to medium-term works, Part D (b)).

a 20 percent increase in construction costs and a 20 percent decrease in average annual daily traffic (AADT). This resulted in a 9 percent reduction in the EIRR. However, the NPV remained positive at US$53.0 million and an EIRR of 23 percent, indicating that the economic viability of the project is robust.

Environmental and Social Safeguards

37. All emergency-related project activities will be implemented under OP 10, paragraph 11. Environmental and Social Management Plans (ESMP) for the sub-projects are being prepared for all emergency-related civil works, based on the Environmental and Social Impact Assessment (ESIA) prepared for RBMMP2 in 2006 and updated in 2010 and 2013.[18]

38. The AF2 introduced three basic types of works for which two separate approaches to safeguards mitigation were designed:

(a) For the smaller, urgent restoration civil works, implementation of the Environment and Social Clauses (ESC) contained in the ESMP was included as a requirement in each civil works contract. The Resident Engineers contracted to supervise the works were obligated to supervise and report on the implementation of the ESCs.

(b) For the more complicated medium-term works and the proposed climate resilient roads infrastructure, civil works will be undertaken on the existing roads without involving new construction. The contractor(s), who will prepare detailed designs following the DBT methodology, will also prepare a site specific ESIA/ESMP (depending on the length and complexity involved), based on the initial generic ESMP prepared by ANE. As in the case of the urgent civil works, the Resident Engineer, contracted to supervise the civil works, will also supervise and report on the implementation of the ESC.

39. RBMMP2 triggered OP/BP 4.11 (Physical Cultural Resources). The location of the emergency restoration civil works does not include works located in, or in the vicinity of, recognized cultural heritage sites. Nevertheless, a section on chance find procedures will be included as part of the ESC in all new contracts and is included in the project ESIA/ESMP.

40. Likewise, ANE and RF have been updating the revised 2010 Resettlement Policy Framework (RPF) of both the parent project and RBMMP2 in order to ensure project overall compliance with OP/BP 4.12 on Involuntary Resettlement. Since the likelihood of resettlement is very minimal to negligible, preparation of a Resettlement Action Plan (RAP) is not expected during the course of this project. The updated RPF will be disclosed both in-country and at the InfoShop during project implementation. RAPs may be prepared as and when necessary during project implementation, in conformity with the RPF; however, it is unlikely the project will involve land acquisition leading to involuntary resettlement and/or restrictions of access to resources and livelihoods. The overall social impacts of the project are foreseen to be very positive due to the accessibility and affordability of transport services resulting from the rehabilitation/reconstruction works funded by this AF3.

[18] For some of the larger works, an ESIA may also be prepared.

41. The original three sub-projects financed under RPMMP2 were delivered satisfactorily from an environmental and social safeguards point of view in accordance with the original ESIA/ ESMP. The Safeguards Audit of May 2012 reported that the RAP was implemented successfully, within the agreed timeframe, and in a consultative and participatory manner (i.e. gender and vulnerable groups' consideration).

42. The emergency works being carried out under the second restructuring (November 2012) are still following an ESMP prepared at that time and the Resident Engineers' (RE) contracts were revised to include monitoring of the ESMP as part of overall monitoring of the civil works. The REs' reporting to ANE includes sections on safeguards compliance as per the ESC included in their contracts; however, ANE supervision and safeguards reporting by Environment and Social specialists to IDA has been lagging. While the Resident Engineers appear to be reporting on the implementation of the ESMP for on-going emergency works, ANE has not conducted any environmental supervision missions to those sites. It was agreed that ANE's environment team would ensure that each site is visited on quarterly basis (or at the very minimum, semi-annually) in order to properly confirm the REs' reports, initiate any needed mitigation, and properly document mitigating actions being taken during construction. These recommendations will also be applied to the works financed under this AF3.

43. As part of the preparation for the current emergency restoration works, it was agreed that ANE would conduct quarterly safeguards supervision of all ongoing civil works under RBMMP2 and report accordingly on progress and compliance to IDA. However, the reporting on environmental and social issues requires further improvement. The Bank team will coordinate with ANE environmental and social team to improve the quality of reporting by the consultants and contractors.

44. Project Liaison Committee (PLC) will be set up in order to ensure community involvement during and after construction phase of road works. PLC will have, among others, local government representatives, traditional leaders, community representatives, and the contractor's representative(s). This PLC will coordinate with the contractor and local government on all social related issues during the road works.

Financial Management and Procurement

45. The project's financial management (FM) and procurement arrangements will not change.

RISKS

46. **Political Economy:** The country successfully held its fifth general elections (presidential, legislative, and provincial) on October 15th last year. The newly formed government is likely to face strong challenges from the opposition. The political solution that put an end to the two years or so of military confrontation might come under strain. Security perceptions may lead to lack of interest on the part of potential international bidders or may trigger political force majeure once the contract is signed.

47. **Funding Gap:** Overall funding requirement may be significantly higher than currently appraised due to the overall country situation and overly conservative valuation of climate change

risk. Recent cataclysmic floods in January 2015 have affected the north and center parts of Mozambique. The damage to public infrastructure is likely to be severe. The reconstruction effort in newly flood affected regions will create additional demand on government finances. Lack of timely financing for all permanent works identified by the civil works contracts remains a risk to fully achieve the PDO. The cost estimates are allowing for 10 percent price contingency to mitigate the risk of cost increase. GoM has plans to finance such additional cost, if warranted, from its budget resources.

48. **Inadequate local road standards/specifications and inaccurate cost estimates.** Paucity of quality stone aggregates in the region poses significant challenge to traditional road construction. Cement stabilization has been used without recourse to international best practices and as a result pavement cracking is widely observed in field. The damages to such roads in the Limpopo River Basin were aggravated by poorly performing stabilized bases. In addition, weak technical knowledge in the implementing agencies may affect the ability to produce economically justified and reliable quality cost estimates. This risk could critically affect the sustainability of investments. As per project design, the construction risk is borne by the contractor and encourages innovation to overcome limiting standards. Separately, an ongoing project activity under RBMMP2 is the revision of design and construction standards for paved and unpaved roads in the country. It is anticipated that early deliverables from this assignment will help inform the adopted designs of medium-term rehabilitation works.

49. **Inadequate professional capacity in the sector** often results in failure to provide energetic leadership and good governance, hampers timely decision making, and slows project implementation. The size of planned investments is nearly twice the magnitude of original project. ANE still needs to add greater technical and management capacity to timely and orderly supervise its major infrastructure program. The road sector may have difficulties in hiring qualified technical and fiduciary staff trained in Bank procedures. RF and ANE staff turnover also makes it difficult to build capacity in this regard. Local contracting and consulting industry talent is limited, which may result in unsuccessful bidding processes, higher than expected bid prices, or poorly executed works. A separate project delivery team has been formed (Flood Response Team- FRT) to implement the project. FRT is supported by the Technical Support Group (TSG); a team of international consultants to provide online support to FRT in the areas of project and contract management. The project is also financing operating costs of FRT. To attract qualified and experienced international contractors, GoM plans to publicize the works widely. A series of workshops are planned to acquaint the local contractors and consultants of the business opportunities presented by the DBT methodology.

50. **Sustainability:** Mozambique is one of the most vulnerable countries to climate change and severe weather risks in Africa. The threat is evident given recent extreme weather activities affecting Mozambique. The vulnerability of road infrastructure to floods associated with heavy rainfall in upstream catchments and from cyclonic activity is exacerbated by weaknesses in the design and construction of river training works (dykes, dams etc.). RBMMP2 is delivering specific and targeted support to assist the client to address climate risks associated with the road sector. The urgent need to restore damaged infrastructure to a pre-flood may dilute the diligence required to find coordinated long-term climate resilient solutions. To mitigate this risk, the emergency works were split in two categories as part of the initial project design (as explained in paragraph

13) allowing sufficient time for planning and designing of the medium-term rehabilitation works that are the focus of this additional financing.

51. Support introduced through AF2 is helping the roads sector to revise roads standards specifically designed to enhance the climate resilience of road infrastructure in Mozambique. AF2 is also supporting a survey and assessment of climate risks to the roads network of Gaza and West Inhambane to map and quantify climate risks and to identify design options to address these risks. These options will then be piloted as part of RBMMP2 supported investment. The pilot will focus on tertiary roads and inform the design of future works. In parallel, a Climate Change Development Policy Operation is supporting a number of reforms to build long-term resilience in the roads sector, including the introduction of the above mentioned roads standards and the introduction of mandatory climate risk screening for all new roads investments – a policy reform that has strong GoM ownership.

ANNEX 1: REVISED RESULTS FRAMEWORK AND MONITORING

MOZAMBIQUE: Roads and Bridges Management and Maintenance Program - Phase 2 – the Third Additional Financing

Project Development Objective (PDO): The project development objective of this phase of the program, i.e. RBMMP2, is to improve access of the population to all season roads through maintenance, rehabilitation and upgrading of the classified road network
Revised Project Development Objective: No change proposed.

Project Outcome Indicators	Core	D=Dropped C=Continue N= New R=Revised	Unit of Measure	Baselines		Cumulative Target Values			Date Collection and Reporting		
				Original[19] (2006)	Current (2014)	2015	2016	2017	Frequency	Methodology	Responsibility
PDO Level Results Indicators#											
1. The percentage of classified roads in good and fair condition.	☒	R	Percentage	64	68	65[20]	68	71	Annually	Road condition reports	ANE
2. The percentage of the rural population within 2 kilometers of an all-season road.	☒	R	Percentage	11	34	36	38.5	40	Annually	Census and road condition data	ANE
3. Project Beneficiaries (Rural only)[21]	☒	C	Number	1.5 mill.	5.1 mill.	5.3 mill.	5.5 mill.	6.1 mill.	Annually	Estimate based on #2 and rural population	Road Fund

[19] Original Baselines values were established in 2006 where applicable. The current values under the Baseline column are as of December 31, 2014. The Project supports the *Programa Integrado do Sector de Estradas* (PRISE) which is implemented using a sector wide approach. Progress made in achieving the objectives of PRISE is reported through a Performance Assessment Framework which has been jointly developed by all the sector stakeholders. The road sector Performance Assessment Framework (PAF) aims at incorporating the reporting needs of all stakeholders to reduce the need for the high level of individual project reporting needs that had earlier prevailed in the sector.

[20] The revised targets for 2015 (lower than currently reported achievement) and next two years is reflecting the most recent flooding in Nampula and Zambézia provinces.

[21] Aligned with PPCR Core Indicator # 5 "Number of people supported by the PPCR to cope with the effects of climate change"

Project Outcome Indicators	Core	D=Dropped C=Continue N= New R=Revised	Unit of Measure	Baselines		Cumulative Target Values			Date Collection and Reporting		
				Original[19] (2006)	Current (2014)	2015	2016	2017	Frequency	Methodology	Responsibility
Of which female (beneficiaries)	☒	C	Number	0.8 mill.	2.6 mill.	2.7 mill.	2.8 mill.	3.1 mill.	Annually	Estimate based on #2 and rural population	ANE
Intermediate Outcome Indicators											
B (i) The share of planned paved road routine maintenance program achieved annually		C	Percentage	54	92	95	100	100	Annually	FMS and PRISE annual report	ANE and Road Fund
B (ii) The share of planned unpaved road routine maintenance program achieved annually		C	Percentage	66	95	95	100	100	Annually	FMS and PRISE annual report	ANE and Road Fund
C (i)102 kilometers of the N1 rehabilitated and upgraded as per revised plan[22]	☒	D	km	0	102	102	Completed	Completed	Annually	Quarterly Progress Reports	ANE and consultants
C (ii) Cyclone and Floods Affected road sections repaired		D	Number	0	34	Completed	Completed	Completed	Annually	Progress Reports	ANE and consultants
C (iii) Damaged Drifts/bridges reconstructed		D	Number	0	11	Completed	Completed	Completed	Annually	Progress Reports	ANE and consultants
C (iv) Permanent weigh bridge installed in Macia		D	Number	0	1	Completed	Completed	Completed	n/a	Progress Reports	ANE and consultants

[22] This indicator appears in ISRs as “Roads Rehabilitated, Non-Rural”; as this indicator is complete and is being dropped from further monitoring, a revision of the indicator name is not requested at this time.

Project Outcome Indicators	Core	D=Dropped C=Continue N= New R=Revised	Unit of Measure	Baselines		Cumulative Target Values			Date Collection and Reporting		
				Original[19] (2006)	Current (2014)	2015	2016	2017	Frequency	Methodology	Responsibility
C (i) Number of kilometers of flood damaged roads rehabilitated in Limpopo		C	kilometer	0	0	0	100	196.1	Annually	Progress Reports	ANE and consultants
Establishment/Revision of National Design Specifications and Standards for paved and unpaved road network[23]		R	Qualitative	-	-			Revised Design Standards adopted	Revised Design Standards adopted	N/A	ANE
Pilot to reduce weather induced disruptions on selected rural roads in Gaza province[24]		R	Qualitative	-	-		Pilot launched	Pilot Completed.	Annually	Progress Reports	ANE and consultants

*** Indicate if the indicator is Dropped, Continued, New, Revised, or if there is a change in the end of project target value**

[23] Contributes to PPCR Core Indicator #1 "Degree of Integration of climate change in national, including sector planning".
[24] Contributes to PPCR Core Indicator #3 "Quality and extent to which, climate responsive instruments/ investment models are developed and tested".

ANNEX 2: REVISIONS TO THE RESULTS FRAMEWORK

MOZAMBIQUE: Roads and Bridges Management and Maintenance Program - Phase 2 – the Third Additional Financing

Table 2-1: Revisions to the Results Framework

Revisions to the Results Framework		**Comments/ Rationale for Change**
PDO		
Current (PAD)	*Proposed*	
The project development objective of this phase of the Program i.e. RBMMP2 is to improve access of the population to all season roads through maintenance, rehabilitation and upgrading of the classified road network.	No change	The Program level Development Objective was inadvertently referred to as Project Development Objective in AF2 PP. This has been amended
Project Outcome Indicators		
Current (PAD)	*Proposed change**	*Comments*
Percentage of classified roads in good and fair condition	Target revised.	The end of project targets have been aligned with new project closing date and discount the estimated impact of recent floods in Nampula and Zambézia on PRISE outcomes.
Percentage of the rural population within two kilometers of an all-season classified road	Target revised.	The end of project target has been aligned with new project closing date.
Project Beneficiaries (Rural Only) Of which are female	Target revised.	The end of project target has been aligned with new project closing date.
Intermediate Results indicators		
Current (PAD)	*Proposed change**	*Comments*
B (i) The share of planned paved road routine maintenance program achieved annually	Continued	
B (ii) The share of planned unpaved road routine maintenance program achieved annually	Continued	

Revisions to the Results Framework		Comments/ Rationale for Change
C (i)Number of kilometers of the N1 rehabilitated and upgraded as per revised plan	Dropped	Target was achieved.
C (ii) Cyclone and Floods Affected road sections repaired	Dropped	Target was achieved.
C (iii) Damaged Drifts/bridges reconstructed	Dropped	Target was achieved.
C (iv) Permanent weigh bridge installed in Macia	Dropped	Target was achieved.
Number of kilometers of flood damaged roads rehabilitated in Limpopo	Revised.	The scope of project interventions has been reduced from 293 to 196.10 kilometers. See Annex 3, Paragraph 13 for details.
Establishment/Revision of National Design Specification and standards for paved and unpaved road network[25]	Revised	Qualitative measurements are proposed for tracking the progress of the project activity.
Pilot to reduce weather induced disruptions on selected rural roads in Gaza province[26]	Revised	Qualitative measurements are proposed for tracking the progress of the project activity.

[25] Contributes to PPCR Core Indicator #1 "Degree of Integration of climate change in national, including sector, planning"
[26] Contributes to PPCR Core Indicator #3 "Quality and extent to which climate responsive instruments/ investment models are developed and tested".

ANNEX 3: DETAILED DESCRIPTION OF THE ONGOING PROJECT ACTIVITIES

MOZAMBIQUE: Roads and Bridges Management and Maintenance Program - Phase 2 – the Third Additional Financing

1. The second Additional Financing (AF2) had introduced activities under four different components. The first component includes emergency works in the Limpopo River Basin which were originally estimated to cost approximately US$153 million. The revised cost of such works as per this proposed AF3 is US$164.0 million. No changes are proposed to other components of the project.

2. The support to the incremental operating costs and training of Road Fund and ANE staff will include preparation of the Integrated Strategy of Human Resources Development in the Road Sector as well as creation of a capacity building program that includes training.

3. The emergency works, under the first component, were divided into two categories of works: (a) immediate emergency works that need to be implemented immediately, and (b) medium-term rehabilitation works, which will be implemented using Design Build Transfer (DBT) methodology. The immediate emergency works were financed by Department for International Development – UK (DFID) through Global Facility for Disaster Reduction and Recovery (GFDRR) in an amount of €11.48 million. The medium-term rehabilitation works are financed by the Bank in an amount of US$105.05 million and by the GoM in an amount of US$55.0 million.

4. The immediate emergency works undertaken under Part D (a) of the Project were designed to reestablish connectivity along selected flood damaged roads in Gaza Province ahead of the rainy season. These works were let out in eight lots. Supervision of these works was carried out by three separate consultants. In all, these works targeted to restore connectivity over approximately 651 Km[27]. Due to limited availability of funds from GFDRR/DFID, approximately 30 km of road length was deleted from the scope of Lot 8 works. The deleted section has been completed by the government from its own resources. As of date, all physical works are substantially complete resulting in about 621 km of restored road connectivity at a cost of MZN 342.17 million (omitting Lot 3 costs). Additional adjoining road sections funded by Government contribute to a far broader overall improvement in connectivity.

Table 3-1: Summary Status of Immediate Emergency Works and Consultancy Services Under Part D (a) of the Project

Physical Works					
Contract Description		**Length (Km)**	**Total Cost[28] (US$)**	**Financial Progress %**	**Progress of Works**
Lot 1	N/C- Xai-Xai/ Chilaulene	13.0	272,961.08	100%	Complete

[27] Approximately 30 km of road length was deleted from the scope of Lot 8 works. (ANE correspondence dated November 25, 2014.)
[28] Table relies on the exchange rate 1 USD: 32.175 MZN and I €: 1.25 USD.

Physical Works					
Contract Description		**Length (Km)**	**Total Cost[28] (US$)**	**Financial Progress %**	**Progress of Works**
Lot 2	R441- Chinhacanine/ Nalazi	64.0	463,815.72	90%	Substantially complete
Lot 3	N/C-Ndonga/ Ndindiza	117.0	1,081,460.53	44%%	90% complete
Lot 4	N/C-Mahambe/ Maqueze	54.7	2,385,196.91	99.6%	Substantially Complete
Lot 5	N/C-Zinhane /Maxaila	47.0	1,538,843.67	100%	Complete
Lot 6	N222-Mapai/ Maxaila	114.0	512,653.83	100%	Complete
Lot 7	R441- Maxaila/ Massangena and R456: Massangena/ Mavue	144.0	3,796,616.48	100%	Complete
Lot 8	Manjacaze/ Macuácua, R450: Malehice/ Manjacaze and R450: Manjacaze/ Chidenguele	67.0	1,664,986.03	100%	Complete
Subtotal		620.7	11,716,534.25	87%	

Consultancy Services				
Contract	Length (Km)	Total Cost (US$)	Financial progress %	Remarks
Supervision Package 1	305.0	1,014,041.62	90%	Lot 5, 6, & 7
Supervision Package 2	134.7	661,220.37	83%	Lot 1,4, & 8
Supervision Package 3	181.0	1,031,879.91	78%	Lot 2 & 3
Subtotal	620.7	2,707,141.90	84%	
Grand Total	**620.7**	**14,423,676.15**		

Medium-term Rehabilitation Works - DBT methodology

5. The DBT methodology includes all Medium-term Rehabilitation Works which require conceptual design for its implementation. Detailed engineering designs will be provided by a contractor during implementation and verified by Monitoring Supervision consultant acting on behalf of the Employer. The selected roads are presented in the Table 3-2 and are currently grouped

in six lots. These works will use OPRC type of contracts. The following roads are planned for inclusion.

6. The 3 de Fevereiro to Crz N220 road with an overall length of 17.60 km is an existing low lying paved road of Double Bituminous Surface Treatment (DBST) which is generally in good condition with some surface distress. As such, there are two sections totaling approximately 1.5 km where the entire asphalt surface has been lost with associated heavy damage to the stabilized base and subgrade as a result of flood damage. Rehabilitation is proposed in the form of: ripping and re-compacting damaged sections, use of geo-synthetics, reconstruction of damaged sections of cement stabilized base, patching and resurfacing through scrub sealing and DBST, plus reconstruction of a box culvert and a 100 m span bridge.

7. The Mapapa - Chilembene road with an overall length of 17.24 km includes two 20 meter (m) span bridges in good condition. It is an existing low lying paved (DBST) road which is generally in good condition with some surface distress. However, there are two sections totaling approximately 6.5 km where the entire DBST surface has been lost with associated heavy damage to the stabilized base and subgrade as a result of flood damage. Rehabilitation is proposed in the form of: ripping and re-compaction of damaged sections, use of geo-synthetics, reconstruction of damaged sections of cement stabilized base, patching and resurfacing through scrub sealing and DBST, plus reconstruction of a box culvert.

8. The Chilembene – Maniquenique road with an overall length of 34 km is existing low lying asphalt surfaced road of which much of the asphalt surfacing has been lost, although the geocel cement stabilized base has substantially survived in a rough but serviceable condition. Rehabilitation is proposed in the form of: limited reconstruction of the damaged sections of the geocel cement stabilized base, patching and resurfacing through scrub sealing and DBST, plus reconstruction of a box culvert. The rehabilitation Works include reconstruction of one bridge with an overall span of 100m x 7.20m width.

9. The Chokwe – Guija road with an overall length of 3.36 km includes two existing bridges in good and fair condition, of approximately 51 m and 19 m overall spans. It is an existing low lying surfaced road (DBST) which is generally in good condition with some surface distress, with two sections totaling approximately 1 km where the entire DBST surface has been lost with associated heavy damage to the stabilized base and subgrade as a result of flood damage. Rehabilitation is proposed in the form of: reconstruction of scour damage, provision of enhanced scour protection, reconstruction of damaged sections of cement stabilized base, patching and resurfacing through scrub sealing and DBST.

10. The Chokwe – Macarretane road with an overall length of 25.26 km includes one existing bridge in good/fair condition, of approximately 60 m overall span (over the Limpopo River) and one box culvert. It is an existing low lying DBST surfaced road which is generally in good condition with some surface distress, with two sections totaling approximately 2.7 km where the entire DBST surface has been lost, and with associated heavy damage to the gravel base and subgrade as a result of flood damage. Rehabilitation is proposed in the form of: ripping and re-compaction of damaged sections, use of geo-synthetics, rehabilitation and installation of culverts, reconstruction of damaged sections of the base, patching and resurfacing through scrub sealing

and DBST. The rehabilitation Works also include for reconstruction of two bridges with overall span lengths of 100m and 60m x 7.20m width and an extension to the effective concrete embankment slope protection at Chokwe.

11. The Chissano – Chibuto road with an overall length of 39.09 km includes bridges and some box culverts. This is an existing paved road (DBST) built on an embankment as a dyke. It suffered severe flood damage at seven locations covering approximately 5.3 km of road in which the DBST surfacing, the cement stabilized base and the road formation were substantially "destroyed" by flood damage. The other sections of the road survived with extensive reflective cracking. Rehabilitation is envisaged in the form of: reconstruction of the flood damaged sections but to a lower profile, ripping and re-compaction of damaged sections, use of geo-synthetics, rehabilitation and installation of culverts, additional armor stone abutment protection at the bridge, reconstruction of damaged sections of cement stabilized base, patching and resurfacing through scrub sealing and DBST.

12. The Chibuto – Guija road with an overall length of 59.56 km, includes four bridges of which two spans (60 m and 70 m) have to be reconstructed, with 12 multi-cell box culverts in fair condition. This is a paved (DBST) road which is partially low lying and partially mounted on a raised embankment which acts as a dyke in protection of local communities from flooding. Approximately 42.8 km of this road is assessed as substantially damaged by the flooding. Rehabilitation is envisaged in the form of: reconstruction of the flood damaged sections but as far as practicable to a lower profile, ripping and re-compaction of damaged sections, use of geo-synthetics, rehabilitation and installation of culverts, additional armor stone abutment protection at the bridges, reconstruction of damaged sections of cement stabilized base, patching and resurfacing through scrub sealing and DBST, plus reconstruction of the two bridges of 60 m and 70 m spans.

13. It is noted that three roads are no longer included in the planned works, including: the Chicumbane – Xai-Xai road with an overall length of 24 km. The GoM has already concluded the rehabilitation and, consequently, it is no longer considered suitable for inclusion in the RBMMP2 project. Similarly, the Chokwe – Tihawene road of 31 km in length is a gravel road in which GoM has already completed major construction of 14 high level box culverts. No further works are planned under RBMMP2 on this road. The 52 km Chibuto – Alto Changane road is also considered unsuitable for inclusion. It is an earth road (not gravel) which is not an all-weather road, with the final 6 km section un-trafficable during the rainy season on account of annual flooding.

Table 3-2: Medium-term Rehabilitation Works –DBT Methodology

S No	Name of the Road	Planned Works	Civil Works Estimated Values (10^3*USD)
1	N/C-3 de Fevereiro/CrzN220 (17.6 km)	Reconstruction of 1 No. bridge and a box culvert, and short sections of road formation, resurfacing, and enhanced scour protection	3,676.6

Table 3-2: Medium-term Rehabilitation Works –DBT Methodology

S No	Name of the Road	Planned Works	Civil Works Estimated Values (10^3*USD)
2	R452-Mapapa/Chilembene (17.24 km)	Reconstruction of 1 No. box culvert and 6.5 km of road formation repairs, plus resurfacing and enhanced scour protection.	10,343.8
3	R859-Chilembene/Maniquenique (34 km)	Reconstruction of 1 No. bridge, with enhanced scour protection, localized repairs to the Geocel road base, drainage improvement; and resurfacing	8,437.0
4	R890-Chókwè/Guijá (3.36 km)	Reconstruction of drainage structures and embankments, with enhanced scour protection, base repair and resurfacing.	1,669.7
5	R448-Chókwè/Macarretane (25.26 km)	Reconstruction of flood damaged embankment sections, with enhanced scour protection, new base and resurfacing.	6,318.3
6	N220-Chissano/Chibuto (39.09 km)	Reconstruction of flood damaged embankment sections, with enhanced scour protection, new base and resurfacing.	31,085.1
7	N221-Chibuto /Guijá (59.56 km)	Reconstruction of 2 No. bridges, and associated scour damage to these and other structures, plus enhanced scour protection, base repairs and resurfacing.	57,708.2
	Sub-Total		119,238.7 Approximately $120.0 million
	Physical and Financial Contingencies ~20%		**24.0 million**
	Supervision Cost		**5.0 million**
	Total		**149.0 million**

PPCR RELATED WORKS

14. PPCR support through the Second Additional Financing for the RBMMP2 is one of 6 national pilots included in the Government's Strategic program on Climate Resilience – funded by the Pilot Program on Climate Resilience (PPCR). PPCR funds are being deployed to support two AF2 activities: (i) Preparation of National Design and Construction Standards for classified paved and unpaved road network – these will be designed to ensure that future design, construction and

maintenance standards enhance the climate resilience of road investments at national scale, and (ii) Piloting of improved road designs for unclassified roads and development of improved local arrangements for their maintenance – also with the objective of building longer-term resilience to climatic risks. Currently, procurement of services for these two activities is ongoing.

ANNEX 4: ESTIMATE OF THE REVISED PROJECT COSTS

MOZAMBIQUE: Roads and Bridges Management and Maintenance Program - Phase 2 – the Third Additional Financing

Table 4-1: Updated Costs by Category (in US Dollars)

No.	*Category*	*Original cost (Credit 4308) 100% disbursed*	*Changes with AF (Credit 4892)*	*Changes with AF2*	*Changes with AF3*	*Revised cost*
1	Goods, Works (except as covered by Category 2 below), services (other than consultants' services), consultants' services (except as covered by Category 3 below), Training and Operating Costs for Part A and Part B of the Project	34,729,882	18,898,973	6,500,000*		60,128,855
2	Works for Part C (a) of the Project	59,970,083	15,612,738			75,582,820
3	Consultants' services for Part C (b) of the Project	4,869,236	6,488,289			11,357,525
4	Unallocated/Contingency					-
5	Works and Consultants' services under Parts D (a) of the Project.			15,000,000		15,000,000
6	Works and Consultants' services under Parts D (b) of the Project.			72,900,000**	76,100,000†	149,000,000
7	Goods, Works, and Consultants' Services for Part E of the Project			15,750,000		15,750,000
8	Goods, Works, Consultants' services, Training and Operating Costs under Part F of the Project			0		
TOTAL		**99,569,200**	**41,000,000**	**110,150,000**	**76,100,000†**	**326,819,200**

Note: the value of Category 1 in the original credit reflects the cancelation of SDR 277,106 (US$430,800 equivalent)

*Includes US$1.5 million, which will be reallocated from the Unallocated category.

** Includes US$40.0 million government counterpart funding and US$8.5 million reallocated from the Unallocated category.

†Includes US$2.5 million government counterpart funding.

ANNEX 5. DETAILED DESCRIPTION OF PROJECT ACTIVITIES

MOZAMBIQUE: Roads and Bridges Management and Maintenance Program - Phase 2 – the Third Additional Financing

1. The program objective of the overall RBMMP is to stimulate growth and contribute to poverty reduction through improved road infrastructure, better sector policies, and enhanced road sector management. Specifically, it does so by assisting the Recipient in: (a) improving the coverage and conditions of its roads and bridges; (b) strengthening the Recipient's institutional capacity to manage and administer the road sector; (c) establishing financing mechanisms for road maintenance; (d) promoting the use of local resources in roads construction and management; and (e) improving road transport safety. The objective of the project is to improve access of the population to all season roads through maintenance, rehabilitation, and upgrading of the classified road network.

2. The Project consists of the following six parts/Components:

Part A: Overhead Costs (US$23.30 million)

(a) Administrative costs (US$8.35 million)

Support to the Project Implementing Entity and the National Road Administration (ANE), at national and provincial levels, to strengthen their administrative capacity through the provision of goods, technical assistance and Operating Costs.

(b) Capacity building (US$14.15 million)

Strengthening the technical capacity of the Project Implementing Entity, ANE, and the Recipient's Ministry of Public Works, Housing and Water Resources through:

(i) the provision of technical assistance in the areas of: (A) financial management; (B) control systems; (C) information technology; (D) road management and maintenance; (E) training to national and provincial staff; and

(ii) the carrying out of studies, among others, on:

(A) National and provincial roads strategies, plans, and budgets;

(B) Financial, technical, and procurement audits, including methods to strengthen financial management and procedures for the processing of internal financial audits;

(C) Highway information and management system;

(D) Climate resilience in road design and maintenance; and

(E) Financial management systems.

(c) Additional Programs (US$0.8 million)

Road Safety Program, including but not limited to

(i) Carrying out of safety related civil works on the Recipient's road network.

(ii) Development of a Road Safety Data Management System (RSDMS)

Part B: Maintenance of the Road Network (US$36.83 million)

Carrying out of civil works for the maintenance of the paved and unpaved road network, including routine and periodic maintenance, local repairs and road markings.

Part C: Investments (US$86.94 million)

(a) National Road Rehabilitation and Upgrade Program (US$75.58 million)

Rehabilitation of the Jardim-Benfica and Xai-Xai–Chissibuca sections of the N1, including widening, surfacing, shape correction, strengthening and upgrading of the existing pavement and repairs of minor drainage structures, geometric and structural improvements to enhance traffic capacity and safety for vehicles and pedestrians.

(b) Engineering Services (US$11.36 million)

Provision of consulting services for: (i) the supervision of the civil works referred to in Part C (a) of the Project; (ii) the supervision of the civil works to rehabilitate the Massinga – Nhachengue road; and (iii) the design of engineering plans to ensure the Project's sustainability.

Part D: Emergency related works in Limpopo River Basin (approximately US$164.00 million):

Carrying out of civil works for reconstruction and rehabilitation of the damaged road network in Gaza province. The emergency works are categorized into two major groups.

(a) Immediate Emergency Works (US$15 million)

This category involves the relatively smaller urgent works planned to restore a modicum of connectivity over the network. These works are substantially complete.

(b) Medium-Term Emergency Works (US$149.0 million)

The second category involves more complicated and intensive works related to substantive medium and long term technical solutions which will be more resilient to future floods and minimize their adverse influence on the area. These are being prepared under design and build methodology using an Output and Performance Based (OPRC) type of contract which transfers the majority of the risks to the contracting party. The proposed additional financing covers the financing gap associated with these works.

Part E: Development of Climate Resilient Rural Road Infrastructure (approximately US$15.75 million):

The Pilot Program for Climate Resilience (PPCR), part of the Climate Investment Funds, supported two project activities. The two activities are (a) Preparation of National Design and Construction Standards for classified paved and unpaved road network – these will be designed to ensure that future design, construction and maintenance standards enhance the climate resilience of road investments at national scale, and (b) Piloting of improved road designs for unclassified roads and development of improved local arrangements for their maintenance – also

with the objective of building longer-term resilience to climatic risks. Currently, procurement of services for these two activities is ongoing, albeit at a slower pace than planned.

Part F: Immediate Response Contingency Fund (US$0 million)

This is an immediate response mechanism to facilitate access to rapid financing for disaster response in the aftermath of a natural disaster. It establishes a zero-budget Immediate Response Contingency Fund that could be triggered in the event of a natural disaster through formal declaration of a national or regional state of emergency, or upon a formal request from the Government in the wake of a disaster.

NB: Rounded total is US$326.82 million, i.e. the initial loan amount (US$100 million) + the first Additional Financing amount (US$41 million) + the second Additional Financing (US$110.15 million)+ the third Additional Financing (US$73.60)+ the Government counterpart funding to AF3 (US$2.50 million) – mis-procured amount (US$0.43million).

ANNEX 6: DEVELOPMENT PARTNER FUNDING OF PRISE BY COMPONENT

MOZAMBIQUE: Roads and Bridges Management and Maintenance Program - Phase 2 – the Third Additional Financing

Table 6-1: PRISE 2007–2009 (US$ millions)

Component DP	Dedicated Overhead	Dedicated Maintenance	Dedicated Investment	Pooled Fund	Total
IDA APL 2			65.0	35.0	100.0
IDA APL1	1.5	0.5	9.7		11.7
EU	9.6		116.2	59.8	185.6
ADB			44.6		44.6
DFID				20.0	20.0
Asdi	13.3		52.9	1.8	67.9
Italy			19.0		19.0
Japan			74.9		74.9
MCC			137.1		137.1
USAID			5.9		5.9
KfW			11.8		11.8
AFD			0.5		0.5
DANIDA			10.1		10.1
NORAD			2.2		2.2
BADEA					
IDB			12.4		12.4
Irish			2.0		2.0
NDF			8.5		8.5
OPEC			8.1		8.1
IFAD			0.1		0.1
Total	24.4	0.5	580.6	116.6	722.1

Note: Values indicated at time of PRISE launching, February 2007.

Table 6-2: PRISE Funding Sources 2011-2015* (US$ millions)

DESCRIPTION	TOTAL 2011-2015
Internal Resources	
Government of Mozambique	1,177
External Resources – Grants	**274**
Sector Budget – EU	19
Sector Budget – DANIDA	14
Sector Budget – UK	7
International Fundo for Agricultural Development	8
Swedish International Development Agency	74
European Development Fund	126
Japan International Development Agency	24
German Bank for Reconstruction and Development	3
External Resources – Credits	**1,046**
World Bank	113
African Development Bank	181
International Fundo for Agricultural Development	13
Organization of Petroleum Exporting Countries	5
Japan Investment Bank (JICA)	87
Islamic Development Bank	6
Korean EXIM Bank	12
China EXIM Bank	60
India EXIM Bank	37
Government of Portugal	531
Total	**3,817**

*Includes actual values for 2011-2014 and projections for the year 2015.

ANNEX 7: ECONOMIC ANALYSIS FOR PHASE 2 EMERGENCY WORKS IN GAZA PROVINCE

MOZAMBIQUE: Roads and Bridges Management and Maintenance Program - Phase 2 – the Third Additional Financing

1. The proposed additional financing aims at improving the condition of key roads damaged by Limpopo floods in Gaza province. The following economic analysis focuses on direct economic benefits from road improvement, such as road user cost reduction and road maintenance cost savings, using a conventional road management model.

Methodology

2. A conventional road maintenance model, the Road Economic Decision (RED), is used to evaluate project costs and benefits. The RED model is a simplified cost benefit analysis tool which is particularly advantageous for analyzing low to medium traffic roads. The evaluation compares the 'with project' case, in which a road is rehabilitated, to the 'without project' case, in which only routine maintenance is carried out. The main costs and benefits taken into account are as follows:

- Road construction costs;
- Road maintenance costs;
- Vehicle operating cost savings;
- Other quantifiable savings, such as transport time savings and accident reduction.

3. The most significant benefits are expected to come from a reduction in vehicle operating costs.

4. The reconstruction works are assumed to be implemented in the first 2 years and the project life is assumed to be 20 years. The conventional evaluation criteria are used, such as Net Present Value (NPV) and the Internal Rate of Return (IRR). The IRR is a discount rate that makes the project's net present value of costs and benefits equal to zero. The RED model is also used to compare costs, benefits and economic efficiency among different rehabilitation options, in order to ensure that each of the selected interventions is most cost effective over the project life. The following sections describe major parameters and assumptions used in the analysis.

Traffic Forecasts

5. Traffic data derived from the ANE traffic counting system and the latest annual average daily traffic (AADT) figures are used for the individual road segments (see Table 7-4). Based on the traffic data for the last 5 years, the average traffic growth rates are 5.3 to 6.7 percent. Thus, the annual growth rates are assumed to be 7.3 percent (taking into account the actual and projected increase in the GDP of the country and the impact of the Heavy sands (sic) project that is going to be implemented shortly in that area) for the first 10 years and 5.6 percent for the rest of the years, respectively.

6. In addition, the induced traffic of 2 percent is also assumed in the economic analysis, given the strong demand increase for mobility that has been observed around the project areas in recent years.

Road Construction and Maintenance Costs

7. The financial costs for the proposed interventions are shown in Table 7-1.The economic analysis should use economic costs of road construction, which can in theory be calculated by excluding all taxes, duties and subsidies, and applying shadow prices to reflect the real resource costs to the economy. Taxes, duties and subsidies are merely transfer payments within the domestic economy. Therefore, they have no effect on economic opportunity or resource costs. Shadow prices take into account any distortions in the domestic economy that may be caused by imperfection in the resource markets, particularly in the labor markets. Using a rule of thumb, the economic costs for the present study are assumed to be 80 percent of financial costs.

8. Road maintenance costs are calculated by the RED model, which includes required routine maintenance costs (ongoing, recurrent maintenance expenditures on an annual basis).

Table 7-1: Estimated financial intervention costs for each road

S. No	Name of the Road	Details of planned woks	Civil Works Estimated Values (10^3*USD)
1	N/C: 3 de Fevereiro/CrzN220 (17.6 km)	Resurfacing or treatment of existing roadway, surface patching and restoration of culvert.	3,676.6
2	R454-Mapapa/Chilembene (17.24 km)	Major re-gravelling, ripping, re-compaction and drainage improvement.	10,343.8
3	R859: Chilembene/Maniquenique (34 km)	Major re-gravelling, ripping, re-compaction, localized repairs, edge breaks repairs and drainage improvement.	8,437.0
4	R890: Chókwè/Guijá (3.36 km)	Reconstruction of drainage structures and fills of the embankment. Full re-gravelling and compaction.	1,669.7
5	R448: Chókwè/Macarretane (25.26 km)	Resurfacing or treatment of existing roadway, surface patching and localized repairs.	6,318.3
6	N220: Chissano/Chibuto (39.09 km)	Major re-gravelling, fill of erosions, resurfacing or treatment of existing roadway, surface patching, shape correction, restoration of skid resistance, installation of new culverts and box culvert. Fill of abutments, reconstruction of bridges.	31,085.1
7	N221-Chibuto /Guijá (59.56 km)	Major re-gravelling, fill of erosions, resurfacing or treatment of existing roadway, reconstruction of abutments and reconstruction of the bridge.	57,708.2
	Sub-Total (Rounded Figure)		119,238.7 **US$120.0 million**
	Physical and Financial Contingencies (20%)		**US$24.0 million**
	Supervision Cost		**US$5.0 million**
	TOTAL		**US$149.0 million**

Vehicle Operating Costs

9. Vehicle operating costs (VOC) represent a critical parameter in the estimation of the benefits between the 'with project' and 'without project' cases. The VOC comprise the major part of transport cost savings due to road construction and upgrading projects.

10. The main vehicle operating cost input parameters for each of the vehicles identified as part of the so-called Mozambican vehicle fleet are shown in Table 7-2.

Table 7-2: Summary of VOC input data

	Car	Pickup	Minibus	Bus	Medium truck	Heavy truck	Artic truck
Basic Characteristics							
Fuel type	Petrol	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Equivalent dimension	1.0	1.0	1.2	1.5	1.8	2.5	3.0
Number of axles	2	2	2	2	2	4	6
Size of tire	175/13	185/14	195/15	700/16	700/16	11000-20	11000-20
Number of tires	4	4	4	6	6	14	22
Number of tire retreads	1	1	1	1	1	1	1
Operating weight (tones)	1.2	1.5	1.5	6	7.5	24	40
Equivalent standard axle factor	0	0	0	1.5	2.2	3.0	4.0
Vehicle Utilization							
Service life (years)	10	9	7	7	9	10	10
km driven per year	20,000	25,000	70,000	68,000	35,000	80,000	85,000
hours driven per year	600	700	2,300	2,300	800	2,400	2,500
Number of passengers/vehicle	3	3	12	28	4	1	1
Proportion of working trips	0.3	0.75	0.2	0.2	1	1	1
Proportion of non-working trips	0.7	0.25	0.8	0.8	0	0	0
Economic costs							
New vehicle (USD)	19,921	29,311	47,120	65,905	43,060	100,189	123,122
Tire (USD/tire)	52.7	68.4	91.9	146	146	198.7	198.7
Retread tire (% new)	30%	30%	30%	30%	30%	30%	30%
Maintenance Labor (USD/hour)	2.60	2.60	2.60	2.60	2.60	2.60	2.60
Crew (USD/hour)	0.28	0.83	1.33	1.33	1.33	1.33	1.33
Overheads (USD/year)	604	945	1,806	2,526	1,650	3,840	4,719
Passenger time (USD/hour)	0.26	0.42	0.22	0.22	0.51	0.51	0.51
Fuel (USD/liter)	1.42	1.20	1.20	1.20	1.20	1.20	1.20
Lubricants (USD/liter)	5.40	5.40	5.40	5.40	5.40	5.40	5.40

Economic Viability

11. Based on the assumed Vehicle Operating Costs (VOC) for Mozambique, estimated costs, traffic and other parameters, the economic internal rate of return (EIRR) was calculated using RED with a project life of 20 years assumed. The EIRR results are presented in the table below. The estimated EIRR range from 24 percent to 44 percent, well above the conventional threshold. The total program is expected to generate a return of 32 percent.

Table 7-3: AADT and EIRR results from RED

S. No	Name of the Road	AADT	EIRR (%)
1	N/C: 3 de Fevereiro/CrzN220 (17.68 km)	471	30
2	R454-Mapapa/Chilembene (17.24 km)	459	24
3	R859: Chilembene/Maniquenique (34 km)	429	30
4	R890: Chókwè/Guijá (3.36 km)	1062	34
5	R448: Chókwè/Macarretane (25.26 km)	987	44
6	N220: Chissano/Chibuto (39.09 km)	903	27

7	N221-Chibuto /Guijá (59.56 km)	909	34
Total program		**5220**	**32**

Sensitivity Analysis

12. To examine robustness of the estimated results against unexpected changes in the parameters assumed, the sensitivity analysis is carried out. It examines the potential impact of a 20 percent increase in investment costs and a 20 percent decrease in traffic growth. The result indicates that this alternative scenario would result in reducing NPV from US$87.7 million to US$53 million and reducing the overall program EIRR from 32 percent to 23 percent. Still, the rate of return is well above a norm of 12 percent, confirming robustness of economic viability of the project.

Table 7-4: Sensitivity Analysis: EIRR and NPV

		Normal traffic/cost		**20% traffic decrease/20% cost increase**	
S. No	**Name of the Road**	**NPV (M$)**	**EIRR (%)**	**NPV(M$)**	**EIRR (%)**
1	N/C: 3 de Fevereiro/CrzN220 (17.68 km)	5.070	30	3.008	22
2	R454-Mapapa/Chilembene (17.24 km)	3.429	24	1.489	17
3	R859: Chilembene/Maniquenique (34 km)	6.835	30	4.025	22
4	R890: Chókwè/Guijá (3.36 km)	2.791	34	1.708	24
5	R448: Chókwè/Macarretane (25.26 km)	17.082	44	11.819	33
6	N220: Chissano/Chibuto (39.09 km)	17.116	27	8.978	19
7	N221-Chibuto /Guijá (59.56 km)	35.425	34	22.002	24
Total Program		**87.749**	**32**	**53.029**	**23**

ANNEX 8. FLOOD RESPONSE TEAM STRUCTURE

MOZAMBIQUE: Roads and Bridges Management and Maintenance Program - Phase 2 – the Third Additional Financing

1. The Government of Mozambique has set up a Flood Response Team (FRT) through Decree nº 55/2013 of November 06, 2013. FRT is primarily vested with the responsibility of implementing the emergency works program supported by RBMMP2 and headed by a senior ANE Director. The head of FRT reports to the Director General of ANE. Amongst other tasks, FRT is tasked to:

a) Ensure the execution of necessary designs;
b) Carry out the procurement for emergency works;
c) Manage the program related services and civil works contracts;
d) Ensure the fulfillment of contractual obligations and monitor their execution;
e) Ensure the implementation of social and environmental regulations on the works;
f) Guarantee the financial control of the emergency program;
g) Monitor the fulfillment of Mozambican Law on the implementation of the emergency works; and
h) Prepare the progress reports of the program;

2. Currently, the Flood Response Team is fully engaged in the implementation of the World Bank supported Emergency Works Program in Gaza Province. ANE plans to expand the scope of activities, if considered necessary, to cover other emergency works. FRT is supported by a Technical Support Group (TSG). TSG comprises of senior consultants including a Contract management and administration specialist, a Highway design engineer, a Structural engineer, and a Procurement specialist. In addition, TSG may be required to bring in short-term experts in areas of specific engineering skills, as well as training specialists to assist in the Capacity Building program.

3. TSG is integrated within the Flood Response Team to provide technical support to ANE in the reconstruction of roads and bridges in Gaza Province.

<u>Role and responsibilities of FRT members</u>

<u>Road Sector Staff:</u>

- Director is based in Maputo. He has overall responsibility for ensuring the effective implementation of the emergency works program.

- Procurement Officer: is also based in Maputo. He is responsible for all procurement activities.

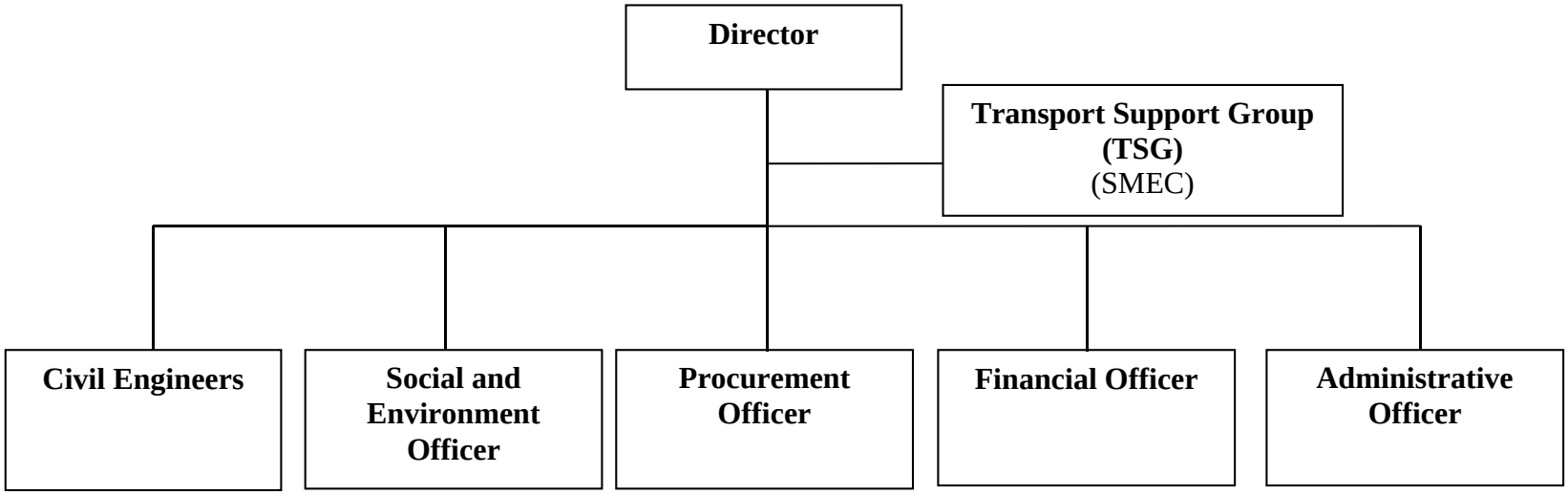
- Civil Engineers: The engineers are based in Maputo during the preparation phase. During the execution of the works they will be based in ANE's provincial delegation in Gaza and will be responsible for day-to-day coordination with the consultants and contractors working under the project.

- Environmental and Social Safeguards Officer: This officer is based in Maputo during the preparation phase. During the execution of the works he will be based in ANE's provincial delegation in Gaza. He is responsible for ensuring that the environmental safeguards are duly complied during the preparation and the implementation stages.

- Financial Officer: Based in Maputo, he will exercise the financial control of the emergency works program.

- FRT will be supported by other administrative staff as necessary.

ORGANOGRAM OF FLOOD RESPONSE TEAM



ANNEX 9: MAP OF EMERGENCY-RELATED WORKS IN GAZA PROVINCE