



PROJECT: MULTINATIONAL: NACALA ROAD CORRIDOR - PHASE II

PROJECT APPRAISAL REPORT

Date: September 2010

Appraisal Team	<p>Team Leader: L. Weidner, Transport Economist, OITC.2 Team Members: P. Opoku-Darkwa, Transport Engineer, OITC.2 N. Kulemeka, Socio-Economist, OITC.2 N. Jere, Procurement Specialist, ZMFO C. Lozano, Trade Regulatory Expert, ONRI.2</p> <p>Sector Director: G. Mbeshherubusa Regional Integration And Trade Director: A. Rugamba Regional Director: F. Black Sector Manager: J. Rwamabuga Country Manager: F. Kwesiga</p>
Peer Reviewers	<p>M. Wa-Kyendo, Transport Engineer, OITC. 2 M. Benard, Transport Economist, OITC.1 K. I. Mfalila, Environmental Specialist, OSAN A.O. Ojo-Fajuyi, Financial Management Specialist, ORPF.1</p>



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Currency Equivalents

As of March 2010

1 UA	=	1 SDR
1 UA	=	7127 Kwacha (ZMK)
1 UA	=	1.13 Euro
1 US	=	4650 Kwacha (ZMK)

Fiscal Year

January 1 – December 31

Weights and Measures

1 metric tonne	=	2204 pounds (lbs)
1 kilogramme (kg)	=	2.200 lbs
1 metre (m)	=	3.28 feet (ft)
1 millimetre (mm)	=	0.03937 inch (")
1 kilometre (km)	=	0.62 mile
1 hectare (ha)	=	2.471 acres

Acronyms and Abbreviations

AC	Asphalt Concrete	NRFA	National Road Fund Agency
AfDB	The Bank Group	NRCP	Nacala Road Corridor Project
ADF	African Development Fund	NRCP, Phase II	360 km of rehabilitation works on NRCP from Luangwa to Mwami in Zambia
ADT	Average Daily Traffic	OFID	OPEC Fund for International Development
AIDS	Acquired Immune Deficiency Syndrome	PAC	Public Accounts Committee
ARAP	Abbreviated Resettlement Action Plan	PAP	Project Affected People
BADEA	Arab Bank for Economic Development of Africa	PBM	Performance Based Maintenance
CBO	Community Based Organization	PID	Project Implementation Document
CRN	Core Road Network	PIU	Project Implementation Unit
CSP	Country Strategy Paper	PRBS	Poverty Reduction Budget Support
DANIDA	Danish International Development Agency	Project	114.7 km from Nyimba-Sinda in Zambia of rehabilitation works of the NRCP, Phase II
DPs	Development Partners	PRSP	Poverty Reduction Strategy Paper
DBST	Double Bitumen Surface Treatment	RAP	Resettlement Action Plan
EIB	European Investment Bank	REC	Regional Economic Communities
EIRR	Economic Internal Rate of Return	RED	Road Economic Decision (RED) Model
ESAP	Environmental and Social Assessment Procedures	RDA	Road Development Agency
ESIA	Environmental and Social Impact Assessment	RFP	Request for Proposals
ESMP	Environmental and Social Management Plan	RO	Regional Operations
EU	European Union	ROADS IP	Road Sector Investment Programme
FNDP	Fifth National Development Programme	RSDG	Road Sector Donor Group
GPN	General Procurement Notice	RTSA	Road Traffic and Safety Agency
GRZ	Government of Zambia	RTRN	Regional Trunk Road Network
ICB	International Competitive Bidding	SADC	Southern African Development Community
JASZ	Joint Assistance Strategy for Zambia	SC	Steering Committee
JICA	Japan International Co-operation Agency	SFD	Saudi Fund for Development

KFAED	Kuwait Fund for Arab Economic Development	SDI	Spatial Development Initiative
KFW	Kreditanstalt für Wiederaufbau	SNDP	Sixth National Development Plan
MoFNP	Ministry of Finance and National Planning	SPN	Specific Procurement Notice
MCT	Ministry of Communication and Transport	STI	Sexually Transmitted Infection
MWS	Ministry of Works and Supply	UA	Unit of Account
NEPAD	New Partnership for Africa's Development	VOC	Vehicle Operation Cost
NDF	Nordic Development Fund	WB	World Bank
NGO	Non-Government Organization	Zambia	Republic of Zambia
NPV	Net Present Value	ZMFO	Zambia Field Office

Loan Information

Client's information

BORROWER: Republic of Zambia

EXECUTING AGENCY: Road Development Agency

Financing plan

Source	Amount (UA)	Instrument
ADF	UA 69,369,000	Loan
Government of Zambia	UA 102,000	Counterpart
TOTAL COST	UA 69,471,000	

ADF's key financing information

Loan currency	Unit of Account (UA)
Interest type	Not Applicable
Interest rate spread	Not Applicable
Service Charge	0.75% on amount disbursed and outstanding
Commitment fee	0.50% on the un-disbursed loan amount
Tenor	50 years
Grace period	10 years
NPV (base case) (Section 2)	Euro 9.39 million
NPV (base case) (Section 3)	Euro 7.35 million
EIRR (base case) (Section 2)	15.29%
EIRR (base case) (Section 3)	15.83%

Timeframe - Main Milestones (expected)

Concept Note approval	May 2010
Project approval	September 2010
Effectiveness	November 2010
Last Disbursement	March 2015
Completion	March 2016
Last repayment	November 2060

PROJECT SUMMARY

Project Overview

The Nacala Road Corridor Project (NRCP) aims at supporting economic growth in the Southern African Development Community (SADC) and foster regional integration through reliable, efficient and seamless transport infrastructure that increases subregional trade and the global competitiveness of the region. NRCP, which covers about 1,033 km of roads in Zambia, Malawi and Mozambique and two one-stop border posts, is being implemented in three Phases. In June 2009, AfDB approved Phase I, comprising 348 km in Mozambique and 13 km in Malawi. Phase II covers 360 km of road works in Zambia from Luangwa to Mwami. Phase III, for which preparatory works are currently being undertaken, includes works in Malawi and Mozambique, as well as construction of two one-stop border posts.

The Project covers a subset of rehabilitation to Asphalt Concrete standard of 114.7 km of NRCP, Phase II. The total cost of the Project is UA 69.471 million. The European Union (EU) and the European Investment Bank (EIB) are providing funding for rehabilitation of about 162.8 km of NRCP, Phase II, the cost of which are estimated at EUR 112 million. Thus, about 277.5 km or about 77% of the funding of NRCP Phase II is currently in place. The Government of Zambia (GRZ) is in the process of identifying alternative funding sources for the remaining 82.5 km (23%). The expected outcomes of the Project include (i) reduced transport cost and improved accessibility of communities to social services and markets; and (ii) improved road safety. The development of the Nacala Road Corridor will enable increased volume of Zambian exports utilizing the Nacala Port and will expand market sizes beyond national boundaries. The Project will also contribute to poverty reduction in Zambia by improving accessibility of communities to markets and social services. The Project includes design measures and awareness campaigns that will result in improved road safety.

Needs Assessment

The development of NRCP is a high priority regional integration project aimed at tapping the trade potential of Zambia, Malawi and Mozambique and ensuring global connectivity for Zambia and Malawi. The implementation of NRCP and the Project will contribute to improving transport infrastructure and facilitating (i) regional trade among Zambia, Malawi and Mozambique thus offering a diversification opportunity for the region to develop subregional trade; and (ii) access to global markets for Zambia and Malawi.

AfDB's Added Value

The rationale for AfDB's involvement is threefold: (i) AfDB is already involved in the financing of NRCP Phase I and the project preparatory work for Phase III. (ii) The objective of the Project is to address regional development constraints caused by poor infrastructure and is in line with AfDB's Medium Term Strategy (2008-2012); and (iii) is also central to the strategic objective of providing investment and knowledge to facilitate delivery of priority regional infrastructure as per the Bank Group Regional Integration Strategy (2009-2012).

Knowledge Management

The Project adds to AfDB's growing knowledge on implementation of regional transport corridors. Project preparation has been undertaken in close cooperation with the EU and EIB under a "one-project" approach to ensure maximum complementarities among interventions. The effective team work established among the three institutions offers best practice examples for future regional co-financed projects.

MULTINATIONAL: NACALA ROAD CORRIDOR-PHASE II - Results Based Logical Framework

Hierarchy of Objectives	Expected Results	Reach	Performance Indicators Source Method	Indicative Targets Timeframe	Assumptions/ Risks
<p>1. Sector Goal</p> <p>1.0 To support economic growth in SADC and foster regional integration through reliable, efficient and seamless transport infrastructure that increases subregional trade and the global competitiveness of the region.</p>	<p>Long Term Outcomes</p> <p>1.1 Improved links between ports and major centers of economic activity.</p> <p>1.2 Increased participation in regional and international trade.</p>	<p>Beneficiaries</p> <ul style="list-style-type: none"> SADC population, mainly comprising Malawi, Mozambique and Zambia. 	<p>Indicators</p> <p>1.1 % increased participation in regional and international trade.</p> <p>Sources: SADC Secretariat Information System. Methods: Statistics from member states.</p>	<p>Targets</p> <p>1.1 Import/export cargo handled at Nacala Port increased from 0.9 million tons per year in 2009 to 1.6 million tons per year by 2015.</p> <p>1.2 Global competitiveness, 2nd pillar on infrastructure index improved from 2.6 in 2010 to 3.6 in 2015 for Zambia.</p>	<p>Assumption</p> <ul style="list-style-type: none"> Political will to regional integration of SADC countries is maintained.
<p>2. Objectives</p> <p>2.0 Through improved road infrastructure: (i) provide Zambia, Malawi and Mozambique with improved road transport infrastructure to Nacala Port; and (ii) improve accessibility of the communities in the Project's zone of influence to markets and social services.</p>	<p>Medium Term Outcomes</p> <p>2.1 Reduced transport cost and improved accessibility of communities to social services and markets.</p>	<p>Beneficiaries</p> <ul style="list-style-type: none"> Transport industry. Export/import industry and freight operators, in particular copper, cotton and sugar exporters. Business community and population along the corridor. 	<p>Indicators</p> <p>2.1.a VOC savings and travel time cost.</p> <p>2.1.b Average speed for goods and passengers along the transport corridor</p>	<p>Targets</p> <p>2.1.a.1 Composite vehicle operating costs per veh-km reduced by 20% for medium sized trucks from EUR 0.994 per veh-km in 2009 to EUR 0.798 per veh-km in 2013. For private cars, the VOC reduced by 13% from EUR 00.342 per veh-km in 2009 to EUR 0.297 per veh-km in 2013.</p> <p>2.1.a.2 Average travel time cost for both normal and deviated travel reduced by 20% for medium sized trucks from EUR 0.035 per veh-km in 2009 to EUR 0.028 per veh-km in 2013. For private cars the average reduction in travel time cost is 25% from EUR 0.024 per-veh-km in 2009 to EUR 0.018 per veh-km in 2013.</p> <p>2.1.b.1 Average speed for medium sized trucks increased by 25.4% from 56.7 km/h in 2009 to 71.1 km/h in 2013 on the road section from Nyimba to Sinda. Average speed for passenger cars increased by 37.9% from 68.5 km/h in 2009 to 94.5 km/h in 2013¹.</p>	<p>Risks</p> <ul style="list-style-type: none"> Current political commitment is maintained in Zambia. <p>Mitigation measures</p> <ul style="list-style-type: none"> The three countries are committed to the Project as demonstrated through their allocation of ADF XI resources. <p>Assumption:</p> <ul style="list-style-type: none"> Governance risks are successfully mitigated through (i) Project Design; including the assistance included under the Institutional Support and Capacity Building component; and

¹ For section 2 (Nyimba to Petauke (67.7 km)), travel time will be reduced from 00.59 minutes in the "without Project" scenario to 00.42 min in the "with Project" scenario for a passenger car. On the same section, travel time for a medium sized truck will be reduced from 1 hour 11 min in the "without Project" scenario to 00.57 min in the "with Project" scenario. For section 3 (Petauke to Sinda (40 km)), travel time will be reduced from 00:41 minutes in the "without Project" scenario to 00.29 min in the "with Project" scenario for a passenger car. On the same section, travel time for a medium sized truck will be reduced from 00.49 min in the "without Project" scenario to 00:39 min in the "with Project" scenario.

	2.2 Improved road safety.		<p>2.2.a Annual number of road accidents on NRCP, Phase II.</p> <p>2.2.b Annual number of road fatalities on NRCP, Phase II.</p> <p>Sources: SADC Statistics, Customs in the three countries. Methods: Statistics from member countries, corridor surveys and household expenditure surveys.</p>	<p>2.2.a Number of road accidents on NRCP Phase II, reduced by 42.87% (from 1072 accidents in 2009 to 929 accidents in 2013).</p> <p>2.2.b Annual number of road fatalities reduced by 42.40% (from 83 fatalities in 2009 to 72 fatalities in 2013.)</p> <p>Sources: SADC Statistics, Customs in the three countries., Police and Ministries of Transport on accidents data. Methods: Statistics from member countries and corridor surveys.</p>	(ii) the road sector action plan to agreed upon between the Government and Development Partners.
<p>3. Activities</p> <p>3.1 Road Construction, including civil works for rehabilitation of the Nyimba to Sinda, or 114.7 km of the entire 360 km Project Road from Luangwa-Chipata-Mwami border road (360km) in Zambia; compensation and resettlement of Project Affected People; and ESMP implementation and tree planting.</p>	<p>Short Term Outputs</p> <p>3.1.1 114.7 km rehabilitated road to Asphalt Concrete standards between Nyimba and Sinda to 6.8 m carriageway and 2x1.5 m shoulders.</p> <p>3.1.2 Project affected persons (PAP) fully relocated and compensated timely in accordance with the RAP and ESMP fully implemented.</p> <p>3.1.3 Communities sensitized on protecting catchment areas from erosion and 20-25 hectares (ha) of trees planted.</p>	<p>Beneficiaries</p> <ul style="list-style-type: none"> Local, regional and international contractors and consultants. Export/Import industries. Construction workers and road users. Local Communities along the corridor zone of influence. 	<p>Indicators</p> <p>3.1.1.a Length of rehabilitated road</p> <p>3.1.1.b Service levels of road over design life and road condition.</p> <p>3.1.1.c Road network condition in the area of Project intervention.</p> <p>3.1.1.d Employment opportunities for local citizens.</p> <p>3.1.2. Completion of compensation and resettlement payments.</p> <p>3.1.3 Completion of environmental enhancement activities and area of trees planted.</p>	<p>Targets</p> <p>3.1.1.a 114.7 km of road completed and opened to traffic by 15 September 2013.</p> <p>3.1.1.b Condition of Project road improved from IRI 7.0 in 2009 to IRI 2.0 in 2013.</p> <p>3.1.1.c Percentage of the road network in good condition in Eastern Province increased from 15% in 2009 to 55% in 2013.</p> <p>3.1.1d At least 50 people from local community will be employed on a monthly basis during construction, out of which 20% will be women. During operation and maintenance, an estimated 30 persons from the local community will be employed on a monthly basis, out of which 10% will be women.</p> <p>3.1.2. Full resettlement restoration and compensation by 2011.</p> <p>3.1.3 20 ha of trees planted on the Project road by September 2013.</p>	<p>Risks</p> <ul style="list-style-type: none"> Timely fulfilment of loan conditions and implementation according to appraisal schedule. Project costs within appraisal estimates. <p>Mitigation measures</p> <ul style="list-style-type: none"> Follow-up by ZMFO will ensure timely compliance. Contingencies have been built into Project cost and advance Contracting will be utilized to fast track implementation.

<p>3.2 Road Safety and other Project enhancing measures. including HIV/AIDS/STI and TB mitigation; and Gender Component comprising gender sensitization, portable water points and capacity building of Community Based Organizations.</p>	<p>3.2.1 Construction workers and local communities sensitized and fully informed about Road Safety and HIV/AIDS.</p> <p>3.2.2 Communities sensitized on gender</p> <p>3.2.3 Provision of potable water for community use.</p>		<p>3.2.1.a Number of construction workers reached with HIV/AIDS activities.</p> <p>3.2.1.b Number of communities reached with Road Safety and HIV/AIDS campaigns</p> <p>3.2.1.c Number of schools reached with Road Safety and HIV/AIDS prevention and awareness campaigns.</p> <p>3.2.2 Number of communities sensitized on gender.</p> <p>3.2.3 Number of water points/boreholes drilled.</p> <p>3.3.1.a RDA staff adequately skilled in procurement and contract management.</p> <p>3.3.1.b RDA Contract Management Manual developed</p>	<p>3.2.1.a HIV/AIDS activities to reach all construction workers and 20% peer educators identified and trained for the civil works contract and campsites by 2014.</p> <p>3.2.1.b Road Safety and HIV/AIDS activities to reach at least 9 communities by 2014.</p> <p>3.2.1.c Road Safety and HIV/AIDS activities to reach 22 primary and secondary schools along the road by 2014.</p> <p>3.2.2 At least 3 communities (linked to campsites) sensitized on gender by 2011.</p> <p>3.2.3 At least 9 water points/boreholes drilled for community use by 2013.</p> <p>3.3.1.a 90% of RDA staff in regional offices having procurement related job responsibilities have passed the procurement test by August 2011. 90% of RDA staff in HQ having job responsibilities related to contract management have passed the contract management test by January 2013.</p> <p>3.3.1.b RDA Contract Management Manual in use by January 2013.</p>																																					
<p>3.3 Institutional Support and Capacity Building component (ISCB) Component.</p> <p>Project Inputs in UA</p> <table border="0"> <tr><td>Civil works:</td><td>52.77 million</td></tr> <tr><td>Supervision:</td><td>2.92 million</td></tr> <tr><td>Road Safety:</td><td>0.08 million</td></tr> <tr><td>HIV/AIDS, STI , TB:</td><td>0.14 million</td></tr> <tr><td>ESMP implementation and</td><td></td></tr> <tr><td>Tree Planting:</td><td>0.03 million</td></tr> <tr><td>Gender:</td><td>0.06 million</td></tr> <tr><td>Audit:</td><td>0.09 million</td></tr> <tr><td>Institutional Support</td><td>1.15 million</td></tr> <tr><td>Resettlement and</td><td></td></tr> <tr><td>Compensation :</td><td>0.08 million</td></tr> <tr><td>Base Cost :</td><td>57.335 million</td></tr> <tr><td>Physical contingencies:</td><td>5.734 million</td></tr> <tr><td>Price escalation:</td><td>6.402 million</td></tr> <tr><td>Total Project Costs:</td><td>69.471 million</td></tr> </table> <p>Sources of Financing (UA)</p> <table border="0"> <tr><td>ADF Loan:</td><td>UA 69.369 million</td></tr> <tr><td>GRZ:</td><td>UA 0.102 million</td></tr> <tr><td>Total</td><td>UA 69.471 million</td></tr> </table>	Civil works:	52.77 million	Supervision:	2.92 million	Road Safety:	0.08 million	HIV/AIDS, STI , TB:	0.14 million	ESMP implementation and		Tree Planting:	0.03 million	Gender:	0.06 million	Audit:	0.09 million	Institutional Support	1.15 million	Resettlement and		Compensation :	0.08 million	Base Cost :	57.335 million	Physical contingencies:	5.734 million	Price escalation:	6.402 million	Total Project Costs:	69.471 million	ADF Loan:	UA 69.369 million	GRZ:	UA 0.102 million	Total	UA 69.471 million	<p>3.3.1 RDA's capacity to procure and implement road projects is enhanced.</p>	<ul style="list-style-type: none"> • RDA 	<p>Sources/Methods: Quarterly Reports, AfDB Quarterly Reports, AfDB Supervision Reports, Audit Reports and, Mid Term Review Reports.</p>	<p>Sources/Methods: Quarterly Reports, AfDB Supervision Reports, Audit Reports, and Mid Term Review Reports.</p>	
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PROJECT TIMEFRAME

	2010					2011					2012					2013					2014																		
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
Institutional Support and Capacity Building																																							
General Procurement Notice	█																																						
EOI – Prep, Issuance and Evaluation	█																																						
RFP – Preparation & Issuance	█																																						
valuation of proposals	█																																						
Negotiation & Contract Award	█																																						
Commencement of ISCB Services											32 m																												
ISCB Component 1 -BDs & Contract Management																																							
1.1 Preparation of BDs						2 m																																	
1.2 Assistance to Tender process and award of contract						6 m																																	
1.3 Assistance to Contract Management																24 m																							
ISCB Component 2 - Design of PPMS																																							
2.1 Baseline survey						4 m																																	
2.2 Mid-term survey																																							
2.3 Final survey upon completion of civil works																					█																		
ISCB Component 3-Project Management Capacity Building																																							
3.1 Preparation of BDs &Procurement																																							
Review/access needs of existing methodologies						1.5 m																																	
Develop/Implement procurement training program						4.5 m																																	
Implement Test																																							
3.2 Contract Management including Cost Control																																							
Review and access needs of existing methodologies																12 months																							
Develop Contract Manual																7 m																							
Develop/ Implement procurement training program																					3 m																		
Implement Test																					█																		
	2010					2011					2012					2013					2014																		
Supervision Services	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
General Procurement Notice	█																																						
EOI – Prep, Issuance and Evaluation						2 m																																	
RFP – Preparation & Issuance						█																																	
Evaluation of proposals						3 m																																	
Negotiation & Contract Award																																							
Commencement of Services																27 m					Defects Liability Period – 24 months																		
	2010					2011					2012					2013					2014																		
Civil Works	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
General Procurement Notice	█																																						
Tendering Preparation & Publication						3 m																																	
Bid Opening & Evaluation																																							
Negotiation & Contract Award																																							
Commencement of Services																24 m					Defects Liability Period -24 months																		

**REPORT AND RECOMMENDATION OF THE MANAGEMENT OF THE ADB GROUP TO THE BOARD
OF DIRECTORS ON A PROPOSED LOAN TO ZAMBIA FOR THE NACALA ROAD CORRIDOR PROJECT,
PHASE II**

Management submits the following Report and Recommendation on a proposed loan for UA 69.369 million to the Republic of Zambia to finance the Nacala Road Corridor Project, Phase II.

I. STRATEGIC THRUST & RATIONALE

1.1 Project Background

1.1.1 The Project road is an important section of the Nacala Road Corridor, which originates at the port of Nacala in Mozambique and ends in Lusaka, Zambia passing through Malawi. (See Map in Appendix IV). The Zambian section of the road from Luangwa to Mwami was constructed in the 1960s and early 1970s as a bitumen paved road and its design does not meet the requirements of a strategic multinational road corridor. The poor condition of the road, overloading and lack of maintenance has resulted in extensive deterioration of some road sections and high surface roughness levels, which are negatively impacting the service level of the Corridor. The geometric design of the road does not adequately address road safety and narrow road cross sections and lack of paved shoulders exacerbate the situation. Part of the first 232 km of the road from Lusaka was rehabilitated under the ADF funded First Road Project, which was approved in February 1990. In a letter dated 28 July 2008, Zambia requested AfDB to finance the road. Project preparatory work has been financed with funds from the European Union (EU).

1.2 Project linkages with Regional and Country Strategies and Objectives

1.2.1 The Nacala Road Corridor Project (NRCP) is in line with regional and national development strategies as well as with AfDB's assistance strategies. The NRCP is aligned with one of the priorities of the New Partnership for Africa's Development (NEPAD) which is the promotion of regional integration in the African continent as a means to overcoming the lack of economies of scale and the barriers to Africa's long term development. Bridging the infrastructure gap has been identified as an important element in promoting regional integration. The SADC Protocol on Transport, Communications and Meteorology requires Member States to cooperate in providing, operating and maintaining transport infrastructure which supports the provision of integrated transport services at regional and continental levels. For this purpose, a core road network referred to as the Regional Trunk Road Network (RTRN), has been agreed upon. The Nacala Road Corridor is designated as Route 20 of the RTRN and is a priority SADC project. Mozambique, Malawi and Zambia have, with support from the SADC secretariat, established a Spatial Development Initiative (SDI), to enhance subregional cooperation within the SADC framework. The SDI has identified Development Corridors to enhance economic activity. The Nacala Corridor is among the transport corridors identified for this purpose.

1.2.2 The Transport Policy of 2002, which was the first of its kind in Zambia, was prepared based on the recognition that the lack of a coherent policy framework to assess the requirements for development of the transport sector in tandem with other sectors of the economy was a major impediment to economic growth. The policy highlights the importance of the road sector, which transports more than 80% of people and goods, within the overall transport system. The Poverty Reduction Strategy of Zambia (PRSZ 2006-2010) acknowledges high transport cost as a major impediment to ensuring the competitiveness of Zambia exports. The PRSZ also establishes that the primary goal for interventions in transport is to support overall economic growth. Rehabilitation and maintenance of Zambia's extensive road network is identified as one of the key sector

problems to be addressed. The Fifth National Development Plan (FNDP) 2006-2010 acknowledges the existence of a strong and sustainable infrastructure as a core condition for ensuring an enabling environment and identifies strengthening of economic infrastructure as one of the critical vehicles for the realization of its objectives². FNDP highlights both accessibility and the importance of reducing transport cost to ensure that Zambia's mineral wealth and agricultural potential can be fully exploited. Also the National Long Term Vision 2030 (NLTV 2030), whose objective is to ensure that Zambia becomes "a prosperous middle income country by the year 2030", outlines a strategy for the development of infrastructure as a base condition for economic growth. To operationalize these strategies, the Government developed a Road Sector Investment Program (ROADSIP) in 1995 to prioritize capital and maintenance interventions in the road sector. Based on the objectives of ensuring (i) Zambia's access to international markets through connection to the Indian Ocean; and (ii) Eastern Province's access to Lusaka, the proposed Project road from Luangwa to Mwami is a priority Project under the ROADSIP II (2004-2013)³.

1.2.3 The Joint Assistance Strategy for Zambia (JASZ 2007-2010) prepared between Zambia and 16 Development Partners is aligned to the FNDP. JASZ is based on two pillars of interventions with Pillar I being Support to Infrastructure Development. The Project is developed within the purview of Pillar I. The Project outcomes will directly contribute to meeting Zambia's strategic objectives of reducing transport cost and enhancing accessibility to regional and national markets. All of the above regional and national strategies are in line with AfDB's Medium Term Strategy (2008-2012) which prioritizes support to infrastructure development as a key area for AfDB's future assistance, and is also central to the strategic objective of providing investment, technical assistance and knowledge to facilitate delivery of priority regional infrastructure as per the Bank Group Regional Integration Strategy (2009-2012).

1.3 Key Development Issues

1.3.1 Zambia, as a landlocked country, relies on transit through neighbouring countries to access sea ports and through them international markets. The majority of Zambia's exports are carried by road. There is no railway link from Lusaka to Malawi. NRCP, Phase II is the only transport link within Zambia to the Port of Nacala in Mozambique. Due to the current narrow, dangerous and rough conditions on the part of the Nacala Corridor which falls in Zambia, it is presently being used by operators who have no route choice. NRCP is essential in the regional and global distribution of mineral resources and agro-products originating from the three participating countries. An analysis of the trade structure and patterns determining commodity movements on the Corridor has been undertaken to assess the regional socio-economic benefits of the NRCP and NRCP, Phase II (Further details are in Annex A.2). In addition and with the proposed improvements the Nacala Road Corridor can not only help the two landlocked countries (Zambia and Malawi) diversify their transit partners but also contribute to greater regional trade and integration. In particular, links to Mozambique will help Zambia reduce transport costs since Nacala Port offers distance savings compared to other ports on the East coast of Africa.

² GRZ is in the process of preparing the Sixth National Development Plan (SNDP) (2011-2015). The Zero Draft SNDP of March 2010 maintains FNDPs' focus on infrastructure development and emphasizes the importance on Zambia's increasing association with local, regional and international bodies.

³ A comprehensive road sector action plan, which is to include a review of ROADSIP II is anticipated undertaken as an integral part of the ongoing sector dialogue with DPs, in particular as a result of the findings of the Auditor General's audit of RDA for the period from January 2006 to September 2009. The importance of NRCP, Phase II within the national planning framework is expected maintained under the revised road sector investment plan.

1.3.2 Zambia’s strategic location at the heart of Southern Africa makes the country exceptionally important in the establishment of a strong intra-regional market. The development of regional or subregional infrastructure that adequately connects national markets - particularly robust transport and communication links - is essential for the movement of goods, services, capital, people and information across countries. There is significant potential benefits to greater connectivity in Africa in terms of economies of scale, larger markets and greater cross-border economic transactions. In addition, “soft” issues like trade and transport regulatory frameworks, more efficient customs operations and the establishment of one-stop border posts to allow more efficient border crossing can significantly reduce trade transaction costs which results in increased volumes of trade and socio-economic gains. In this regard, two one stop border posts are envisaged under NRCP, Phase III between Zambia/Malawi and Malawi/Mozambique.

1.3.3 The implementation of NRCP and the Project will greatly contribute to improving transport infrastructure and facilitating (i) regional trade among Zambia, Malawi and Mozambique thus offering a diversification opportunity for the region to enhance subregional trade; and (ii) access to global markets for Zambia and Malawi. The creation of a strong subregional macro-economy based on trade among the three participating countries would help shelter the economies from external shocks resulting from volatility in global markets.

1.4 Rationale for Bank’s involvement

1.4.1 The rationale for AfDB’s involvement is threefold: (i) AfDB is already involved in the financing of NRCP Phase I and the project preparatory work for Phase III. The continued support by AfDB to the implementation of Phase II is therefore logical. (ii) The objective of the Project is to address regional development constraints caused by poor infrastructure and is therefore in line with AfDB’s Medium Term Strategy (2008-2012); and (iii) is also central to the strategic objective of providing investment and knowledge to facilitate delivery of priority regional infrastructure as per the Bank Group Regional Integration Strategy (2009-2012).

1.5 Donor Coordination

Sector or subsector*	Size		
	GDP	Exports	Labor Force
Transport	[%]	[%]	[%]
Players - Public Annual Expenditure (average 2006-2009)*			
	Government	Donors	
UA m	65.81	23.94	EU 15.17%
%	73.3%	26.6	IDA 5.13%
			DANIDA 2.93%
			NDF 2.4%
			OPEC 0.97%
			KFW 0.04%
Level of Donor Coordination			
	Existence of Thematic Working Groups		[Y]
	Existence of SWAPs or Integrated Sector Approaches		[N]
	ADB's Involvement in donors coordination		[M]

* Years 2006 to 2009, inclusive for the road sub-sector

1.5.1 Donor coordination among Development Partners (DPs) occurs through the Road Sector Donor Group (RSDG). The group, which meets monthly and quarterly in a Joint Donor Forum, is currently led by the EU. RSDG aims at harmonizing the approach taken by DPs with regards to institutional, policy and project specific financing and implementation matters. The group serves as a platform for interactions with GRZ to ensure that results and outcomes are achieved as per agreed indicators. Coordination of financing of ROADSIP II is through a 3-year rolling Medium-Term Expenditure Framework, which is discussed with the DPs. The major donors in the road sector are the EU, the World Bank (WB) (IDA), the Danish International Development Agency (DANIDA), and the Nordic Development Fund (NDF). This assistance does not cover urban roads, where Japan International Cooperation Agency (JICA) has contributed. Assistance from the EU has primarily focused on budget support combined with project specific financing, while WB financed assistance has centred on rehabilitation and maintenance of trunk and main roads. More recently, WB funded long term performance projects in the rural productive areas. The assistance from DANIDA is based on ROADSIP II and has mainly focused on feeder roads. DANIDA has also played a key role in building capacity of the Local Road Authorities. NDF has focused on the development of infrastructure in national parks and has provided support to reclassification work and road safety. In addition to these donors, GRZ has obtained funding from the Arab Bank for Economic Development of Africa (BADEA), Kuwait Fund for Arab Economic Development (KFAED), Saudi Fund for Development (SFD) and Opec Fund for International Development (OFID) for upgrading the Kalabo-Sikongo road. Together with OFID, BADEA is also providing funding for copperbelt feeder roads. Details of ongoing and planned projects in the sector are in Appendix III.

1.5.2 During the 2009 semi-annual road sector Joint Donor Forum it was brought to the attention of DPs that a significant financial overcommitment was made by Zambia in 2008 on ongoing road contracts that were financed through country resources. In response to the issue, Zambia, with the support of the EU, initiated a technical, financial and procurement audit in the sector. The audit was undertaken by the Auditor General and covered technical, procurement and financial aspects of RDA's activities for the period from January 2006 to September 2009. Shortcomings were identified in all areas investigated. The reports were made available to the public in mid-May 2010 and were the subject of a Public Accounts Committee (PAC) hearing. The PAC report was adopted by Parliament by end-July 2010. An action plan to address the issues emerging from the Auditor General's findings is being developed by the Government in close consultation with DPs and is to be agreed upon after conclusion of the PAC process. Prior to the release of the Auditor General's report, GRZ undertook a number of actions, including replacing key sector staff and dissolving the RDA and the NRFA Boards, which demonstrated its commitment to improve the sector situation and involve DPs in designing interventions that help address the issues identified in the Auditor General's reports. The Institutional Support and Capacity Building (ISCB) component of the proposed Project has been designed as an interim response to address the most urgent sector needs in response to the findings of the Auditor General's reports. The TOR is in Annex A.1.1. The Project also includes provision for technical audits to be undertaken throughout Project implementation to ensure that the lessons to be learned from the Auditor General's technical audit – particularly as they relate to the quality of the works – are fully addressed. The TOR is in Annex A.1.2. Medium and long term sector support initiatives are expected will be developed once a sector wide action plan has been agreed upon between GRZ and DPs.

1.5.3 Close coordination has taken place with other DPs throughout Project preparation. The Feasibility Study and Detailed Design reports for the 360 km road stretch of the Nacala Road Corridor in Zambia from Luangwa to Mwami have been prepared by EU funded consultants and reports have been shared with DPs interested in co-financing. One of the positive outcomes of AfDB's engagement with other DPs was the joint pre-appraisal/appraisal Mission between the EU,

EIB and AfDB undertaken in March 2010. The Mission led to the establishment of a close working relationship between the three institutions and enabled design of a parallel co-financing structure which provides funding for about 77% of the entire corridor within Zambia applying a “one-project” approach⁴. Also the response to the findings of the Auditor’s General’s reports has been closely coordinated with DPs and the ISCB component has been designed in close cooperation with the EU and EIB to ensure complementarities of interventions. Close cooperation has also been undertaken with JICA who is financing a preparatory survey for Nacala Port to determine its medium/long term development needs. JICA also participated actively in the financing of the NRCP, Phase I project.

II – PROJECT DESCRIPTION

2.1 Corridor Development Program and Phasing

2.1.1 The Nacala Road Corridor originates at Nacala Port on Mozambique and ends in Lusaka, Zambia traversing a total of about 1,710 km. The Government of Mozambique is currently undertaking studies for assessing the medium-long term development requirements of Nacala Port. The Port is the deepest natural harbour on the east coast of Africa and holds significant potential for competing with the ports of Durban and Dar-es-Salaam for Zambian exports.

2.1.2 The Project road is an important section of the NRCP, which was identified as a project for AfDB intervention in May 2007. NRCP covers about 1,033 km of road works along the Nacala Road Corridor and includes two one-stop border posts on the borders between Zambia/Malawi and between Malawi/Mozambique. NRCP is being implemented in three Phases. Phase I, comprising a 348 km road component in Mozambique and 13 km bypass in Malawi was approved by AfDB in June 2009. For the section in Mozambique, AfDB has issued a “no-objection” to the pre-qualification of civil works contractors and recruitment of consultants is ongoing. For the section in Malawi, pre-qualification is ongoing for the civil works. The consultancy services are undergoing technical and financial evaluation. Phase II covers 360 km of road works in Zambia from Luangwa to Mwami. The Project consists of a subset of 114.7 km of Phase II. Phase III, for which preparatory works are currently being undertaken, consists of 160 km of road works in Mozambique and 152 km of road works in Malawi and construction of two one-stop border posts. Activities being undertaken include detailed design and tender documents for the two road sections in Mozambique and Malawi, and the design and preparation of legal and regulatory framework for management of the one stop border posts. These activities are being financed under a NEPAD Infrastructure project Preparation (IPPF) Grant approved by AfDB in December 2009, with execution under the overall coordination of SADC Corridor Coordination Unit. It is envisaged that the detailed design and tender documentation for civil works under Phase III will be completed in the later half of 2011.

2.2 Project Development Objectives

2.2.1 The road sector goal is to support economic growth in SADC and foster integration through reliable, efficient and seamless transport infrastructure that increases the global competitiveness of the region. The objective of the Project is to provide Zambia, Malawi and Mozambique with improved road transport infrastructure to Nacala Port and improve accessibility of the communities in the Project’s zone of influence to markets and social services.

⁴ Under the “one-project” approach, co-financing DPs departed from the basis that the purpose of the individual interventions are to contribute to the rehabilitation of the entire NRCP, Phase II. This approach is reflected in the selection of road sections to be financed by each of the co-financing DPs (the joint EU/EIB package will finance sections 1, 4, 7 and 8 of NRCP, Phase II. The financing offered by EIB also includes provision of EUR 7 million for financing of civil works for the Dry Port in Chipata), the technical solutions applied, the harmonization of key performance indicators; the design of the ISCB component under the proposed Project, which is to be complemented by a TA facility prepared by EIB and financed by the EU-Africa Infrastructure Trust Fund (ITF)..

2.3 Project Components

2.3.1 As a subproject within the overall context of NRCP Phase II, the Project consists of the following components:

Table 2.1: Project Components

Nr.	Component name	Est. cost (UA) ⁵	Component description
1.	Road Construction Civil Works	52.77 million	<ul style="list-style-type: none"> Construction to Asphalt Concrete (AC) standard with 6.8 m carriage way and 2 x 1.5 m shoulders of the road sections between Nyimba to Petauke (67.7 km) and from Petuake to Sinda (47 km). The civil works will also include construction of three market sheds with sanitation and water provision and approximately 9 boreholes.
2.	Road Safety	0.085 million	<ul style="list-style-type: none"> Roads safety awareness and education campaigns targeting children, cyclists, pedestrians, especially women and bus operators.
3.	HIV/AIDS/STI and TB mitigation.	0.141 million	<ul style="list-style-type: none"> HIV/AIDS/STI and TB awareness and prevention programmes. The program will target construction workers, the communities along the Corridor and long-haul truck drivers.
4.	ESMP implementation and tree planting.	0.032 million	<ul style="list-style-type: none"> Environmental mitigation measures over and above those included in the Bill of Quantities, i.e. (i) off-road environmental protection activities; and (ii) complementary activities such as tree planting, water provision etc. It is estimated that 20 ha of trees will be planted under the Project.
5.	Gender component	0.064 million	<ul style="list-style-type: none"> Gender sensitization and capacity building of Community Based Organizations.
6.	Compensation and Resettlement of Project Affected People	0.085 million	<ul style="list-style-type: none"> Provision for adequate compensation and relocation/resettlement of Project Affected People identified in the ESIA.
7.	Consulting Services	3.010 million	<ul style="list-style-type: none"> Consulting services for Construction Supervision of Civil Works. Consulting Services for Project Technical and Financial Audit.
8.	Institutional Support and Capacity Development Component	1.15 million	<p>Consulting services for:</p> <ul style="list-style-type: none"> Preparation of Bidding Documents and Bid Evaluation assistance; as well as Contract Management assistance. Design of a Project Performance Monitoring System (PPMS) for Project impact monitoring. Enhancing RDA's Project Management capacity in (i) preparation of BDs and procurement; and (ii) contract management, including cost control.

2.3.2 The EU funded consultants evaluated several alternative design and maintenance strategies for the road. The recommended option is a 6.8 m asphalt concrete (AC) paved carriageway with 1.5 m sealed shoulders and 0.3 m gravel rounding between edge of sealed shoulder and side drains. This design was found to be technically, economically, and environmentally the most adequate solution. A Double Bitumen Surface Treatment (DBST) option was also evaluated in detail but was found to produce lower Economic Internal Rate of Return (EIRR) and Net Present Value (NVP) than the AC option. Due to its inherent significant maintenance savings, the AC option is fully in line with Zambia's sector wide efforts to bring the road network to a maintainable level. Finally, AC interventions have also been selected as the most appropriate technical solution for the sections to be financed by the EU and EIB. Similar interventions on all sections will provide economies of scale by facilitating the synchronization of both the civil works contracts and maintenance scheduling.

2.3.3 The scope for private sector participation in the financing of the Project was considered but not pursued due to the present and expected future traffic levels.

⁵ Cost excludes price and physical contingencies

Table 2.3: Project Alternatives Considered and Reasons for Rejection

Alternative name	Brief description	Reasons for rejection
DBST	Double Bitumen Surface Treatment (DBST) on 150 mm crushed stone base, on 200 mm cement stabilized sub-base, on two natural gravel selected layers of 200 mm and 250 mm each.	Not economically viable.

2.4 Project type

2.4.1 The ADF financing will support the construction and rehabilitation of identified economic and social infrastructure. The investments against which funds are to be disbursed are well defined and specific. The Project loan modality is considered the most appropriate instrument for AfDB's intervention.

2.5 Project Cost and Financing Arrangements

2.5.1 The Project cost estimate (net of taxes) is UA 69.471 million (EUR 78.503 million) of which the foreign exchange cost is UA 54.65 million (EUR 61.755 million) or 78.67% of the total, and the local cost is UA 14.821 million (EUR 16.748 million) or 21.33% of the total. The Project cost estimates are based on the Feasibility and Detailed Design studies of the Project as well as international norms and average unit prices for recruitment of high quality consulting firms and individual consultants for similar services. The Project cost estimates by component are summarized in Table 2.4. The expenditure schedule is summarised in Table 2.5.

Table 2.4: Project Cost Estimates by Component (Net of Taxes)

Components	UA (millions)			Euro (millions)			% FE
	Foreign Exchange	Local Currency	Total	Foreign Exchange	Local Currency	Total	
Civil works							
Nyimba-Petuake	25.334	6.333	31.667	28.627	7.157	35.784	80%
Petuake-Sinda	16.882	4.221	21.103	19.077	4.769	23.847	80%
Consultancy services for construction supervision	2.336	0.584	2.920	2.640	0.660	3.300	80%
Road Safety	0.068	0.017	0.085	0.077	0.019	0.096	80%
HIV/AIDS/STI and TB mitigation	0.113	0.028	0.141	0.128	0.032	0.160	80%
ESMP Implementation and Tree Planting	0.025	0.006	0.032	0.029	0.007	0.036	80%
Gender	0.051	0.013	0.064	0.058	0.014	0.072	80%
Audit Services	0.071	0.018	0.088	0.080	0.020	0.100	80%
Institutional Support	0.920	0.230	1.150	1.040	0.260	1.300	80%
Resettlement and Compensation	0.000	0.085	0.085	0.000	0.096	0.096	0%
<i>SubTotal</i>	1.248	0.397	1.645	1.410	0.448	1.859	
Base Cost	45.800	11.535	57.335	51.754	13.035	64.789	
<i>Physical Contingency (10%)</i>	4.580	1.153	5.734	5.175	1.303	6.479	
<i>Price Contingency (5% FE; 10%LC)</i>	4.270	2.133	6.402	4.825	2.410	7.235	
Total (Net of Taxes)	54.650	14.821	69.471	61.755	16.748	78.503	78.67%

Source: Detailed Design and AfDB Appraisal Mission, May 2010

Sub components cost and contingencies are rounded to the nearest UA 1,000

2.5.2 The proposed Project will be financed by the Fund and Zambia. Zambia has assigned significant resources (UA 33.386 million) from its country ADF allocation to the Project, i.e above the minimum requirement of 1/3. The resource allocation from the ADF-XI PBA Country Allocation constitutes 48% and the resource allocation from the ADF-XI regional operations (RO) 52% of total ADF Loan sources. In line with the recommendations of the 2008 Country Portfolio

Review for Zambia, GRZ has, in its letter of 24 May 2010, requested that counterpart funding requirements be reduced. In accordance with section 4.2.2 of AfDB's Policy on Expenditure Eligible for Bank Group Financing, revised version of 19 March 2008, which enables ADF financing of more than 90% of the total project cost on a case by case basis, subject to the following conditions⁶, which Zambia complies with:

- (i) Country's commitment to implement its overall development program: Zambia plans to launch the SNDP before the current FNDP comes to an end in December 2010;
- (ii) The financing allocated by the country to sectors targeted by Bank assistance: the total amount of domestic resources allocated to funding of the road network increased from EUR 21.83 million in 2001 to EUR 150.22 million in 2010 (out of which about 2/3 are used for maintenance work and 1/3 for capital investments) and
- (iii) The country's budget situation and debt level: despite having sustainable debt indicators at the moment, Zambia's overall budget situation continues to require additional external support as the country is yet to recover fully from the impact of the financial crisis, coupled with the need to finance its significant infrastructure programs as per its the national diversification agenda.

Table 2.5: Expenditure schedule by component (In UA million)

	TOTAL	Total		2011/12		2012/13		2013/14	
		FE	LC	FE	LC	FE	LC	FE	LC
Civil Works	52.77	42.216	10.554	16.886	4.222	21.108	5.277	4.222	1.055
Supervision	2.920	2.336	0.584	0.934	0.234	1.168	0.292	0.234	0.058
Road Safety	0.085	0.068	0.017	0.034	0.008	0.034	0.008	-	-
HIV/AIDS/STI and TB mitigation	0.141	0.113	0.028	0.045	0.011	0.045	0.011	0.023	0.006
ESMP Implementation and Tree Planting	0.032	0.025	0.006	0.013	0.003	0.006	0.002	0.006	0.002
Gender	0.064	0.051	0.013	0.025	0.006	0.025	0.006	-	-
Audit Services	0.088	0.071	0.018	0.000	0.000	0.035	0.009	0.035	0.009
Resettlement and Compensation	0.085	0.000	0.085	0.000	0.085	-	-	-	-
Sub-Total: Accompanying Measures	0.495	0.328	0.167	0.117	0.114	0.146	0.037	0.064	0.016
Institutional Support	1.150	0.920	0.230	0.552	0.138	0.368	0.092	-	-
Subtotal	57.335	45.800	11.535	18.490	4.707	22.790	5.698	4.520	1.130
Physical	5.734	4.580	1.153	1.849	0.471	2.279	0.570	0.452	0.113
Price 5% FE; 10% LC	6.402	4.270	2.133	2.519	1.269	1.502	0.751	0.249	0.113
TOTAL (Net of Taxes)	69.471	54.650	14.821	22.858	6.447	26.572	7.018	5.221	1.356

Source: Detailed Design and AfDB Appraisal Mission, May 2010

Sub components cost and contingencies are rounded to the nearest UA 1,000.

2.5.3 From a sector specific perspective, counterpart funding requirements for capital investment projects pose a risk of detracting Government resources away from maintenance activities. Lack of adequate maintenance funding is the biggest sector issue in the road sector not only in Zambia but throughout the continent. Zambia's policy focuses on allocation of funds to maintenance rather than on construction activities. Reference is made to Annex C.1 for further details.

2.5.4 The only Project component which is not eligible under AfDB's policies for waiver is compensation cost. Both the EU and the EIB also require Zambia to fund compensation cost, but will otherwise not require counterpart contributions as part of the condition for providing financing assistance. This approach is in line with sector practice in Zambia over the last six years, i.e. no counterpart funding requirements have been made by DPs. Accordingly, the financing plan for the Project is shown in Table 2.6 below.

⁶ It follows from Annex VI to AfDB's Policy on Expenditure Eligible for Bank Group Financing that WB's Country Financing Parameters should be applied. It follows from WB's latest CFPs for Zambia (2004) that "individual projects may be financed up to 100% based on case-by-case merit/justification." Reference is made to Annex A.3.

Table 2.6: Sources of Financing (in UA million)

	Total cost	ADB Group		Zambia counterpart	
		Amount	Percent	Amount	Percent
Foreign Exchange	54.650	54.650	100%	-	-
Local Currency	14.821	14.719	99.32%	0.102	0.68%
Total Costs	69.471	69.369	99.85%	0.102	0.15%

Source: AfDB Appraisal Mission, May 2010

2.5.5 The total ADF contribution to the Project is UA 69.369 million. 48% of the ADF resources for the project will come from the ADF XI PBA based national allocation for Zambia. The remaining 52% will come from the RO envelope. The source of ADF financing is shown in Table 2.7 below.

Table 2.7: Source of ADF Loans (In UA million)

	Loan Amount	ADF-XI PBA Country Allocation		ADF-XI RO Envelope	
		Amount	Percent	Amount	Percent
ADF ALLOCATIONS	69.369	33.369	48%	36.000	52%
Total Costs	69.369	33.369	48%	36.000	52%

Source: AfDB Appraisal Mission, May 2010

2.6 Project's target area and population

2.6.1 The Nacala Road Corridor is a priority SADC project. The Corridor's area of influence therefore potentially extends beyond Zambia, Malawi and Mozambique. It is estimated that 1.3 million people in the Zone of Influence will benefit from the Project. Due to the phased development of NRCP, the project area of influence is considered to be most directly falling within Zambia, Malawi and Mozambique. NRCP, Phase II of which the Project is a sub-component, will most directly influence the area between Luangwa and Mwami in the Eastern Province of Zambia.

2.6.2 The Eastern Province of Zambia accounts for more than 25% of the value of Zambia's total agricultural production. Principal crops are maize, cotton and tobacco. Cotton is emerging as the principal cash crop. Agricultural production and productivity are constrained by a number of factors, including high transport cost and poor access to markets. The development prospects of the Project road are critical to improve the integration of the Eastern Province into the national economy. Stakeholders anticipate better market access, and better distribution and lower cost for agricultural inputs. Improved access to public services including health and education is also expected.

2.6.3 The Project road will strengthen the link between Eastern Province and the administrative and economic centers in Lusaka. Other long-term project beneficiaries include freight shippers, exporters and importers, transport operators, the business community and the wider population in Zambia, Malawi and Mozambique and within SADC.

2.7 Participatory Process for Project Design and Implementation

2.7.1 The formulation, feasibility analysis, design and financing of NRCP, Phase II and the Project benefitted from the wide consultations carried out by the EU funded consultants and the appraisal teams from EU, EIB and AfDB through inter-institutional meetings, town hall consultations and sharing and commenting on the various feasibility study and detailed design reports. The key stakeholders consulted include SADC, Government agencies, project beneficiaries, DPs, transport operators, shippers' associations, manufacturers associations, chamber

of commerce (Eastern Province) representatives, ward counsellors, local leaders, village heads, project beneficiaries and communities, community based organizations and NGOs.

2.7.2 One of the positive outcomes of DP consultations has been the development of a parallel co-financing partnership between the EU, EIB and AfDB which will jointly cover 277.50 km or about 77% of NRCP, Phase II. As a result of consultations with project beneficiaries and transport operators, the Project has incorporated roadside socio-economic infrastructure that will enhance the benefit of the road to the communities living along its zone of influence, notably market sheds to replace the precarious road side trading currently taking place. The market sheds will provide safe interface opportunities between road users and local communities, offering business opportunities for local residents and serving as possible venues for the provision of public services, such as health and sanitation. Private sector financing of market sheds was considered but not pursued due to the low expected financial rates of return.

2.7.3 Consultations and participatory processes will continue during Project implementation to provide regular feedback from key stakeholders. The Steering Committee (SC), under the Chairmanship of the Director of Infrastructure and Services at the SADC Secretariat established under NRCP, Phase I to oversee and coordinate implementation among the three participating countries will be continued. With a view to improve the logistics chain among Zambia, Malawi and Mozambique the process will be managed in a holistic manner to ensure integration with other ongoing projects and project preparatory works, in particular the JICA funded study to assess the development requirements of Nacala Port and the considerations of the EU and EIB to extend assistance to Zambia to finance a dry port in Chipata to facilitate transfer of goods between road and the rail link to Malawi.

2.8 Bank Group Experience and Lessons Reflected in Project Design

2.8.1 Since commencement of operations in the transport sector in Zambia in 1987, AfDB has approved a total of UA 5.91 million in grant financing and UA 37.24 million in loan financing out of which 99.6% has been disbursed to date. The grant support has financed institutional strengthening in the transport sector, a study in civil aviation and the feasibility and detailed design for the Kazungula Bridge over the Zambezi River, which are due for completion by the end of 2010. AfDB has supported the railway subsector through two loans one approved in 1981 and the other in 1987. To date, AfDB has financed only one road project in Zambia; the First Road Project: Rehabilitation of Lusaka-Chipata Road covering 187 km of the 232 km road between Lusaka and Luangwa, which is the first part of the total of 591 km of the Nacala Road Corridor falling within Zambia. NRCP, Phase II covers the remaining 360 km. AfDB's support to the proposed Project is therefore undertaken as a natural sequence to the past intervention.

2.8.2 Project Design has benefitted and taken into account lessons learned from the past AfDB intervention in the road subsector, the implementation of NRCP, Phase I and projects implemented by other DPs in Zambia and AfDB's past experience in implementation of other road corridor projects on the continent. In addition, the Project design takes into account the findings and recommendations of AfDB's study on unit cost of road infrastructure as per the details provided in Annex B.1, table B.1.1. Lessons learned from past interventions include the following: (i) the assignment of a dedicated Project Manager from RDA contributes positively to project implementation; (ii) SATCC standards and specifications should be applied on all projects; (iii) lack of competition in the local contractor market has led to bids considerably higher than Engineer's estimates; (iv) lack of counterpart funds have caused implementation delays; (v) independent technical audits are required at regular intervals during implementation to ensure

consistency with specifications; (vi) road safety measures have not always been adequately addressed; (vii) lack of implementation of HIV/AIDS awareness campaigns as planned; and (viii) as in most countries, lack of adequate routine and periodic maintenance of road assets pose a serious threat to the expected life span of rehabilitated road assets; (ix) regional coordination and monitoring by corridor authorities and Regional Economic Communities (RECs) is required to overcome fragmented approaches at the country level and improve operational practices for the corridor as a whole. Conflicts between national strategies and regional strategies could occur and the coordinating role of Corridor committees and RECs is crucial; (x) institutional capacity building is essential in order to implement large scale corridor projects; (xi) best practice cross border transport projects have several elements in order to enhance the impact, including transport infrastructure development, trade facilitation and regulatory reforms.

2.9 Key Performance Indicators

2.9.1 The achievement of the Project objectives will produce the following outcomes: (i) reduced transport cost and improved accessibility of communities to social services and markets; and (ii) improved road safety. In an attempt to reduce the reporting demands on RDA for the overall NCRP Phase II, the Project performance indicators have been standardized and harmonized with those of the EU and EIB to the largest extent possible. These basic indicators for monitoring and evaluating Project outcomes are included in the Project Results Framework. The outcome and impact indicators will be reviewed at the start of Project implementation and include: (i) VOC savings and travel time cost; (ii) service levels of road over design life and road condition; and (iii) traffic accidents and mortality along the Transport Project (annually). Other socio-economic outcome indicators that are directly influenced by the Project, such as income levels; and production of key agricultural crops in Eastern Province will also be monitored.

III – PROJECT FEASIBILITY

3.1. Economic and financial performance

3.1.1 The economic viability of NRCPP, Phase II and the Project has been assessed within the Cost Benefit Analysis framework of the Road Economic Decision (RED) Model. The model allows modelling over the analysis period of 20 years and compares the annual streams of economic capital and operating cost and benefits and computes the Net Present Value (NPV) and the EIRR, based on the 12% opportunity cost of capital in Zambia. Financial costs were converted into economic cost by applying a standard conversion factor (SFC) of 0.8. The economic benefits are calculated as the difference between the “with the Project” and the “without the Project” scenarios.

3.1.2 The viability of the Project rests primarily on the improved road conditions generating savings to road users in the form of reduced Vehicle Operating Cost (VOC) savings and time savings for normal, generated and diverted traffic, constituting 56% of benefits. It is also assumed that reductions in road user cost and increased confidence in the Nacala Road Corridor as a viable export route will result in increased production and sales of agricultural produce. The Eastern Province is one of the most agriculturally productive provinces in Zambia and accounts for more than 25% of the value of the country’s total agricultural production. NRCPP, Phase II is the only access point from the Province to the rest of the country. The benefits assumed resulting from this “producer surplus” are estimated at 27.4%. The road safety design measures and the road safety awareness campaigns included in the Project are estimated to result in significant reductions in road accidents and fatalities. The benefits from reductions in road accidents are estimated at 9%. Finally, the benefits to the road agency consist of maintenance savings, estimated at 6.2% of total benefits

and residual value estimated at 1.4% of total benefits. Table 3.1 contains a summary of the economic analysis. Further details are in Annex B.7.

Table 3.1 Key Economic and Financial Figures

EIRR (base case) (NRCP, Phase II)	14.69%
NPV (base case) (NRCP, Phase II)	Euro 40.05 million
EIRR (base case) (Section 2)	15.29%
NPV (base case) (Section 2)	Euro 9.39 million
EIRR (base case) (Section 3)	15.83%
NPV (base case) (Section 3)	Euro 7.35 million

3.1.3. A sensitivity analysis of three alternatives was conducted by assessing the implications (i) a cost increase of 10%; (ii) a decrease in benefits of 10%; and (iii) a concurrent increase in cost of 10% and a 10% decrease in benefits. The results of the “worst case scenario”, i.e. (iii) were also checked for both for NRCP, Phase II and the Project. The “worst case scenario” results in an EIRR for NRCP, Phase II of 12.18% which is above the opportunity cost of capital of 12% in Zambia. The “worst case scenario” sensitivity tests for Sections 2 (12.70%) and 3 (13.20%) produce higher results than when compared to NRCP, Phase II.

3.1.4 In addition to the sensitivity test above, “switch values” for construction cost and road user benefits has been calculated as part of the economic analysis. The “switch values” is the percentage of change of a cost or benefit that makes the EIRR equal to 12% and the NPV equal to zero. An overview of the results of the analysis is in Table 3.2. Again, Sections 2 and 3 are more resilient than the overall NRCP, Phase II.

**Table 3.2 Switch Values for Construction Cost and Benefits
for EIRR of 12.0% and NPV = 0**

	Sections 1-8	Section 2	Section 3
Cost	24.1%	29.8%	34.9%
Benefits	-19.4%	-22.9	-25.9

Source: Feasibility Study and AfDB Appraisal Mission, May 2010

3.2. Environmental and Social Impacts

3.2.1 Environment. The Project is classified as Category 1 according to AfDB’s Environmental and Social Assessment Procedures (ESAP) based on: (i) the proposed works which constitute major rehabilitation and upgrading causing significant environmental and social impacts on NRCP, Phase II; (ii) NRCP, Phase II is part of a regional corridor with potential cumulative environmental and social impacts such as the spread of HIV/AIDS; and (iii) several micro economic activities shall have to be compensated and/or relocated. As such a full ESIA and costed ESMP were prepared. The Executive Summary of the ESIA and Abbreviated Resettlement Action Plan (ARAP) were posted on AfDB’s website on 30 April 2010 and distributed to the Board under Ref. ADB/BD/IF/2010/141.

3.2.2 The major adverse environmental impacts of the project include loss of vegetation; pollution of water, soils and underground resources; noise and air pollution; soil erosion and siltation; loss of cultivated agriculture/grazing land. Socially the project will disturb commercial enterprises and socioeconomic infrastructure; indirectly increase infections and spread of STIs and HIV/AIDS; and increase pressure on existing social service facilities. Air, dust and noise pollution will be reduced by enforcing speed regulations and regularly watering detours and other active construction sites; and locating contractor’s site establishments away from sensitive receptors.

Other mitigation measures during construction include servicing of equipment; provision of drainage facilities; preventing siltation of water resources; tree planting and a sensitization campaigns on HIV/AIDS, environmental protection and climate change. The Project design has included UA 32,000 for the implementation of the ESMP and environmental enhancing activities, including tree planting. RDA will ensure that environmental and social clauses are included in the Bidding Documents (BDs) for the Project.

3.2.3 Climate Change. A national strategy on Climate Change is yet to be developed. Nevertheless, Project design has taken into consideration climate change resilience measures of road re-enforcement to protect the infrastructure from unforeseen heavy rain falls, including drainage facilities and pavement surfacing type. In addition, the Project includes off-road environmental management of the catchment producing flush floods through community sensitization. The Project has also made provisions for financing an elaborate program of tree planting in villages along the perimeter of the road reserve to act as a carbon sink. This program will be implemented in collaboration with the Department of Forestry in the Ministry of Tourism, Environment and Natural Resources, which has a substantial presence at district and provincial levels and has an Agro-forestry and Woodlot establishment Program. Through its offices, local NGO partners and Village Development Committees will carry out community sensitization to protect the proposed catchment and also facilitate the proposed tree planting of approximately 20 ha. The Project's mitigation measures also include enforcing good maintenance of site equipment, machines and vehicles to curb CO₂ emissions.

3.2.4 Gender. The Project foresees having both positive and negative impacts on gender. A number of positive impacts are expected. One positive impact will be the gender sensitizations that will take place in the communities. This sensitization while targeted at the civil works component will have consequences beyond the project in influencing people's attitudes to gender. An experienced and well qualified service provider such as an NGO will be sub-contracted by the civil works contractor for this purpose. Another positive impact is the increase in income levels for men and women through employment during construction and afterwards during maintenance. RDA will include in the Special Conditions of the BDs for civil works an obligation for contractors to ensure that (i) 20% of the unskilled labour during construction are women, and (ii) 10% of the unskilled labour force during implementation are women. Additional sources of income for women will be through sales of food items to construction workers. Provision of water points is a further positive impact as a result of the Project. At least 9 locations have been identified to benefit from the water points. Finally, the Project has included construction of 3 simple market structures (sheds) to improve the conditions under which women sell their produce, and to enhance road safety. An allocation of UA 64,000 has been included in support of these gender related activities.

3.2.5 Two negative impacts are likely to emerge from the Project, the first of which is the increased vulnerability for both men and women at the Project sites. During road construction, the skilled workforce (mostly men) will come from outside the community being away from their families and spouses for considerable time. Construction workers are usually male with high disposable incomes in relatively poor environments with a large number of disadvantaged women. This may result in casual and multiple sexual relationships. Girls are particularly vulnerable to this risk. The second impact relates to the risk that increased household incomes may result in men taking new wives. The proposed HIV/AIDS and gender sensitization programs are designed to seek to mitigate risks through prevention campaigns and capacity building of CBOs and peer educators. The gender sensitization for women will complement these HIV/AIDS initiatives.

3.2.6. Employment & Wealth Creation. The Project will stimulate and facilitate wealth creation and distribution through employment created during and after implementation and through

enhanced economic activities. The Project is expected to employ at least 50 unskilled local workers during construction and 30 during operation. At the current wage rate of EUR 45.8 per month this translates into approximately EUR 1,100 per worker per year or a total of EUR 87,936 over a two year period. Given the prevailing poverty incidence in Eastern Province estimated at 67% (totally poor) and 20% (extremely poor) compared to national incidence level of 64%, these employment opportunities will improve the livelihood of the local population. Other economic activities such as provision of food to construction workers, hospitality services and roadside vending offer additional income generating opportunities for the communities in the project area.

3.2.7 HIV/AIDS/STI and TB. The influx of construction workers during project implementation implies a risk of increased Sexually Transmitted Infections (STI) and incidence of HIV/AIDS and opportunistic diseases such as tuberculosis (TB). The national prevalence rate is estimated at 14.5% (2008). The prevalence rate of Eastern Province is 10%, out of which women account for 11.9% and men for 9.5%. The national TB cure rate under the Directly Observed Treatment Short course for effective treatment of TB was estimated at 65% (2004) and targeted to increase to 80% in 2010. The Project design requires inclusion of a provision in the civil works contract which obliges the contractor to engage a service provider to carry out sensitization activities, awareness and prevention and impart knowledge to the workers and communities on general health issues and in particular HIV/AIDS/STI and TB. Project cost includes a provisional sum of UA 140,000 for this purpose.

3.2.8 Road Safety. The Project has a potential for increased accidents and fatalities through road accidents both during implementation and operation. In 2009 there were approximately 83 fatalities out of the 1072 accidents occurring on NRCP, Phase II. Project design has taken into consideration specific measures of road safety in the engineering design and also addresses road safety through targeted educational campaigns (Further details are in Annex B.8). Project cost includes provision of UA 84,000 for these activities.

3.2.9 Compensation. The Project road follows an existing alignment. An assessment of resettlement/ compensation needs was carried out during Project preparation, indicating that only a small number of people (under 200) will be affected, mainly through the need to relocate kiosks and small dwellings. To obtain further details and expand the assessment, RDA will be required to prepare a Resettlement Action Plan prior to commencement of works. A framework to guide compensation payments for any potential losses has been developed. The Project cost includes an estimated provision of UA 85,000 for this purpose.

IV – IMPLEMENTATION

4.1 Implementation Arrangements

Executing Agency

4.1.1 The Executing Agency will be the Road Development Agency under the oversight of the Permanent Secretary, Ministry of Works and Supply. The National Road Fund Agency (NRFA) will be responsible for financial management⁷. The two agencies have experience in the implementation of donor funded projects, in particular of projects financed by the EU and the WB Bank and are therefore familiar with the requirements of international financial institutions. The organizational structure of the RDA is Annex A.1 and the organization structure of NRFA is in Annex B.5.

⁷ All projects in Zambia are audited under the authority of the Office of the Auditor General and the Audit reports are submitted to the independent PAC.

4.1.2 Experienced consulting firms procured in accordance with ADF's Rules and Procedures will supervise the civil works contracts and monitor day to day activities on site. RDA has nominated a Project Coordinator, to coordinate and monitor Project activities until signing of the civil works contract. RDA will nominate a Senior Engineer whose qualifications and experience shall be acceptable to ADF to be the Project Manager for implementation of civil works. The Project Manager will be the key contact person for all issues related to the Project after award of the civil works contract and shall ensure proper coordination, monitoring and supervision of implementation. The letter of appointment of the Project Manager and his/her's terms of reference is a condition for AfDB's no-objection for award of contract. Institutional implementation support to RDA will be provided through the ISCB component. Details of the assistance are provided in the ISCB TORs in Annex A.1.1.

Regional Steering Committee

4.1.3 Most of the NRCP components will be implemented in parallel and independently. However, close cooperation is necessary for the NRCP to achieve its overall long-term development impacts. The SC established under NRCP, Phase I under the Chairmanship of the Director of Infrastructure and Services at the SADC Secretariat to oversee and coordinate implementation of the different cross-border coordination phases of the NRCP will be continued under the Project. The SC provides a forum where the responsible Ministries for transport infrastructure in Zambia, Malawi and Mozambique, the Road Agencies, the SADC Secretariat and the financiers can discuss and coordinate road project activities relating to the Nacala Corridor. The TOR for the SC include but are not limited to the following responsibilities of the SC: (i) provide guidance on Project business issues; (ii) provide a forum for discussion of any issue that may have major implications for the Project; (iii) provide a setting where differences of opinions and disputes can be resolved. A consolidated corridor action plan is under development. The SC, which will meet at least bi-annually, will comprise the Chief Executive of the Road Development Agency (RDA) in Zambia, the Chief Executive of the Roads Authority (RA) in Malawi and the Director General of the National Roads Administration in Mozambique, or their designates.

4.2 Procurement, Financial Management and Disbursement

Procurement

4.2.1 As the Executing Agency, RDA will be responsible for the procurement of works and consulting services. The Executing Agency will be responsible for obtaining the necessary internal approvals based on the requirements of the Zambia Public Authority Procurement Act of 2008. All procurement of civil works and acquisition of consulting services financed by ADF will be in accordance with ADF's Rules and Procedures for Procurement of Goods and Works, (May 2008) or as appropriate Rules and Procedures for the Use of Consultants, (May 2008) applying the relevant Standard Bidding Documents or Requests for Proposals, as the case may be. The Project's procurement arrangements are detailed in Annex B.4.

Financial Management

4.2.2. NRFA will be responsible for the financial management of the Project. An assessment of NRFA's financial management systems concluded that NRFA has the required capacity to handle and manage the resources of the Project. NRFA has adequate systems in place for effective planning, budgeting, accounting and reporting for the use of funds for the proposed Project. The annual Project accounts will be audited by an independent external auditor acceptable to ADF; and the annual audited Project accounts along with the management letter will be submitted to ADF

within six months after the end of each fiscal year. Further details on financial management and disbursement details are provided in Annex B.5. The Financial Audit Arrangements are described in Annex B.6.

Disbursements

4.2.3. The Direct Payment Disbursement Method will be used for all Project components. Disbursement requests will be managed by NRFA. All disbursements from ADF will follow the procedures and standard supporting documents outlined in AfDB's Disbursement Handbook.

4.3 Monitoring

4.3.1 The Executing Agency will, with the support of the Technical Auditor, monitor technical compliance of the works performed by the contractor and the construction supervision consultant. The Executing Agency shall also regularly provide ADF with quarterly progress reports for the Project, including the implementation of the Environmental and Social Management Action Plan, in the format established under the PPMS covering all Project activities. Funding for the development of the PPMS is included as sub-component two under the ISCB component. A summary of the Project monitoring timeframe and process is included in Table B.3.1 in Annex B.3.

4.3.2 AfDB's Field Offices will assist in the monitoring and evaluation of the Phases of the NRCP which falls within their respective country. Both MZFO and MWFO are playing important roles in the implementation of NRCP, Phase I. ZMFO has been actively involved in the preparation of NRCP, Phase II and its contribution will continue during implementation. All three field offices will be involved in the preparation of NRCP, Phase III and thus ensure that lessons learned from implementation of earlier Phases are adequately addressed.

4.4 Governance

4.4.1 The Project is being processed in a period where governance is at the forefront of sector issues in Zambia. In line with the recommendations of AfDB's Guidance Note "Addressing Sector Governance and Corruption Risk in Infrastructure Projects" (March 2010), project preparatory work has been undertaken within the context of an intense dialogue with Zambia and DPs active in the sector. The governance situation has provided an opportunity for Zambia to demonstrate its strong commitment to overcome governance challenges in the road sector and has created a window of opportunity for institutionalizing new standards of transparency and governance in the sector. The Project will contribute to these efforts through the ISCB component, which is structured to (i) offer institutional support to RDA for the implementation and monitoring of the Project (subcomponents one and two); and (ii) directly address some of RDA's capacity needs as identified in the Auditor General's reports (subcomponent three), i.e. general capacity building in the area of procurement and contract management. To ensure that the lessons to be learned from the Auditor General's technical audit – particularly as they relate to the quality of the works – are fully addressed, the Project also provides for regular technical audits (further details are in Annex A.12) throughout Project implementation. The work and time schedule for the technical audit is to be aligned with AfDB's schedule for supervision of Project implementation. The ISCB TOR has been designed to enable complementary capacity building support from co-financing DPs, for instance in the area of planning and quality control. ISCB, sub-component one, B includes contract management assistance for the entire NRCP, Phase II and is a direct expression of the "one-project" approach applied by the co-financing DPs in Project preparation. The support provided under the

ISCB component is expected to be complemented by subsequent substantial capacity building initiatives agreed as part of the road sector action plan⁸.

4.4.2 In addition to the ISCB component, the specific governance risk mitigation measures included in Project comprise: (i) the appointment of independent Financial and Technical audit firms to ensure that funds are used efficiently and for the intended purposes; (ii) Bank prior review and approval of all Project procurement activities; and (iii) the use of direct disbursement methods to channel Project funds to contractors and service providers. It has further been agreed that assistance from the Procurement Specialist at AfDB's ZMFO can be provided, as and when necessary, to support Project implementation.

4.4.3 AfDB continues to support the Government of the Republic of Zambia towards strengthening public financial governance including through specific indicators and targets as contained in the third Poverty Reduction Budget Support program (jointly with other cooperating partners). At a sector level and within what is possible under its scope, the Project addresses the same issues identified at the national level and constitutes a sector specific intervention, which is fully aligned with the country level efforts of enhancing public financial management.

4.5. Sustainability

4.5.1 The sustainability of the Project will depend primarily on the ability of Zambia to plan, program, finance and implement timely maintenance of the Project road. The planning, programming, and implementation of timely and adequate road maintenance in Zambia is done under a holistic sector wide approach outlined in ROADSIP II. The Project road is one of the key strategic roads included in the investment plan. The ongoing review of ROADSIP II is not expected to change Zambia's priority ranking of the Project road and GRZ has expressed its commitment to ensure that the maintenance needs of the rehabilitated NRCP, Phase II will be met.

4.5.2 Zambia has established a ring-fenced road maintenance fund to secure the stable flow of funds for road maintenance. Revenues collected are being fully remitted to the sector for maintenance purposes. Total domestic resources made available for the road sector increased from EUR 21.83 million in 2001 to EUR 141.24 million in 2009. Over the same period, fuel levy increased from EUR 9.35 million to EUR 52.63 million. Further details on the establishment and function of NRFA are in Annex C.1. The chosen rehabilitation AC intervention minimizes annual maintenance cost to EUR 3,424 pr km equivalent to EUR 392,733 for the Project stretch of 114.7 km. This compares to annual maintenance cost estimated at EUR 11,112 per km per year in the "without Project" scenario, or a total of EUR 1,274,546 for the Project road. Thus, the selected AC intervention in itself offers significant advantages with regards to ensuring the affordability of maintenance interventions and is part of Zambia's strategy of bringing the Core Road Network (CRN) into maintainable condition. Since 2008, NRFA has allocated about EUR 26.25 million annually for routine maintenance. Fuel levy, which in 2009 amounted to EUR 52.63 million is sufficient to cover the full routine maintenance cost of the entire CRN. The total domestic resources allocated to the road sector in 2009 amounts to EUR 141.24 million, comprised of EUR 50.45 million from central Government allocations and EUR 90.79 million from fuel levy and other road user charges. Further details are in Annex C.1. Considering both the commitment expressed by GRZ with regards to the strategic importance of NRCP, Phase II and the fact that the intervention option minimizes maintenance cost to a level where only 1.5% of NRFA's current allocation to

⁸ Anticipated sector initiatives include a review of the Transport Policy of 2002 based on an analysis of multi-modal transport requirements and is expected to lead to the formulation of a comprehensive investment framework for each of the transport modes.

routine maintenance will be required to maintain the Project road, it is considered likely that the rehabilitated asset will be maintained as envisaged in Project design.

4.5.3 Another policy direction that has the potential to gradually help ensuring sustainability of the CRN is the increased role of the private sector in routine maintenance. The private sector is currently involved in routine maintenance activities through Performance Based Maintenance (PBM) contracts which are gradually being introduced in Zambia. As long term contracts are new within the country, PBMs are being introduced gradually on a 3 year contractual basis. Presently, 4500 km of the paved CRN is covered by PBM contracts. The policy direction holds the promise of contributing to the development of a strong domestic contracting industry over time and is welcomed by private sector representatives.

4.5.4 Zambia is implementing policy measures with respect to axle-load control. The measures include mandatory passing of trucks on weigh bridges at borders, including at Mwami and improved enforcement of existing axle load control legislation. These protective measures will also contribute to the sustainability of the Project.

4.6. Risk management

4.6.1 The successful implementation of the Project and achievement of its development objectives rests on several assumptions each of which may constitute a potential risk:

Risk of political will to regional integration of SADC countries and risk of political will to regional integration within Zambia. Commitment to implementation of regional cooperation and integration project seem unwavering and the risk of reversal to this long established commitment is considered unlikely. All three participating countries have allocated financing from their ADF XI resources and have thus demonstrated strong commitment to the Project.

Unpredicted escalation of construction cost. The risk of significant increases in construction cost are mitigated by basing estimated Project cost on detailed design and including substantial contingency provisions.

Implementation risk. Considering the scale of the NRCP, Phase II and the pressure it will place on existing Executing Agency staff, targeted assistance is included under the ISCB component to ensure additional support to RDA in managing the significantly increased workload. RDA will also receive implementation support under the EU and EIB financed road sections. To mitigate any implementation delays, the Project utilizes Advance Contracting to fast track implementation and ensure initiation of civil works by September 2011. In addition, the Procurement Officer based at ZMFO will be able to extend hands-on assistance on a daily basis to ensure that Project implementation remains on track.

4.7. Knowledge Building

4.7.1 The type of knowledge expected to emerge for the Project stems directly from its anticipated outcomes. The critical role of transport in reducing transaction costs, fostering cross border trade and enhancing economic growth form the basis for AfDB's approach to regional infrastructure development. The Project provides a good opportunity to confirm the validity of the approach and adds to AfDB's growing knowledge on implementation of regional transport corridors. The Project also provides the foundation for the preparatory work to Phase III, in particular with regards to prospects for increased regional trade. The sequence of the Phases is designed in a manner in which the trade and transport facilitation aspects will be most dominant in

Phase III, which includes two one-stop border posts. Project preparation has been undertaken in close cooperation with the EU and EIB under a “one-project” approach to ensure maximum complementarities among interventions. The effective team work established among the three institutions offers best practice examples for future regional co-financed projects.

V – LEGAL INSTRUMENTS AND AUTHORITY

5.1 Legal Instrument

5.1.1 The AfDB instruments to finance the Project is an ADF concessionary loan to Zambia. The loan amounts to UA 69.386 million broken down into UA 33.386 million (48%) from Zambia’s ADF-XI PBA based allocation and UA 36 million (52%) from the Regional Operations Envelope. The General Conditions Applicable to Loan, Guarantee and Grant Agreements of the ADF will apply.

5.2 Conditions associated with AfDB’s intervention

5.2.1 Conditions Precedent to the Entry into Force of the Loan Agreement

5.2.2. The entry into force of the Loan Agreement shall be subject to the fulfilment by the Borrower of the provision in Section 12.01 of the General Conditions Applicable to Loan, Guarantee and Grant Arrangements of ADF.

5.2.3 Conditions Precedent to the First Disbursement of the Loan

5.2.4 The obligation of ADF to make the first disbursement of the Loan shall be conditional upon the entry into force of the Loan Agreement and the fulfilment of the following conditions:

- (i) The Borrower, in consultation with the Fund, has: (a) developed a road sector action plan to address concerns raised by the Auditor General’s audit of the RDA for the period January 2006 – September 2009; and (b) established a timeline for implementation of any agreed upon remedial measures (reference is made to paragraph 1.5.2);
- (ii) The Borrower has submitted a full Resettlement Action Plan (RAP) acceptable to the Fund (reference is made to paragraph 3.2.9); and
- (iii) If applicable, the Borrower shall have resettled and compensated any Project Affected Persons (PAPs) identified at the time of request for first disbursement.

5.2.5 Conditions for Further Disbursements

The obligation of ADF to make further disbursements under the Loan shall be conditional upon the fulfilment of the following conditions:

- (i) The appointment of a Project Manager, prior to award of the civil works contract, with qualifications and experience satisfactory to the Fund (reference is made to paragraph 4.1.2);
- (ii) The implementation of any remedial measures in respect of the Auditor General’s audit report agreed upon with the Fund, in accordance with the established timeline; and
- (iii) Prior to the commencement of construction works of any section and in accordance with the civil works schedule, the updating of the RAP and evidence submitted that all PAPs have

been fully and adequately compensated, in accordance with the Fund's Involuntary Resettlement Policy and any applicable Borrower's laws and regulations.

5.3 Compliance with Bank Policies

(v) This project complies with all applicable Bank policies.

(v) The following exceptions to AfDB policies are recommended for approval. The project complies with all other applicable Bank policies.

VI – CONCLUSIONS AND RECOMMENDATION

6.1 Conclusions

6.1.1 The Project is expected to contribute to enhanced trade and regional integration in the SADC region and in particular among Zambia, Malawi and Mozambique by reducing general transport costs and enhancing accessibility to markets. The EIRR has been estimated at 14.69% for NRCP, Phase II and 15.29% and 15.83% respectively for Sections 2 and 3 to be financed by ADF. These rates are higher than the opportunity cost of capital in Zambia.

6.1.2 The Project will also contribute to poverty reduction by increasing access to markets and social services for the population in the Project's zone of influence and by empowering women and other disadvantaged groups through adequate roadside socioeconomic infrastructure and services.

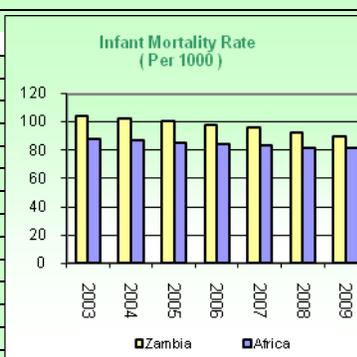
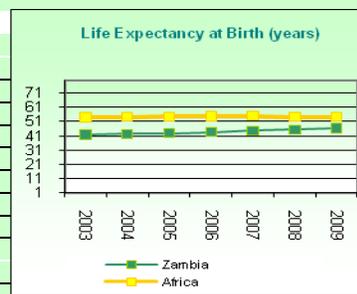
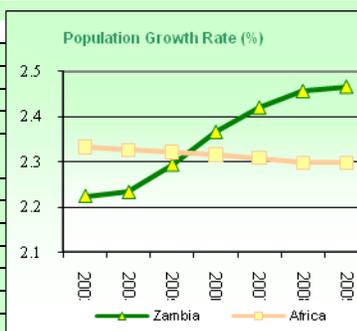
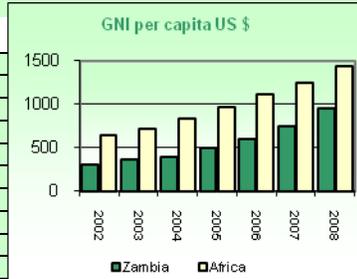
6.1.3 The Project road is a both high priority SADC intervention and a high priority Zambian intervention. It is aligned with AfDB's Medium Term Strategy and the Bank Group Regional Integration Strategy (2009-2012).

6.2 Recommendation

6.2.1 Management recommends that the Board of Directors approve the proposed loan of UA 69.369 million to the Republic of Zambia for the purpose of financing the Project described in this report and subject to the conditions stipulated above.

NACALA ROAD CORRIDOR PROJECT, PHASE II ZAMBIA'S COMPARATIVE SOCIO-ECONOMIC INDICATORS

	Year	Zambia	Africa	Developing Countries	Developed Countries
Basic Indicators					
Area ('000 Km ²)		753	80 976	80 976	54 658
Total Population (millions)	2009	12.9	1,008	5,629	1,069
Urban Population (% of Total)	2009	35.5	39.6	44.8	77.7
Population Density (per Km ²)	2009	17.2	3.3	66.6	23.1
GNI per Capita (US \$)	2008	950	1 428	2 780	39 688
Labor Force Participation - Total (%)	2009	38.6	41.2	45.6	54.6
Labor Force Participation - Female (%)	2009	43.2	41.2	39.8	43.3
Gender -Related Development Index Value	2005	0.425	0.525	0.694	0.911
Human Develop. Index (Rank among 182 countries)	2007	164	0.514	n.a	n.a.
Popul. Living Below \$ 1 a Day (% of Population)	2004	64.3	50.8	25.0	...
Demographic Indicators					
Population Growth Rate - Total (%)	2009	2.5	2.3	1.3	0.7
Population Growth Rate - Urban (%)	2009	2.9	3.4	2.4	1.0
Population < 15 years (%)	2009	46.2	56.0	29.2	17.7
Population >= 65 years (%)	2009	3.0	4.5	6.0	15.3
Dependency Ratio (%)	2009	97.1	78.0	52.8	49.0
Sex Ratio (per 100 female)	2009	99.5	100.7	934.9	948.3
Female Population 15-49 years (% of total population)	2009	22.1	48.5	53.3	47.2
Life Expectancy at Birth - Total (years)	2009	46.4	55.7	66.9	79.8
Life Expectancy at Birth - Female (years)	2009	46.9	56.8	68.9	82.7
Crude Birth Rate (per 1,000)	2009	42.4	35.4	21.5	12.0
Crude Death Rate (per 1,000)	2009	16.6	12.2	8.2	8.3
Infant Mortality Rate (per 1,000)	2009	89.7	80.0	49.9	5.8
Child Mortality Rate (per 1,000)	2009	152.0	83.9	51.4	6.3
Total Fertility Rate (per woman)	2009	5.7	4.5	2.7	1.8
Maternal Mortality Rate (per 100,000)	2005	830.0	683.0	440.0	10.0
Women Using Contraception (%)	2005	61.0	75.0
Health & Nutrition Indicators					
Physicians (per 100,000 people)	2004	11.2	42.9	78.0	287.0
Nurses (per 100,000 people)*	2004	168.7	120.4	98.0	782.0
Births attended by Trained Health Personnel (%)	2007	46.5	50.5	63.4	99.3
Access to Safe Water (% of Population)	2006	58.0	64.0	84.0	99.6
Access to Health Services (% of Population)	2004	90.2	61.7	80.0	100.0
Access to Sanitation (% of Population)	2006	52.0	38.5	54.6	99.8
Percent. of Adults (aged 15-49) Living with HIV/AIDS	2007	15.2	4.5	1.3	0.3
Incidence of Tuberculosis (per 100,000)	2007	506.0	313.7	161.9	14.1
Child Immunization Against Tuberculosis (%)	2007	97.0	83.0	89.0	99.0
Child Immunization Against Measles (%)	2007	97.0	74.0	81.7	92.6
Underweight Children (% of children under 5 years)	2004	20.0	25.6	27.0	0.1
Daily Calorie Supply per Capita	2005	1 895	2 324	2 675	3 285
Public Expenditure on Health (as % of GDP)	2008	3.1	5.5	4.0	6.9
Education Indicators					
Gross Enrolment Ratio (%)					
Primary School - Total	2008	119.1	100.2	106.8	101.5
Primary School - Female	2008	117.9	91.7	104.6	101.2
Secondary School - Total	2008	51.8	35.1	62.3	100.3
Secondary School - Female	2008	47.2	30.5	60.7	100.0
Primary School Female Teaching Staff (% of Total)	2008	50.1	47.5
Adult Illiteracy Rate - Total (%)	2006	...	59.4	19.0	...
Adult Illiteracy Rate - Male (%)	2006	...	69.8	13.4	...
Adult Illiteracy Rate - Female (%)	2006	...	57.4	24.4	...
Percentage of GDP Spent on Education	2008	1.4	4.5	...	5.4
Environmental Indicators					
Land Use (Arable Land as % of Total Land Area)	2007	7.1	6.0	9.9	11.6
Annual Rate of Deforestation (%)	2006	...	0.7	0.4	-0.2
Annual Rate of Reforestation (%)	2006	...	10.9
Per Capita CO2 Emissions (metric tons)	2008	0.2	1.1	1.9	12.3



Sources : ADB Statistics Department Databases; World Bank: World Development Indicators; Last update :May 2010
UNAIDS; UNSD; WHO, UNICEF, WRI, UNDP; Country Reports.

Note : n.a. : Not Applicable ; ... : Data Not Available.

NACALA ROAD CORRIDOR PROJECT, PHASE II
AfDB's ONGOING PROJECTS IN ZAMBIA AS OF MAY 2010

	Project and Sector	Project No.	Date Signed	Effect. date	Closing Date	Approved Amount (UA)		Amount Disbursed (UA)	% disbursed
ADF RESOURCES									
MULTISECTOR									
1	POVERTY REDUCTION BUDGET SUPPORT II	2100150017794	12/02/2008	-	31/12/11	15,000,000		15,000,000	100.00
	Total Multisector					15,000,000		15,000,000	100.00
SOCIAL									
2	EDUCATION III PROJECT****	2100 1500 01092	17/02/00	02/09/2001	31/03/10	8,500,000		7,550,000	88.82
3	HEALTH SECTOR SUPPORT PROJECT****	2100 1500 01097	10/01/1999	02/01/2001	30/03/10	8,920,000		7,570,000	84.87
	Total Social					17,420,000		15,120,000	86.80
AGRICULTURE									
4	SMALLSCALE IRRIGATION PROJECT	2100 1500 01106	02/06/2001	15/03/02	31/06/10	5,290,000		4,970,000	93.95
	SMALLSCALE IRRIGATION PROJECT - Grant	2100155000489	02/06/2001	15/03/02	31/06/10	760,000		470,000	61.84
5	LAKE TANGANYIKA INTEGRATED REGIONAL MANAGEMENT PRG.	2100 1500 09044	18/05/05		31/12/12	3,260,000		80,000	0.02
6	EMERGENCY ASSISTANCE TO ZAMBIA FOR FLOOD VICTIMS**	5000199001418				310,000		0	0.00
7	AFRICA FOOD CRISIS RESPONSE FOR ZAMBIA.					2,117,727		2,117,727	100.00
	Total Agriculture					11,737,727		7,637,727	65.07
WATER AND SANITATION									
8	CENTRAL PROVINCE EIGHT CENTRES WATER SUPPLY	2100 1500 07225	22/04/04	16/12/04	31/12/10	16,250,000		16,150,000	99.38
	CENTRAL PROVINCE EIGHT CENTRES WATER SUPPLY GRANT	2100 155002045	22/04/04	16/12/04	31/12/10	5,780,000		3,670,000	63.49
9	RURAL WATER SUPPLY & SANITATION PROGRAM	2100 1500 13198	17/05/07	29/01/08	31/12/11	15,000,000		670,000	4.47
10	NKANA WATER SUPPLY AND SANITATION PROGRAMME	2100 1500 18345	22/12/08	06/12/2009	31/12/13	35,000,000		240,000	0.01
	Community Water Mgt improvement Project for traditional Farmers in Mkushi, Kapiri Mposhi, Masaiti and Chingola Districts								
	Total Water and Sanitation					72,030,000		20,730,000	28.78
TOTAL - ADF RESOURCES National Projects						116,187,727		58,487,727	50.34
MULTINATIONAL PROJECTS									
11	Agricultural Marketing Promotion and Regional Integration Project	2100155002060	07/01/2004	28/02/05	31/12/09	3,736,000		2,770,000	74.14
12	SADC North - South Corridor - Kazungula Bridge Study	2100155008918	01.12.06		13.12.10	1,450,000		400,000	27.59
13	Enhancing Procurement Reforms and Capacity Project	2100155007378	14/08/06	19/12/06	31/12/11	5,660,000		2,870,000	50.71
	Total					10,846,000		6,040,000	55.69
TOTAL - ADF RESOURCES						127,033,727		58,487,727	46.04
ADB RESOURCES - PRIVATE SECTOR									
14	LUMWANA COPPER MINE PROJECT	2000 1200 01019	12/01/2006	27/09/07	30/06/09	43,000,000	USD	43,000,000	100.00
15	Zanaco Zambia**	2000 1200 01869	-	-	-	10,000,000	USD	0	0.00
16	Investrust Zambia**	2000 1200 01870	-	-	-	3,500,000	USD	3,500,000	1.00
17	SWARP SPINNING MILLS LTD (SSML)	2000 1200 00072	02/09/1996	08/01/1996	01/01/97	7,240,000	USD	7,240,000	100.00
18	FAPA TA Grant SMEs	5700155000502		09/04/2009		1,330,000		0	
	TOTAL - ADB RESOURCES					65,070,000	USD	53,740,000	82.59

** Cancelled

**** Projects completed but their balances moved for the Food Crisis Initiative Hence extended in the SAP to allow disbursement

**NACALA ROAD CORRIDOR PROJECT, PHASE II
KEY RELATED PROJECTS FINANCED BY AfDB AND OTHER DONORS IN ZAMBIA⁹**

1. Ongoing Projects

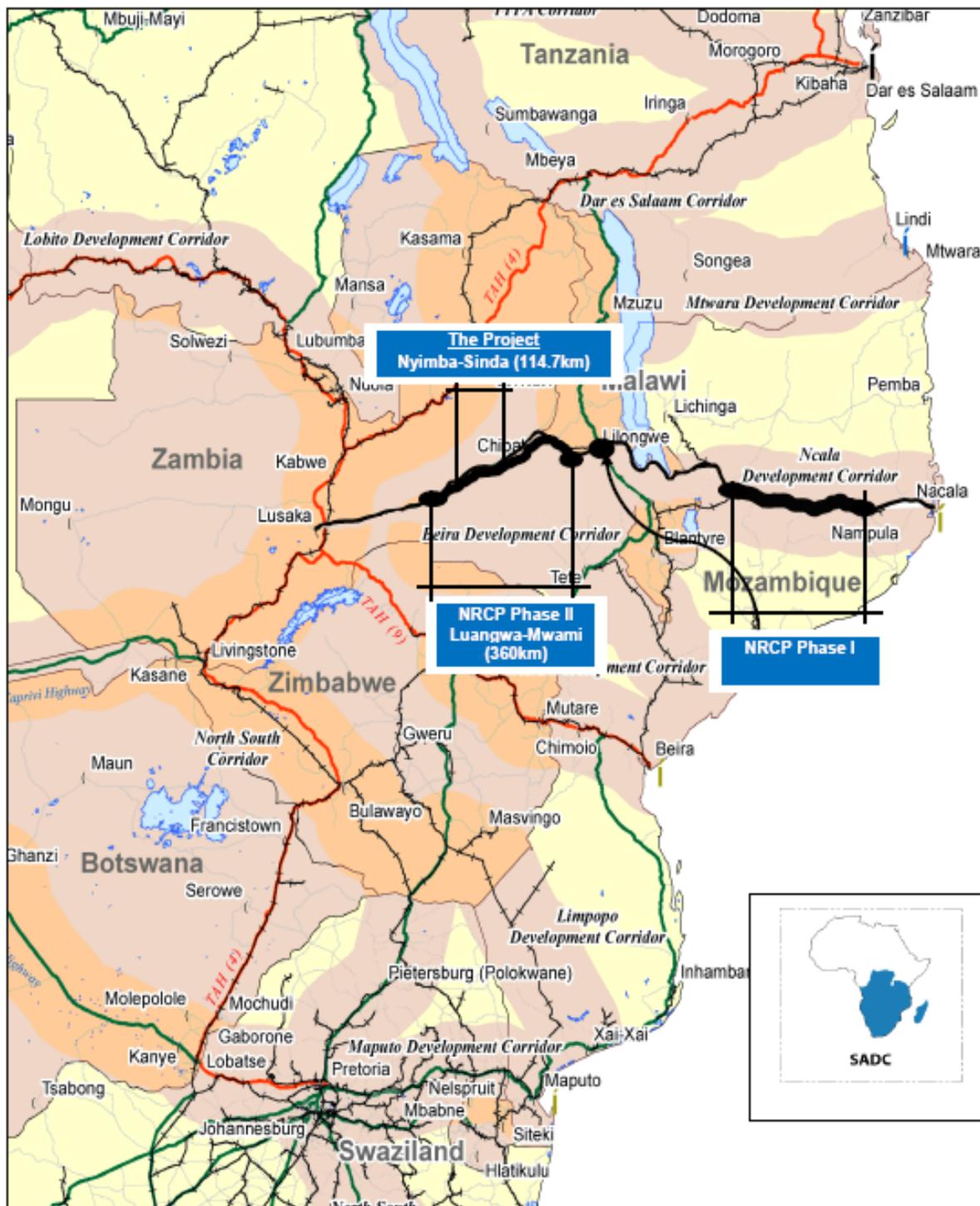
No.	Project Name	Source of Funding	Region	Type of Works	Contract Sum (EUR Million)
1.	Zimba-Livingstone, Road Lot 2, Contract A	European Union	Southern	Full reconstruction	19
2.	Zimba-Livingstone, Road Lot 2, Contract B	European Union	Southern	Full reconstruction	35
3.	North Western and Central Province Feeder Roads	European Union	Central	Re-gravelling and rehabilitation	6.1
4.	Choma Agricultural Feeder Roads	World Bank	Southern Province	Spot improvement and rehabilitation	3.5
5.	Chongwe Agricultural Roads	European Union	Eastern Province	Spot improvement and rehabilitation	1.9

2. Planned Projects

No.	Project Name	Source of Funding	Region	Type of Works	Contract Sum (EUR Million)
1.	Lusaka-Chirundu Road	World Bank	Lusaka	Rehabilitation	40.5
2.	Luangwa-Mwami Road (Nacala Road Corridor Project, Phase II)	EU, AfDB, EIB and other financier TBD	Eastern	Rehabilitation	220
3.	Kalabo-Sikongo Road	BADEA, KFEAD, SFD, OFID	Western	Upgrading to bituminous standard	45.3
4.	Copperbelt Feeder Roads	BADEA, OFID	Copperbelt	Rehabilitation	12.1

⁹ At the time of AfDB's Appraisal Mission, May 2010

**NACALA ROAD CORRIDOR PROJECT, PHASE II
MAP OF THE PROJECT AREA**



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