



**PROJECT: TIMBOROA – ELDORET ROAD  
REHABILITATION PROJECT**

**COUNTRY: KENYA**

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**PROJECT APPRAISAL REPORT**

*Date: October 2010*

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## Currency Equivalents

As of 01.08.2010

1 UA = 1 SDR  
1 UA = 1.51852 USD  
1 UA = 121.147 KES

## Fiscal Year

1 July – 30 June

## Weights and Measures

1 metric tonne = 2204 pounds (lbs)  
1 kilogram (kg) = 2.200 lbs  
1 meter (m) = 3.28 feet (ft)  
1 millimeter (mm) = 0.03937 inch (“)  
1 kilometer (km) = 0.62 mile  
1 hectare (ha) = 2.471 acres

## Acronyms and Abbreviations

ADB (AfDB)	African Development Bank	IDA	International Development Association
ADF	African Development Fund	JICA	Japan International Cooperation Agency
ADT	Average Daily Traffic	KeNHA	Kenya National Highways Authority
AFD	Agence Francaise de Developpement	KES	Kenya Shilling
AIDS	Acquired Immune Deficiency Syndrome	KRB	Kenya Roads Board
CBO	Community Based Organization	LC	Local Cost
COMESA	Common Market for Eastern & Southern Africa	MTP	Medium Term Plan
EAC	East African Community	NACC	National AIDS Control Council
EIRR	Economic Internal Rate of Return	NGO	Non-governmental Organization
ESAP	Environmental and Social Assessment Procedures	NPV	Net Present Value
ESIA	Environmental and Social Impact Assessment	PAP	Project Affected Persons
ESMP	Environmental and Social Management Plan	PCR	Project Completion Report
EU	European Union	RFP	Request for Proposals
FE	Foreign Exchange	RSIP	Road Sector Investment Program
GOK	Government of Kenya	SPN	Specific Procurement Notice
GPN	General Procurement Notice	STI	Sexually Transmitted Infection
HDM	Highway Design and Maintenance Standard Model	UA	Units of Account
HIV	Human Immunodeficiency Virus	VOC	Vehicle Operating Costs
ICB	International Competitive Bidding		

## Loan Information

Client's information

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**BORROWER:** **REPUBLIC OF KENYA**

**EXECUTING AGENCY:** **KENYA NATIONAL HIGHWAYS AUTHORITY**

Financing plan

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Source	Amount (UA)	Instrument
ADF	35,000,000	Loan
GOV. OF KENYA	3,920,000	Counterpart
<b>TOTAL COST</b>	<b>38,920,000</b>	

ADB's key financing information

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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)	21.14 US\$ million
EIRR (base case)	21.0 %

Timeframe - Main Milestones (expected)

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Concept Note approval	July, 2010
Project approval	November, 2010
Effectiveness	February, 2011
Last Disbursement	February, 2016
Completion	February, 2015
Last repayment	February, 2061

# **PROJECT SUMMARY**

## **Project Overview**

The Timboroa – Eldoret road is part of the Northern Corridor International Trunk Road, which serves as a major transit route for traffic to and from Uganda, Rwanda, Burundi, eastern Democratic Republic of Congo (DRC) and southern Sudan, in addition to promoting the national socio-economic development. The project involves the rehabilitation of 73 km of road section. The total project cost is UA 38.92 million and ADF loan will cover 89.9% (UA 35 million) and the Government of Kenya 10.1 % (UA 3.92 million). The overall project implementation time frame is four years (2011 – 2015).

The people living in the project area, the local traders, business community and service providers and road users are among the direct beneficiaries of the project. In addition to reducing travel time and the traffic accidents, the project will generate employment for the domestic construction industry and the community in the project area. The project also endeavours to allocate at least 20% of unskilled jobs to women. The employees of the project as well as the local community will also benefit from the HIV/AIDS and road safety awareness programs included in the project.

## **Needs Assessment**

The project road was reconstructed in 1992 with bituminous surfacing and currently operates beyond capacity, carrying a weighted average of about 4,200 vehicles per day. The road has since deteriorated and the poor condition of the road represents increased transportation cost and transit time. Other sections of the corridor are also under rehabilitation using financial resource from the World Bank, EU and the GOK. The Bank's involvement will compliment the coordinated effort of donors in increasing the capacity of the corridor by meeting the financing gap for this section.

## **Bank's Added Value**

The Bank is the leading development partner in the road sector in Kenya. The ADB Kenya Field Office is currently the chair of the Roads and Transport Sector Donor Group and leads sector policy dialogue with the Government. The project, serving as a major transit route to the neighbouring landlocked countries and in addition to improving transport efficiency, will facilitate the regional integration. This is in line with the Bank Medium Term Strategy (2008-2012) on promoting infrastructure development and regional integration.

## **Knowledge Management**

By involving the local communities and community based organizations in monitoring conditions along the road, including preservation of road signs, both KeNHA and the Bank will accumulate knowledge on how to engage community members in dealing with environmental issues and guarding against damages and theft to road signs and road infrastructure. This will also help to build ownership of the public properties by the community.

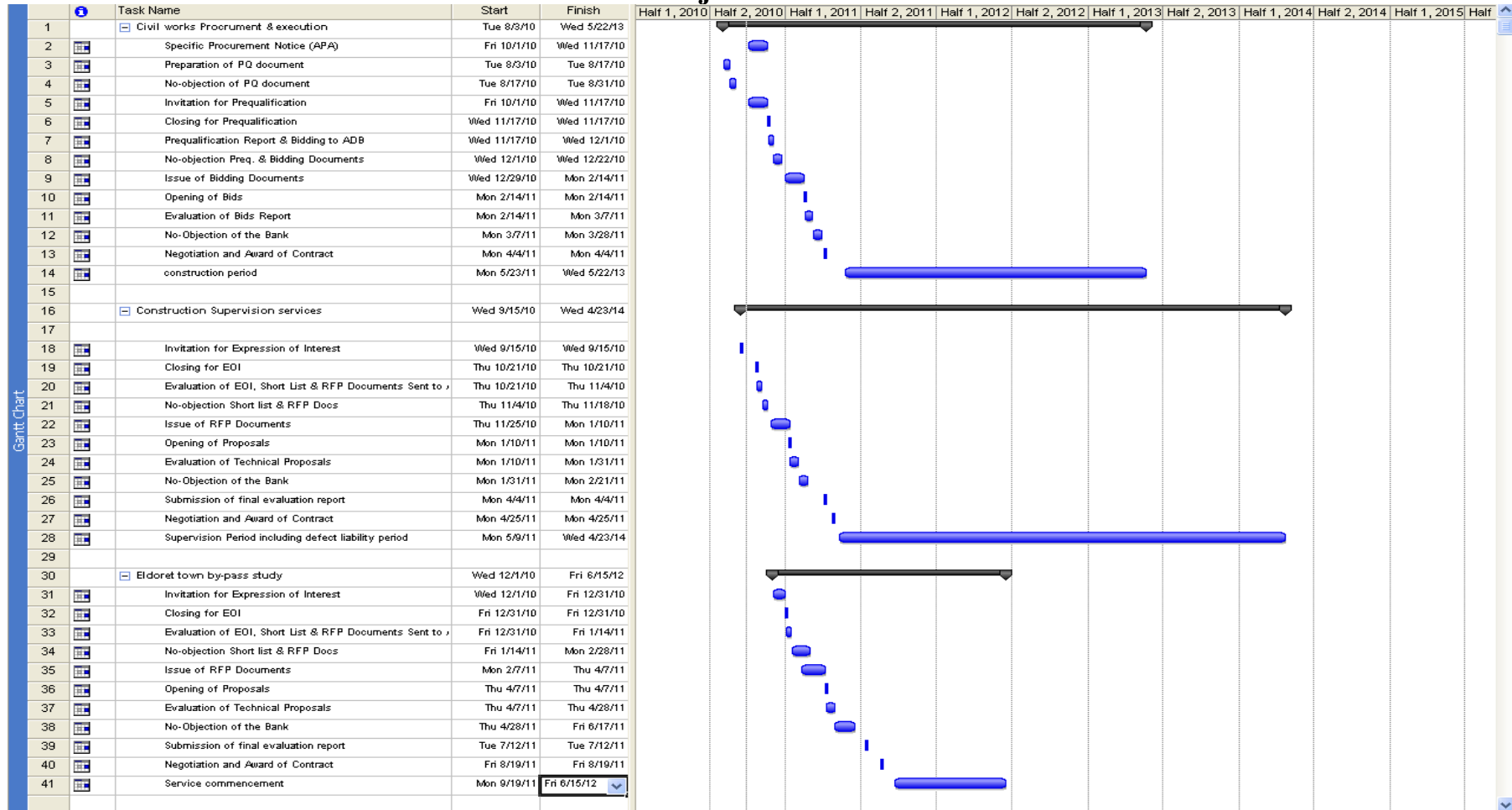
## KENYA: TIMBOROA – ELDORET ROAD REHABILITATION PROJECT

### Results Based Logical Framework

Hierarchy of Objectives	Expected Results	Reach (Target Population)	Performance Indicators Source Method	Indicative Targets Timeframe (Existence of Baseline )	Assumptions / Risks
<p><b>1 - Sector Goal</b></p> <p>1.1 Contribute to improve the reliability of the transport infrastructure system to promote economic growth and socio-economic development in a socially and environmentally sustainable way.</p> <p>1.2 To promote trade and regional integrations.</p>	<p><b><u>Impact - Long Term Results</u></b></p> <p>1.1 Increased transit cargo and Intra-regional trade between Kenya and Uganda, Rwanda, Burundi, Democratic Republic of Congo and southern Sudan.</p> <p>1.2 Improved standard of living.</p>	<p><b><u>Beneficiaries</u></b></p> <p>1.1 Populations of Kenya, Uganda, Rwanda, Burundi, Democratic Republic of Congo and southern Sudan.</p> <p>1.2 Public at large and population of Rift Valley region.</p>	<p><b><u>Indicators</u></b></p> <p>1.1 Transit cargo 1.2 volume of trade 1.3 Incidences of poverty</p> <p><b><u>Sources / Method:</u></b> Customs statistics; Trade statistics from COMESA, IGAD, UNCTAD, WTO, National Statistical Office data and Vision 2030.</p>	<p><b><u>Target</u></b></p> <p>1.1 Transit cargo to increase from 6.3 million tons in 2010 to 10.45 million tons in 2015.</p> <p>1.2 Trade between Kenya and the neighbouring Countries estimated to grow from US\$ 1.32 billion (2010) to US\$ 2.12 billion by 2015.</p> <p>1.3 Poverty (head count) reduced from 39% in 2010 to 28% in 2015.</p>	<p><b><u>Risks</u></b></p> <p>1.1. Favourable macro-economic conditions and terms of trade.</p> <p>1.2 GOK's continued commitment to the implementation of Vision 2030.</p> <p><b><u>Mitigating Assumptions</u></b> 1.1 Continued Government and Development Partner's financial support to the implementation of Vision 2030.</p>
<p><b>2. Project Purpose (Objective):</b></p> <p>2.1 To improve transport communications between Kenya and Uganda, Rwanda, Burundi, DRC and Southern Sudan for the benefit of the region and population of the project area.</p>	<p><b><u>Outcomes - Medium Term Results</u></b></p> <p>2.1 Transport cost and travel time between Nairobi and Kampala reduced.</p> <p>2.2 Improved economic and living standard of people in towns along the corridor.</p> <p>2.3 Improved transportation of farm inputs and produces to and from the project area</p>	<p><b><u>Beneficiaries</u></b></p> <p>2.1 Freight Shippers, Exporters and Importers Transport Operators Business community</p> <p>2.2 Population, within the vicinity of the project area.</p> <p>2.3. Decision making authorities and Financing Agencies.</p>	<p><b><u>Indicators</u></b></p> <p>2.1 Transport and shipping costs.</p> <p>2.2 Travel time for imports and exports.</p> <p>2.3 Volume of transit goods</p> <p>2.4 Agricultural output transported to major markets.</p> <p>2.5 Jobs created</p> <p><b><u>Source:</u></b> Kenya National Highways Authority, Port of Mombasa, NCTCA Transit transport surveys; customs statistics, Consultant's progress reports,, GOK and Bank review reports.</p>	<p><b><u>Target</u></b></p> <p>2.1 Port of Mombasa transit goods to/from Uganda Burundi, Rwanda, DRC and Southern Sudan to increase from 5.83 million tons in 2010 to 9.61 million tons in 2015.</p> <p>2.2 Average transport cost from Mombasa to Kampala of US\$ 0.195 per ton km from Mombasa to Kampala in 2010 reduced to USD 0.137 per ton km by 2015.</p> <p>2.3 Travel (journey) time for heavy vehicles of 24 hours between Nairobi and Malaba (boarder of Kenya and Uganda) in 2010 reduced by 25% to 18 hours by 2015.</p> <p>2.4 Tonnage of agricultural product to be transported from the project area to increase by 32% from 0.2 million in 2010 to 0.26 million in 2015.</p>	<p><b><u>Assumptions</u></b></p> <p>2.1. Kenya and the EAC countries remain committed to regional cooperation within COMESA.</p> <p>2.2 Peace and stability is maintained in Kenya and the EAC countries.</p> <p><b><u>Risks</u></b> 2.3 Heavy goods vehicle overloading.</p> <p><b><u>Mitigating Measures</u></b> 2.4 Axle load control on the project road has been incorporated.</p>

<b>3. Resources and Activities:</b>	<b>Short Term Outputs:</b>	<b>Beneficiaries</b>	<b>Indicators</b>	<b>Target</b>	<b>Risks</b>																								
<p>3.1 Rehabilitation of Timboroa – Eldoret.</p> <p>3.2 Supervision of works.</p> <p>3.3 Consultancy services for the feasibility ESIA and detailed engineering design study of Eldoret Bypass.</p> <p>3.4 Audit services.</p> <p>3.5 Compensation and relocation of services.</p> <p style="text-align: center;"><b>Inputs:</b> <u>Inputs - millions UA:</u></p> <table border="0"> <tr><td>Civil Works</td><td style="text-align: right;">31.63</td></tr> <tr><td>Supervision Consultancy</td><td style="text-align: right;">1.25</td></tr> <tr><td>Eldoret By-pass study</td><td style="text-align: right;">0.92</td></tr> <tr><td>Audit consultancy</td><td style="text-align: right;">0.10</td></tr> <tr><td><u>Compensation &amp; Relocation of Services</u></td><td style="text-align: right;"><u>0.13</u></td></tr> <tr><td><b>Base Cost</b></td><td style="text-align: right;"><b>34.03</b></td></tr> <tr><td>Physical Contingencies</td><td style="text-align: right;">3.39</td></tr> <tr><td>Price escalation</td><td style="text-align: right;">1.50</td></tr> <tr><td><b>Total Project cost</b></td><td style="text-align: right;"><b>38.92</b></td></tr> </table> <p>Sources of financing (million UA)</p> <table border="0"> <tr><td>ADF Loan</td><td style="text-align: right;">35.00</td></tr> <tr><td>GOK</td><td style="text-align: right;">3.92</td></tr> <tr><td><b>Total</b></td><td style="text-align: right;"><b>38.92</b></td></tr> </table>	Civil Works	31.63	Supervision Consultancy	1.25	Eldoret By-pass study	0.92	Audit consultancy	0.10	<u>Compensation &amp; Relocation of Services</u>	<u>0.13</u>	<b>Base Cost</b>	<b>34.03</b>	Physical Contingencies	3.39	Price escalation	1.50	<b>Total Project cost</b>	<b>38.92</b>	ADF Loan	35.00	GOK	3.92	<b>Total</b>	<b>38.92</b>	<p>3.1 Road between Timboroa and Eldoret (73 km) rehabilitated to bituminous (Asphalt Hot Mix) standard with 7.0 m carriageway and 2x2.0 m shoulders.</p> <p>3.2 ESMP implemented and relocation of utilities done.</p> <p>3.3 Construction workers and local communities sensitized and fully informed about HIV/AIDS/STI and road safety.</p> <p>3.4 Obtained feasibility, EIA and preliminary engineering design for Eldoret Bypass.</p> <p>3.5 Employment created.</p>	<p>3.1 Local, Regional and international contractors and consultants.</p> <p>3.2 Business community, local traders and service providers.</p> <p>3.3 Road users and Communities in project areas.</p>	<p>3.1 Length of rehabilitated road and open to traffic.</p> <p>3.2 Number of HIV/AIDS and STI awareness and prevention; and road safety campaigns implemented in partnership with local CBOs and NGOs.</p> <p>3.3 Number of communities sensitized on gender equity and inclusiveness.</p> <p>3.4 Number of local employees (disaggregated by gender).</p> <p>3.5 ESMP implemented.</p> <p>3.6 Award, commencement and final completion of consultancy services for the feasibility, ESIA and preliminary engineering design study.</p> <p><u>Source / Method</u> : Quarterly financial and technical reports, Technical and Financial Audit reports, Disbursement Records, Bank Supervision missions and Mid– Term review , Consultants Quarterly and Progress Reports, Interim and final feasibility, EIA and preliminary engineering design.</p>	<p>3.1 35 km of road rehabilitated and opened to traffic by June 2012.</p> <p>3.2 73 km road rehabilitated between Timboroa - Eldoret by end 2013.</p> <p>3.3 At least eight communities/settlements plus Eldoret town received road safety and HIV/AIDS and STI awareness and prevention program targeting vulnerable/marginalized group (women, youth (in-and out-of school), the disabled, etc.) by 2014.</p> <p>3.4 at least eight communities sensitized about gender by 2012.</p> <p>3.5 Road side market sheds and parking space constructed at Timboroa with water and sanitation.</p> <p>3.6 Approx. 160 skilled, semi-skilled and unskilled jobs created during peak operation of which at least 20% will be for women during road construction by 2014.</p> <p>3.7 100% implementation of ESMP by 2014. At least 2000 trees planted along the project road by 2014.</p> <p>3.8 Submission of final feasibility, ESIA/RAP and preliminary design reports of the by-pass to GOK by December 2012.</p>	<p>3.1 Delays on disbursement of counterpart funds and compensation.</p> <p>3.2 Cost overrun.</p> <p>3.3 Effective coordination of project implementation.</p> <p>3.4 Impact of climate change, specifically flood due to excessive rainfall</p> <p>3.5 Deterioration of pavement condition between design and actual commencement.</p> <p><b>Mitigating Measures</b></p> <p>3.1 GOK is committed to increase budget allocation to the road sub sector.</p> <p>3.2 Proper review of design has been undertaken; recent data are used for cost estimation, planned to implement the project as per the time schedule, and provision has been made for price escalation in cost estimates.</p> <p>3.3 With respect to delay in project implementation, Advanced Contracting is used and also more pro active role will be played by the Bank.</p> <p>3.4 The design will provide for adequate drainage structures along the entire project road.</p> <p>3.5 Proper pavement review and provision for construction traffic deviations.</p>
Civil Works	31.63																												
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## Project Time Frame



# **REPORT AND RECOMMENDATION OF THE MANAGEMENT OF THE ADB GROUP TO THE BOARD OF DIRECTORS ON PROPOSED LOAN TO KENYA FOR THE TIMBOROA – ELDORET ROAD REHABILITATION PROJECT**

Management submits the following Report and Recommendation on a proposed loan for UA 35.00 million to the Republic of Kenya to finance the Timboroa – Eldoret Road Rehabilitation Project.

## **I. STRATEGIC THRUST & RATIONALE**

### ***1.1. Project linkages with countries strategies and objectives***

1.1.1 The Government of Kenya launched the long-term development strategy, Vision 2030, and the first five-year Medium Term Plan (MTP) for the period 2008-2012. The MTP has three overarching pillars namely: economic, social and political. One of the foundations that the pillars are anchored on is expansion of economic infrastructure, which is dependent on the development of physical infrastructure. These pillars are consistent with those in the Bank's Medium Term Strategy (2008-2012). This is also in harmony with the main purpose of the Road Sector Investment Program (RSIP) 2010 – 2014, which is “*to provide good roads for a globally competitive and prosperous Kenya*”.

1.1.2 The proposed road rehabilitation project falls within the pillar I of the Bank's current 2008 – 2012 CSP for Kenya, which focuses on supporting infrastructure for enhanced growth. The rehabilitation of this project, among others, will facilitate regional integration by improving the road condition. The project will also reduce the travel time by 25% and contribute to the reduction of poverty (head count) from current 39% to 28% in 2015. These are consistent with those in the Bank's Medium Term Strategy (2008-2012) whose pillars are (i) supporting infrastructure development for enhanced growth, and (ii) enhancing employment opportunities for poverty reduction

### ***1.2. Rationale for Bank's involvement***

1.2.1 Kenya's strategic location, with access to the sea and its transport network serving a number of landlocked countries and regions, makes it the premier transport and communication hub in the region. However Kenya's road transport network is overloaded and requires upgrading, rehabilitation and expansion. Being part of the A104 International Trunk Road, the project road forms an integral section of the Northern Corridor and, as such, functions as a major transit route for traffic to and from Uganda, Rwanda, Burundi and South Sudan. The road is heavily trafficked by both cargo and passenger vehicles. The poor condition of some sections of the Northern Transport Corridor has resulted in the increase of transport costs in the project area as well as in neighbouring landlocked countries. The timely rehabilitation of the road will not only help to reap the benefits sooner but also avoid the need for total reconstruction of the road.

1.2.2 The Bank is the leading Development Partner of the GOK in the road sub- sector. With its rich experience in road sector development in Kenya as well as the continent, the Bank is well placed to support the proposed project, which not only reduce the high land transport cost but also plays significant role in facilitating regional integration.

### 1.3. Donors coordination

Sector or subsector	GDP	Size Exports	Labor Force
Road Transport	7.56%*		
Players - Public Annual Expenditure (average)**			
Government	Donors		
[UA m]	[UA m]		
243	249		% (UA million)
49.4%	50.6%	<i>AfDB</i>	30.6(76.2)
		<i>World Bank</i>	26.8(66.7)
		<i>China</i>	13.6(33.9)
		<i>EU</i>	9.5(23.6)
		<i>AFD</i>	4.9(12.2)
		<i>SIDA</i>	4.8(12.0)
		<i>Kfw - Germany</i>	3.2(8.0)
		<i>OFID</i>	2.8(7.0)
		<i>BADEA</i>	2.3(5.7)
		<i>Saudi Fund</i>	1.0(2.5)
		<i>NDF, Japan, NORAD</i>	0.5(1.2)
Level of Donor Coordination			
Existence of Thematic Working Groups			Yes
Existence of SWAPs or Integrated Sector Approaches			No
ADF's Involvement in donor coordination***			Yes, L
* average of the last five years(2005 – 2009) for transport and storage			
** Average of 2008/09 to 2010/11			
*** L: leader, M: member but not leader, none: no involvement			

Donor coordination in Kenya is carried out at both sector and national levels. The overall Bank collaboration with other Development Partners (DP) in Kenya was formalized in January 2007 with its entry into the Harmonization Alignment and Coordination (HAC) group set up in 2003. The HAC group currently comprises 17 donor partners. The ADB Kenya Field Office is currently the chair of the Roads and Transport Sector Donor Group and leads sector policy dialogue with the Government. The Donor Group meets regularly to harmonize donors' response and positions with respect to institutional, policy and projects financing and implementation issues. The donors group advise and support has contributed to the Government's positive action in establishment of road authorities; preparation of Integrated National Transport Policy; preparation of Road Sector Investment Plan; and Establishment of the National Construction Authority. Recently the Government has established a secretariat, headed by a senior official in the Ministry of Roads, to coordinate donor intervention in the sector.

During Project Preparation and Appraisal, the Bank project team held consultations with the main donors actively engaged in the road sub- sector in Kenya including the EU and the World Bank, who are also currently financing sections of the Northern Transport Corridor starting from either ends of the proposed project. The proposed road was initially to be financed by EU with other two lots from Eldoret to Malaba, however the funds made available could not cover all the three lots and the Bank is covering the gap by financing the proposed road as per the request of GOK.

## II. PROJECT DESCRIPTION

### 2.1. Project components

2.1.1 The GOK has identified efficient transport system as an important prerequisite for achieving the Kenya vision 2030 and beyond. Efficient transport will facilitate national and regional integration, promotes trade and economic development, and contributes to poverty reduction and wealth creation. The transport sector goal is to improve the reliability of the transport infrastructure system and promote economic growth and socio-economic development in a socially and environmentally sustainable way and also to promote trade and regional integrations. The project objective is to improve transport communications between Kenya and Uganda, Rwanda, Burundi, DRC and Southern Sudan for the benefit of the region and population of the project area.

2.1.2 The Timboroa – Eldoret Road Rehabilitation Project is part of the Northern Transport Corridor international road, one of the Government’s priority corridors. The project feasibility study, ESIA and engineering design was done by an international consultant in 2007 and reviewed in 2010. The project involves the rehabilitation of the Timboroa – Eldoret (73 km) section of the corridor with the related supervision and audit services. It also includes study of the Eldoret town by pass to ease the congestion in the town. The completion of the project will increase intra-regional trade between Kenya and the neighbouring countries of Uganda, Rwanda, Burundi, DRC and Sudan. A brief description of the components is indicated in Table 2.1

*Table 2.1: project components*

	COMPONENT NAME	Est. Cost UA ‘000	COMPONENT DESCRIPTION
A	Timboroa – Eldoret Road Rehabilitation Work	31.63	This component involves rehabilitation works for the 73 km road to a bituminous standard (Asphalt Hot Mix) road including earthwork, pavement construction, maintenance/repair of existing bridges, execution of drainage structures, trailer park, road safety devices, lay-bys, and environmental and social mitigation measures.
B1	Construction Supervision services	1.25	This component involves construction supervision services for the civil works described above.
B2	Eldoret Town Bypass study	0.92	This component involves the feasibility study, environmental and social impact assessment and preliminary design study of the Eldoret town bypass.
B3	Project Technical and Financial Audits	0.10	Under this component, KENAO or its appointed auditor will provide project audit services to ensure that the proceeds of the loan are used economically, efficiently and solely for the purpose they are intended. The technical audit will also ensure that the contracting parties are performing as per the requirements of the respective contracts and their objectives are met.
C	Compensation and Relocation of Services	0.13	This component makes provision for adequate compensation of Project Affected People and relocation of utilities.
	<b>Total Base Cost</b>	<b>34.03</b>	

### 2.2. Technical solution retained and other alternatives explored

2.2.1 The design consulting firms evaluated several alternative designs for the road. The recommended option is a 7-m Asphalt-paved carriageway with to 2.0-m sealed shoulders. The adopted solution involves recycling of the existing pavement of the deteriorated section.

The selected pavement structures takes into account the residual bearing capacity of the existing pavement. Hence this design was found to be technically, economically, and environmentally the most adequate solution. The adjoining sections of the road are also constructed using hot mix asphalt.

2.2.2 The suitability of using cement stabilized gravel or lean concrete were analysed and rejected. The former was rejected for the reason that considering the high traffic on the road, it would require long curing period before it would be trafficked on or for the AC to be laid on it, while the lean concrete, beside being the most expensive, would require to be laid to a minimum thickness of 150 mm and that it would be vulnerable to shrinkage cracking which would negatively impact on the performance of the intended asphalt concrete overlay.

### 2.3. *Project type*

2.3.1 The ADF financing will support rehabilitation of the identified road project and related studies. The investments against which funds are to be disbursed are well defined and specific. Therefore, the specific project loan has been chosen as the most appropriate instrument for the intervention of the Bank in this operation.

### 2.4. *Project cost and financing arrangements*

2.4.1 The overall project cost estimate (net of taxes) is UA 38.92 million (KES 4,715.26 million) of which the foreign exchange cost is UA 28.91 million (KES 3,502.82 million) or 74.3 % of the total, and the local cost is UA 10.01 million (KES 1,212.45 million) or 25.7% of the total. The project cost estimates are based on feasibility and detail design studies of the project as well as in consideration of unit prices of project area recent international tenders of Eldoret – Malaba, June 2010.

2.4.2 The proposed project will be co-financed by the Bank Group and GOK. The Bank financing will be in the form of ADF loan amounting to UA 35.00 million representing 89.9% of the total project cost. The Government counterpart contribution represents 10.1% of the cost and amounts to UA 3.92 million.

2.4.3 The ADF resources for the project will come from the ADF-XI PBA national allocation for Kenya. The project cost estimates by component, by source of financing and by category of expenditure are summarized in Tables 2.1, 2.2 and 2.3 respectively. The expenditure schedule by component is also presented in Table 2.4. Detailed costs and expenditure schedules are provided in Annex B3.

**Table 2.1 - Project Cost Estimates by Component (Net of Taxes)(UA million)**

<b>Component</b>	<b>Foreign Exchange</b>	<b>Local Cost</b>	<b>Total</b>	<b>% foreign</b>
A. Road Construction Civil Works	23.72	7.91	31.63	75.0
B. Consultancy Services	1.80	0.48	2.27	79.1
C. Compensation	-	0.13	0.13	0
Total Base Cost	25.52	8.52	34.03	75.0
Physical Contingency	2.55	0.84	3.39	75.3
Price Contingencies	0.84	0.65	1.50	56.3
<b>Total</b>	<b>28.91</b>	<b>10.01</b>	<b>38.92</b>	<b>74.3</b>

*Table 2.2 - Sources of Financing (UA million)*

Source of Financing	Foreign currency Cost	Local currency Cost	Total costs	% Total
ADF loan	28.91	6.09	35	89.9
GOK	0.00	3.92	3.92	10.1
<b>Total Project cost</b>	<b>28.91</b>	<b>10.01</b>	<b>38.92</b>	<b>100</b>

*Table 2.3 – Project Cost by category of expenditures (UA Million)*

Country	Foreign currency Cost	Local currency Cost	Total Cost	% of foreign
Works	23.72	7.91	31.63	75.0
Services	1.80	0.48	2.27	79.1
Miscellaneous	-	0.13	0.13	0
<b>Total Base Cost</b>	<b>25.52</b>	<b>8.52</b>	<b>34.03</b>	<b>75.0</b>
Physical Contingency	2.55	0.84	3.39	75.3
Price Contingency	0.84	0.65	1.50	56.3
<b>Total Project Cost</b>	<b>28.91</b>	<b>10.01</b>	<b>38.92</b>	<b>74.3</b>

*Table 2.4 – Expenditure schedule by component (UA Million)*

component	2011	2012	2013	2014	Total
A. Road Construction Civil Works	3.80	15.81	10.44	1.58	31.63
B1. Supervision	0.25	0.57	0.34	0.09	1.25
B2. By-pass Study	0.46	0.46	-	-	0.92
B3. Audit Services	0.03	0.05	0.02	-	0.10
C. Compensation	0.13	-	-	-	0.13
<b>Total Base Cost</b>	<b>4.67</b>	<b>16.88</b>	<b>10.81</b>	<b>1.67</b>	<b>34.03</b>

## **2.5. Project's target area and Beneficiaries**

2.5.1 The direct target population is considered to be the population within Uasin Gishu District (within which the entire road project is located), currently estimated at 894,179 people (2009 census). However, as the road provides a crucial national and international link along the Northern Corridor route, extending from the port of Mombasa to Uganda, Rwanda, the DRC, Sudan and Burundi; the indirect population served by the road is thus far greater. The improved project road will therefore lead to increased transit cargo and intra-regional trade. As a result it is anticipated that transport costs, and travel and transit time, between Nairobi and Kampala will be reduced, and this will have a beneficial impact on the economic and social welfare of people living in towns along the corridor.

## **2.6. Participatory process for project design and implementation**

2.6.1 The project was identified as a priority for intervention during the formulation process of the road sector plan. The road sector plan is part of the Vision 2030 and the Medium Term Plan for Kenya. The development of these documents and determination of priorities benefited from feedback and inputs from various stakeholders (public, private, NGOs and civil society). Development partners have prioritised the rehabilitation and upgrading of the regional links including the Northern Corridor and provided support to other sections of the same corridor.

2.6.2 Consultations were held with communities and individuals living in close proximity of the project road, including local elders and local leaders (chiefs, sub-chiefs), vehicle drivers, business people, women's representatives, and youth in the context of conducting the ESIA. In addition, the Environmental and Social Unit in KeNHA, the Ministry of Roads, Kenya Forest Service, Ministry of Education, Ministry of Gender and Children's Affairs, and the National AIDS Control Council, among others, were consulted and contributed towards its formulation.

## ***2.7. Bank Group experience, lessons reflected in project design***

### **Status and Impact of Prior Bank Intervention in the Sector**

2.7.1 The Bank Group has since 1967 participated in the financing of 73 projects in all sectors. To date, Bank lending to Kenya under the public sector window exceeds UA 1.5 billion. Currently, the Bank Group public sector portfolio in Kenya comprises of 24 operations (including Multinationals) amounting to UA 807.8 million, with a disbursement of UA 164.8 million (20.41%) at August 2010. Out of the total Bank's operation, 19 are in the transport sector amounting to UA 480.64 million and covering 17 projects in the road sub-sector, one railway project, and one road study. 14 of the operations have been completed. The recent PCR prepared for transport project was in February 2006 for Ziwa – Kitale Road Upgrading Project. Currently there are four ongoing and one approved projects in the transport sector. The transport projects include the construction of more than 1000 km of paved roads, and the maintenance and rehabilitation of 2900 km of rural roads. The total disbursement to date is UA 214.85 million which gives a sectoral disbursement rate of 44.7% including the recently approved project and 60.41% excluding the recently approved project. The current supervision ratings of the four active projects indicate that all projects are non problematic projects but two of the projects are potentially problematic. The completed projects have made a significant contribution towards strengthening the infrastructure base of the Kenyan economy by improving mobility and access to socio-economic opportunities for several millions of people, improving regional integration and linking rural and urban areas in the most productive provinces of the country including Nyanza, Western, Central and Rift Valley.

### **Lessons Learned and Reflected in project Design**

2.7.2 The project design has taken into account lessons learned from the ongoing projects as well as previous interventions by the Bank and other donors in the transport sector in Kenya. In the past interventions of the Bank, implementation has been characterized by start-up delays, low disbursement levels, lack of local counterpart funds, increase in construction cost and poor reporting and auditing. It is also noted that the recent improvement in the performance of the Implementing Agency in follow up of ongoing Bank financed projects is encouraging.

2.7.3 The proposed project design will reflect these lessons. By starting procurement prior to Board approval (Advance Procurement Action), project start-up delay will be considerably reduced. The GOK has established autonomous highway authorities in order to improve governance and management in the road sector. The technical assistance components in ongoing Bank financed projects are expected to improve the auditing, reporting and project management capacity of the authority. The significant increases in budgetary allocation for road sub sector in Kenya will enable the GOK to adequately meet its local counterpart funds obligation under the loan. Furthermore, the part to be financed by GOK, including compensation costs, is about 10% of the total project cost. To minimize the gap between the engineers estimate and the tender prices, the condition of the pavement was recently

reviewed, and the civil works estimates have been revised accordingly. Realistic contingencies have also been applied.

## **2.8. Key performance indicators**

2.8.1 The achievement of the project objectives would be measured using the following indicators: (i) Reduction in transport cost between Mombasa and Kampala; (ii) increase in trade between Kenya and the neighbouring Countries; (iii) increase in tonnage of agricultural product to be transported from the project area; and (iv) reduction in travel time between Nairobi and Malaba. Basic indicators for monitoring and evaluating project outcomes are included in the Project Results Based Logical Framework.

2.8.2 The project design consultants have collected some of the baseline data. Additional baseline values will be collected at the beginning of project implementation by the Supervision consultant. These additional data include: travel time for a specific type of vehicle and trip, accident rates, Gender differential in roles and responsibilities, and HIV/AIDS prevalence. The indicators will be measured at project inception, completion, and 3 years later, and results compared with the baseline. Where relevant, indicators will be disaggregated by gender. The Kenya National Highways Authority in collaboration with Kenya Bureau of Statistics will be responsible for collecting the data.

## **III. PROJECT FEASIBILITY**

### **3.1. Economic and financial performance**

3.1.1 The methodology for the economic analysis is based on cost benefit analysis by comparing the “with” and “without “ project scenarios over a period of 15 years, using the Highway Development and Management Model (HDM-4). A discount rate of 12%, a standard conversion factor (SCF) of 0.80 for converting financial costs to economic costs, a residual value of 10% and rehabilitation period of 2 years starting June 2011 are adopted. The economic costs consist of (i) the capital investment costs and (ii) the routine and periodic maintenance expenses. The benefits consist of savings in (i) vehicle operating costs; and (ii) motorized traffic travel time for passengers and cargo. The measures of project worth used are the EIRR, and NPV. The traffic and economic analysis results are presented in Annex B7. The summary of the economic analysis is presented in Table 3.1 below.

*Table 3.1: Key Economic and Financial Figures*

EIRR (base case)	21.0%
NPV (12% Discount)	US\$ 21.14 million
EIRR (+20% costs & -20% benefits)	13.4%

### **3.2. Environmental and Social impacts**

#### **Environment**

3.2.1 The Timboroa-Eldoret Road project is 73 km in length and has been assigned Category I in accordance with the Bank’s ESAP and guidelines which stipulate a threshold of over 50 km. A full ESIA combined with an ESMP has been prepared for the road dated June 2010. The Executive Summary of the ESIA was prepared and posted on the Bank’s website on June 28, 2010 and distributed to the Board under reference ADF/BD/IF/2010/164.

3.2.2 The project works will be confined to the existing alignment, while improvements to the horizontal and vertical alignments will be contained within the road reserve. The project

will not necessitate resettlement, and does not affect any environmentally sensitive areas. Hence, no significant adverse environmental impacts are envisaged. The main environmental issues will result from construction activities, particularly dust and air emissions, noise and vibration, clearing of vegetation, soil erosion due to excavation and earthworks, pollution of soil and water sources from spillage/leakage of oil and oil products and sediment loading. Other environmental impacts include those due to the disposal of solid and liquid wastes, and sources and use of water. These impacts will be mitigated through appropriate design considerations, incorporation of appropriate conservation and protection measures, and proper planning and supervision during construction. The main social impacts will be due to temporary land take, necessary only for the purposes of the Contractor's camp, materials sites and deviations, for which provision for compensation has been made in the BOQ. A traffic management plan will be developed to mitigate traffic disruption during construction. When the road is operational, road accidents will occur, but will be reduced through speed restrictions. Other concerns include the need to recruit members of the local communities in the workforce, and the propagation of STI/HIV/AIDS prevention and awareness, particularly during operation.

3.2.3 Environmental mitigation costs are estimated at KES 15,624,230/-. In addition, the Bills of Quantities/Engineer's Estimate includes environmental and social mitigation costs amounting to KES 196,292,758/- which covers the Road Safety campaign, HIV/AIDS awareness and prevention programmes, drainage and river training, road furniture, tree planting, land acquisition for the contractor's camp and deviations, and rehabilitation of materials sites.

### **Climate change**

3.2.4 This project is not likely to contribute negatively on climate change owing to its nature of being a road rehabilitation project. Among the several alternatives considered for the road design, asphalt paved road was given priority for two important climate change related reasons over and above other technical reasons. One is that asphalt can be recycled and therefore has long life in terms of reusability and second reason is that project would be able to use the reclaimed asphalt pavement of the deteriorated section. Increased use of reclaimed asphalt pavement as percentage of the total asphalt mix can significantly reduce Green House Gas (GHG) emissions by eliminating the significant fuel consumption required to acquire and process raw material for virgin mix.

3.2.5 The project area receives a mean annual rainfall of between 995 mm and 1,340 mm, and is well distributed throughout the year, peaking in July/August. The design has taken into account higher anticipated hydrological flows in consideration of design of drainage structure keeping in mind excessive rainfall that may take place as a result of climate change phenomena. Existing pipe culvert of smaller size will be replaced by bigger size box culvert. Outfall channels will be constructed; protection works will be done on the upstream and down stream of the structures all along the entire project road. Suitable provisions will be built in the project design for maintenance of these structures during operation to enable adequate protection against climate susceptibility.

3.2.6 In order to offset the increase in GHG emissions resulting from road construction and rehabilitation projects under its jurisdiction, KeNHA has begun to plant trees along all its roads and highways. Apart from sequestering carbon emissions from road traffic, this contributes to reducing dust and noise levels and improving aesthetics. In line with this initiative, KES 2.28 million has been allocated for the tree planting programme to allow the Contractor to plant 10 trees per km along the project road. During the construction period,

the Contractor will be responsible for caring for the trees, but after the defects liability period, KeNHA in collaboration with the Kenya Forest Service and/or the local administrations (e.g. Eldoret Municipality) will ensure that the trees thrive. The Timboroa-Eldoret road project will therefore enhance ongoing support to the Forest Station at Timboroa by Pan Paper Mills, Raiply and Kenya Power and Lighting Company, who provide funding and indigenous seedlings to the forest reserves in the project area

## **Gender**

3.2.7 The project is not expected to negatively impact on gender equity during implementation and thereafter. However, it suffices to note that men and women selling produce by the road side will temporarily be affected during the earthmoving works in the form of disruption to clientele, dust and noise. While the road works will improve opportunities for getting jobs at the construction sites, traditions and practices are often discriminatory against women as construction jobs are considered to be the preserve of men. The presence of construction workers earning above average incomes and often coming without their families may threaten the security of women leading to the breaking up of marriages, unwanted pregnancies among girls, school dropouts, early marriages and the spread of STI/HIV/AIDS whose incidence is higher on women than men.

3.2.8 The project has taken several measures to mitigate any potential negative impacts on women and to enhance the project benefits. To improve vending conditions and road safety, the road design has incorporated provision of purposefully built sheds and stalls where women and men sell their produce. Increased incomes associated with project workers will increase demand for local produce, hence more income for women vendors selling groceries and fresh produce along the road. The project will create job opportunities for local communities, where women stand a chance of securing employment. The contract documents will commit the Contractor to allocate not less than 20% of all jobs (semi-skilled and unskilled) to women. In addition the Contractor will be required to make provision for gender sensitive camp facilities, and promote gender awareness and sensitization at the camp and at community level. The project will offer STI/HIV/AIDS prevention and awareness campaigns and activities which will give an opportunity to women and girls, who otherwise may not have had the chance, to receive first hand information regarding the epidemic.

## **Social**

3.2.9 The road will ensure wider and better regional connections, linking the port of Mombasa with Uganda and the other land locked countries of Rwanda, Burundi, eastern DRC and south Sudan. The road will reduce transportation costs and travel time, promote trade and investment and stimulate economic growth of under-exploited sectors like agriculture, fisheries, and forestry. Local communities will be able to easily access social services such as health and educational facilities. This being an agriculturally rich area, communities will benefit from improved transportation systems to access farm inputs and markets for grain, vegetables, timber and dairy products at business centres in Eldoret, Nakuru, Nairobi and Mombasa. The project will create employment opportunities during peak operations for approximately 160 members of the local communities (60 unskilled and 100 semi-skilled jobs). To avoid social conflicts over available jobs, the local communities will be notified of upcoming employment opportunities in a timely manner. Communities residing adjacent to the project road will be given priority for available jobs with due consideration to gender equity.

3.2.10 As noted above, construction workers earning above average incomes are associated with the spread of STI/HIV/AIDS. The road project has set aside KES 3.0 million towards an

STI/HIV/AIDS awareness and prevention campaigns. The contract documents will commit the Contractor to outsource short-term consultancy services of an HIV/AIDS expert who will work with the local communities, CBOs, FBOs and existing decentralized structures of NACC at constituency, district, and regional levels. The influx of road construction workers and job speculators into the project area may result in an increase in crime rates, and also exert pressure on local resources and facilities such as water, accommodation, and health facilities. The Contractor shall seek alternative sources of water, provide gender sensitive camp facilities, and collaborate with local authorities to strengthen security. Increased accidents affecting local communities, construction workers and road users will be addressed through incorporating road safety measures, and implementing a road safety awareness campaign for which KES 4.0 million has been allocated in the Bills of Quantities.

### **Compensation and Relocation**

3.2.11 During the ESIA exercise it was noticed that a number of people had encroached on to the road reserve where they were selling fruit, vegetables and groceries to passing vehicles especially at Timboroa. Apparently the then Ministry of Transport and Communications permitted the road-side vending operations in a letter dated 22 May 1984. In accordance with the conditions stipulated in the said letter, Government through KeNHA, on 4 June, 2010, discussed with the vendors and kiosk owners at Timboroa and an agreement was reached to shift out of the road reserve within three months to give way leave for the road rehabilitation works. In collaboration with the local chief, the District Administration and Kenya Forest Service (KFS), the road side vendors and kiosk operators have shifted their structures from the road reserve to an alternative location some 15 m immediately adjacent to the road reserve. This land has been rented by the vendors' association from the KFS under the Plantation Establishment and Livelihood Improvement Scheme (PELIS). By 13th August 2010, most of the kiosks had been shifted and re-established on the newly allocated 0.4 ha piece of land. In order to improve the marketing conditions at the new location with respect to hygiene, environment and road safety, the project will construct purposefully designed stalls and sheds for the vendors at Timboroa; provide a water point (in collaboration with Rift Valley Water Board), provide facilities for waste disposal and pit latrines. These interventions will enhance the project benefits; agreements were arrived at during discussions with the affected persons and district representatives; and are included in the BOQ.

## **IV. IMPLEMENTATION**

### **4.1. Implementation arrangements**

#### **Executing Agencies**

4.1.1 The Kenya National Highways Authority (KeNHA) will be the Executing Agency for the project under the oversight of the Permanent Secretary, Ministry of Roads. The Director General of KeNHA shall also designate a Project Coordinator, acceptable to the Bank, for the day-to-day management of the project. The Project Coordinator will be stationed at the KeNHA Headquarter and reports to the Manager responsible for Construction. KeNHA is well versed with Bank procedures and currently is implementing donor financed projects including the Bank. A capacity building component to KeNHA is also included under a Bank loan approved in 2009 to develop a Five-Year Business plan and modern business processes; to build capacity in procurement and financial management; and provision of specialized ICT and software for modern highway management systems. With regard to environmental and social management of the project, the Contractor's Project Manager will be responsible for ensuring the ESMP is properly implemented. The Supervising Consultant's

Environmental/Social Expert, will oversee the Contractor's activities in this respect, coordinate between the Contractor, the community and KeNHA, and liaise with representatives from the local authorities.

## **Procurement**

4.1.2 All procurement of goods, works and acquisition of consulting services financed by the Bank will be in accordance with the Bank's *Rules and Procedures for Procurement of Goods and Works* or, as appropriate, *Rules and Procedures for Use of Consultants*, using the relevant Bank Standard Bidding Documents. KeNHA will be responsible for procurement and the detailed procurement arrangements are provided in Annex B5.

## **Financial Management and Disbursement Arrangements**

4.1.3 The Finance and Administration Division of KeNHA will be responsible for financial management and reporting procedures for the project. A well-documented Financial Management Manual, which outlines internal control procedures as well as financial reporting arrangement to Government and Donors, has been developed. The executing agency's financial management system will be used to account, record, and report the financial transactions of the project

4.1.4 The loan will be disbursed for categories of expenditure including civil works and consulting services. The Direct Payment Disbursement Method will be used for all the project components. All disbursements will follow the procedures and standard supporting documents outlined in the Bank's Disbursement Hand Book. The Government of Kenya will open a Project Account for the purposes of depositing counterpart funds to finance expenditures for the civil works under the project. The initial deposit in this Project Account will be KES 47 million and will be a condition to first disbursement of the loan. Thereafter the GOK will deposit in a timely manner, adequate amounts to cover the expected expenditures. KENAO or its appointed auditors will audit the project accounts annually. The audit reports of the ongoing projects are regularly prepared and submitted to the Bank. The reports were reviewed and found to adhere to accepted good practices. Further disbursement details are provided in Annex B4.

## **4.2. Monitoring**

4.2.1 KeNHA shall regularly provide the Bank with quarterly progress reports for the project including the implementation of the environmental and social action plan, in the established format covering all project activities. KeNHA will also be the agency in charge of monitoring the Log Frame. In addition, monitoring of the project will be done through the Bank's semi-annual supervision missions. The monitoring of environmental and social mitigation measures during construction and defects liability period will be carried out by the Contractor's Project Manager, who will provide regular reports to the Supervising Consultant.

4.2.2 After construction, the responsibility for monitoring will lie with the KeNHA's Environmental and Social Unit, as well as with NEMA (through its District Environmental Officer). The need for additional staff in monitoring of mainly ESMP was agreed with the Government during appraisal mission and recruitment of Senior Environmentalist, Sociologist and Transport Economist will be finalized in short time. In addition, KeNHA will recruit members of the local communities living and working alongside the project road to assist in monitoring and policing the road. The Bank will undertake the project mid-term review in third quarter of 2013 to identify any major constraints facing the project and

provide the required corrective measures. Table 4.1 below summarizes the project monitoring timeframe and monitoring process.

*Table 4.1 – Implementation Monitoring Timeframe*

<u>Timeframe</u>	<u>Milestone</u>	<u>Monitoring process / feedback loop</u>
Q1 - 2011	Project Launching	Supervision and Progress Report
Q2 - 2011	Procurement of Civil Works Completed	Procurement Plan/Progress Report
Q3 - 2012	50% of Civil Works completed mid term review	Midterm Review & Progress Report
Q2 – 2013	Substantial completion of civil works	Supervision and Progress Report
Q3 – 2014	End of Defects Liability period	Supervision and Progress Report
Q4 – 2014	Project Completion	Project Completion Report

### **4.3. Governance**

4.3.1 Transparency and accountability in public financial management has improved in Kenya. The Public Procurement and Disposal Act of 2005 have created bodies for the regulation of Public Procurement and have resulted in greater transparency in procurement matters. In the road sector, governance is enhanced with the establishment of the road authorities with a clear mandate and legal identity for each organization involved in the road sector. The Director General’s of KeNHA has the final responsibility of ensuring that the Authority fulfils its obligation under the Public Procurement and Disposal Act of 2005 and the Public Procurement and Disposal Regulation of 2006. The authority is also required to submit reports to Public Procurement Oversight Authority. Other initiatives within the KeNHA include establishment of the Apex Corruption Prevention Committee, formulation of Anti Corruption Strategy, Plan and Policy.

4.3.2 The specific governance risk mitigation measures of the project include: (i) the appointment of external Financial and independent Technical Audit firm to ensure that funds are used efficiently and for the intended purposes; and (ii) Bank prior review and approval of all project procurement activities.

### **4.4. Sustainability**

4.4.1 The Government has identified transport infrastructure development as one of the priority focus areas for medium term action to attain the objectives of Vision 2030. Kenya Roads Board (KRB), which was established in 1999, has ring fenced financing (from fuel levies and transit fees) for road maintenance. The Kenya Road Maintenance Fuel Levy is managed by KRB and the Fund revenue has increased annually on the average by 18% from KES 7.74 billion (USD 99 million) in 2002/03 to 22.65 billion (USD 283 million) in 2009/10. The increase in the fuel levy by 55 percent (from KES 5.8/litre to KES 9.0/litre) in 2006 has doubled the Road Fund Revenues and shows the commitment of the Government to the sustainability of the roads subsector. The Fund allocates 40% of its collection to Kenya National Highways Authority (KeNHA), 32% to Kenya Rural Roads Authority (KeRRA), 15% to Kenya Urban Roads Authority (KURA), 1% to Kenya Wildlife Service (KWS), 2% to KRB and 10% to development projects of Road Agencies.

4.4.2 Furthermore, the road sub-sector has undergone reforms that include the establishment of three road authorities for the management, financing, and maintenance of roads, namely, KeNHA, KeRRA and KURA in order to improve the sustainability of the road

investment in the country. KeNHA has been mandated to manage the national road network, including the maintenance with financing from the Road Fund. KeNHA is contracting out routine and periodic maintenance to the private sector and is contributing to the enhancement of the development of the domestic contracting industries. The sustainability of the project will depend largely on the ability of KeNHA to implement timely maintenance and to exercise effective axle-load-control on the project road.

4.4.3 To date, private contractors in Kenya carry out nearly 100% of the periodic and 95% of the routine maintenance and the role of the force account units of KeNHA is limited to emergency response only. The increased role of the private sector signals the right direction for the sustainability of investment in the road sub-sector. Furthermore, KeNHA is trying to protect the investment by improving the enforcement of the axle load control and the procurement of additional static and mobile weighbridges to be located at strategically important locations. In addition the project road will benefit from the existing axle load control facility located within this project boundary at Eldoret.

4.4.4 As mandated by the Kenya Roads Act 2007, MOR has finalized the Road Sector Investment Program (RSIP) (2010-2024) to guide the development and maintenance of the road sector. Analysis of road maintenance funding shows that sufficient funds are available to cover routine maintenance of the road network in good and fair condition, from the road fuel levy tax. This does not include the backlog maintenance. According to RSIP, it is estimated that about KES 40 billion is required for the maintenance of the entire road network annually, of which periodic maintenance of paved roads alone requires KES 15 billion. In the medium to long term, GOK is considering widening the road user charging system by incorporating infrastructure bonds, public private partnerships, and upward revision of road maintenance levy fund charges.

4.4.5 With respect to the project, maintenance of the completed sections will be the responsibility of the project contractor during the construction phase and defects liability period. After completion, KeNHA will be responsible for maintenance of the road through financing from the Road Fund. The financial requirement for routine maintenance amounts to USD 130,000 per year, starting 2014 and USD 1.0 million for periodic maintenance in 2020. The impact of the project maintenance costs on Governments' recurrent costs will not be significant and the Government has financial and institutional capacity to carry out the project routine and periodic maintenance. From the foregoing, it is evident that implementation of the measures above will ensure sustainability of the road sub-sector. Annex C2 gives details of road network financing needs and revenues.

## **4.5. Risk management**

4.5.1 One of the risks associated with the project is implementation delays. To mitigate this Advance Contracting will be used, care will be taken to procure suitably experienced civil works contractor and supervising consulting firm, and there will be close supervision and more pro-active role by the GOK and the Bank during project implementation. Cost overrun is the other risk area which the project might face. This risk is mitigated by use of recent data for cost estimation and provision of reasonable contingencies within the cost estimates. Delay in provision of counterpart funds is another risk in Bank's implementation experience. In order to mitigate this risk, a condition of the loan is that the Government would open a project account into which would be deposited in a timely manner, its counterpart funds to finance project expenditures.

4.5.2 The management and control of overloading is also one of the risk areas which will cause premature failure of the road. To mitigate this, Government is conducting a study geared at modernization to enable efficient management of the weigh bridge stations. A temporary axle load weigh station is also located within the project limits and a permanent weigh station at about 100 km from the project area. Shortage of funding for routine and periodic maintenance is most commonly observed risk area. The Government is finalizing a Road Sector Investment Plan, which will ensure preservation of the road asset. This plan will also be closely scrutinized by the transport sector donor group, which is currently chaired by the Bank. The selected hot mix asphalt pavement also offers the advantage of significantly reducing maintenance costs.

#### **4.6. Knowledge building**

4.6.1 By involving the local communities and CBOs in monitoring conditions along the road, including preservation of road signs, both KeNHA and the Bank will accumulate knowledge on how to engage community members in dealing with environmental issues and guarding against theft to road signs and road infrastructure.

### **V. LEGAL INSTRUMENTS AND AUTHORITY**

#### **5.1. Legal instrument**

5.1.1 The Bank instrument to finance this operation is an ADF concessionary loan. The loan amounts to UA 35 million from ADF-XI PBA allocation. The standard ADF loan terms and conditions are applicable to the loan.

#### **5.2. Conditions associated with Bank's intervention**

##### **Conditions Precedent to the Entry into Force of the Loan Agreement**

5.2.1 The entry into force of the Loan Agreement shall be subject to the fulfillment by the Borrower of the provisions of Section 12.01 of the General Conditions Applicable to Loan Agreements and Guarantee Agreements of the Fund.

##### **Conditions Precedent to First Disbursement of the Loan**

5.2.2 The obligation of the Fund to make the first disbursement of the Loan shall be conditional upon the entry into force of the Loan Agreement and the fulfillment of the following condition. The Government shall have:

- (i) Opened a counterpart Project account and deposited therein the initial amount of KES 47 million (forty seven million Kenya Shillings) as the Borrower's counterpart fund to finance expenditure for civil works under the project.

##### **Other Conditions of the Loan**

The other conditions of the loan are:

- (i) Provide evidence to the Bank on the recruitment of Transport Economist, Senior Environmentalist and Sociologist to the KeNHA by February 28, 2011;
- (ii) Provide an undertaking to conduct traffic count at least twice a year on the project road and the national network to develop a data base for planning and programming purposes;

- (iii) Report, on a quarterly basis and in a form acceptable to the Fund, on the status of implementation of the ESMP and on the undertakings specified in the NEMA approval letter of 18 August, 2010;
- (iv) Prior to the construction of any diversion roads and/or any access roads to material sites and quarry sites, an inventory of properties and assets shall be made and evidence submitted to the Fund that full compensation has been paid, or secured for disputed or litigious cases, in accordance with the Fund's Involuntary Resettlement Policy and any applicable Borrower's laws and regulations; and
- (v) Replenish the counterpart Project account, in a timely manner, by the amount required to finance the Borrower's contribution and ensure that funds deposited into the project account are used exclusively to finance expenditures of the project.

### **5.3. *Compliance with Bank Policies***

- This project complies with all applicable Bank policies.
- The following exceptions to Bank policies are recommended for approval. The project complies with all other applicable Bank policies.

## **VI. RECOMMENDATION**

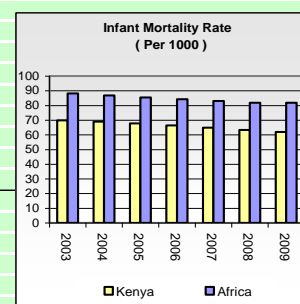
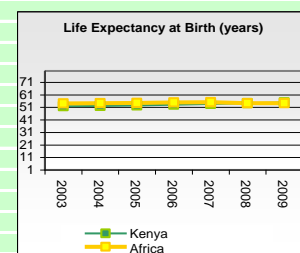
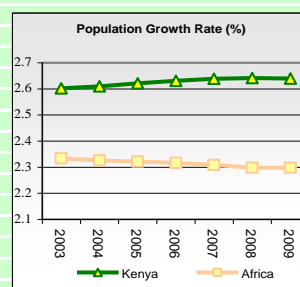
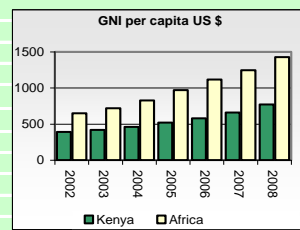
Management recommends that the Board of Directors approve the proposed loan of UA 35.00 million to the Government of Kenya for the purposes and subject to the conditions stipulated in this report.

# Appendix I: Country's Comparative Socio-Economic Indicator

## Kenya

### COMPARATIVE SOCIO-ECONOMIC INDICATORS

	Year	Kenya	Africa	Developing Countries	Developed Countries
<b>Basic Indicators</b>					
Area ('000 Km <sup>2</sup> )		593	80 976	80 976	54 658
Total Population (millions)	2009	39.8	1,008	5,629	1,069
Urban Population (% of Total)	2009	21.9	39.6	44.8	77.7
Population Density (per Km <sup>2</sup> )	2009	68.6	3.3	66.6	23.1
GNI per Capita (US \$)	2008	770	1 428	2 780	39 688
Labor Force Participation - Total (%)	2009	46.2	41.2	45.6	54.6
Labor Force Participation - Female (%)	2009	46.4	41.2	39.8	43.3
Gender -Related Development Index Value	2005	0.521	0.525	0.694	0.911
Human Develop. Index (Rank among 182 countries)	2007	147	0.514	n.a	n.a
Popul. Living Below \$ 1 a Day (% of Population)	2005	19.7	50.8	25.0	...
<b>Demographic Indicators</b>					
Population Growth Rate - Total (%)	2009	2.6	2.3	1.3	0.7
Population Growth Rate - Urban (%)	2009	4.0	3.4	2.4	1.0
Population < 15 years (%)	2009	42.8	56.0	29.2	17.7
Population >= 65 years (%)	2009	2.6	4.5	6.0	15.3
Dependency Ratio (%)	2009	83.3	78.0	52.8	49.0
Sex Ratio (per 100 female)	2009	99.9	100.7	934.9	948.3
Female Population 15-49 years (% of total population)	2009	24.1	48.5	53.3	47.2
Life Expectancy at Birth - Total (years)	2009	54.9	55.7	66.9	79.8
Life Expectancy at Birth - Female (years)	2009	55.3	56.8	68.9	82.7
Crude Birth Rate (per 1,000)	2009	38.4	35.4	21.5	12.0
Crude Death Rate (per 1,000)	2009	11.3	12.2	8.2	8.3
Infant Mortality Rate (per 1,000)	2009	61.8	80.0	49.9	5.8
Child Mortality Rate (per 1,000)	2009	99.7	83.9	51.4	6.3
Total Fertility Rate (per woman)	2009	4.9	4.5	2.7	1.8
Maternal Mortality Rate (per 100,000)	2005	560.0	683.0	440.0	10.0
Women Using Contraception (%)	2006	...	...	61.0	75.0
<b>Health &amp; Nutrition Indicators</b>					
Physicians (per 100,000 people)	2007	27.6	42.9	78.0	287.0
Nurses (per 100,000 people)*	2007	121.9	120.4	98.0	782.0
Births attended by Trained Health Personnel (%)	2003	41.6	50.5	63.4	99.3
Access to Safe Water (% of Population)	2006	57.0	64.0	84.0	99.6
Access to Health Services (% of Population)	2006	...	61.7	80.0	100.0
Access to Sanitation (% of Population)	2006	42.0	38.5	54.6	99.8
Percent. of Adults (aged 15-49) Living with HIV/AIDS	2005	6.1	4.5	1.3	0.3
Incidence of Tuberculosis (per 100,000)	2007	353.0	313.7	161.9	14.1
Child Immunization Against Tuberculosis (%)	2007	92.0	83.0	89.0	99.0
Child Immunization Against Measles (%)	2007	80.0	74.0	81.7	92.6
Underweight Children (% of children under 5 years)	2005	...	25.6	27.0	0.1
Daily Calorie Supply per Capita	2005	2 079	2 324	2 675	3 285
Public Expenditure on Health (as % of GDP)	2006	2.2	5.5	4.0	6.9
<b>Education Indicators</b>					
Gross Enrolment Ratio (%)					
Primary School - Total	2008	111.5	100.2	106.8	101.5
Primary School - Female	2008	110.3	91.7	104.6	101.2
Secondary School - Total	2008	58.3	35.1	62.3	100.3
Secondary School - Female	2008	55.8	30.5	60.7	100.0
Primary School Female Teaching Staff (% of Total)	2008	45.5	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	2006	7.0	4.5	...	5.4
<b>Environmental Indicators</b>					
Land Use (Arable Land as % of Total Land Area)	2007	9.1	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	0.3	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.

## Appendix II: Table of ADB's portfolio in the country

August 2010

PROJECT NAME	Main Sector	Financing Source	Approval Date	Approved Loan UA million		Disb. Ratio
				Loan	Grant	
<b>A. Public - National</b>						
1. Roads 2000 Rural Road Program	Transport/ Roads	ADF Loan	12.07.2001	20		63.68%
2. Nairobi - Thika Highway Improvement	"	ADF Loan	21.11.2007	117.85	3.15	22.00%
3. Rift Valley Water Supply and Sanitation Project	Water & Sanitation	ADF Loan	07.07.2004	13.04	5.02	77.00%
4. Water Services Boards Support Project	"	ADF Loan	21.11.2007	35.19	10.07	1.70%
5. Green Zones Development Support Project	Agriculture	ADF Loan	12.10.2005	25.04		52.40%
6. Ewaso Ng'iro North Natural Resources Conservation Project	"	ADF Loan	22.04.2005	13.59	2.89	32.12%
7. ASAL-Based Livestock and Rural Livelihoods Support Project	"	ADF Loan	17.12.2003	18.41	3.17	75.95%
8. Kimira- Oluch Smallholder Farm Improvement Project	"	ADF Loan	31.05.2006	22.98	1.15	12.26%
9. Small-Scale Horticulture Development Project	"	ADF Loan	05.09.2007	17		4.79%
10. Education III Project	Social	ADF Loan	17.12.2003	24.26	6.75	16.85%
11. Rural Health III Project	"	ADF Loan	07.07.2004	17.18	6.00	17.87%
12. Kenya Institutional Support to Good Governance	Institutional reforms	ADF Grant	26.07.2006		5.52	99.26%
13. Community Empowerment & Institutional Support Project	"	ADF Loan	17.12.2007	17.00		2.00%
14. Technical Industrial Vocational and Entrepreneurship Training (TIVET)	Social	ADF Loan	16.12.2008	25.00		7.08%
15. Integrated Land and Water Management	Water & Sanitation	AWF	06.02.2009		1.94	0.00%
16. Restoration of Farm Infrastructure	Agriculture	ADF Loan	29.04.2009	15.00		1.95%
17. Mombasa - Nairobi Power transmission line	Power	ADF Loan	06.05.2009	50.00		0.00%
18. Small Towns Water and Sanitation	Water & Sanitation	ADF Loan	3.11.2009	70.00		0.00%
<b>Sub-total</b>				<b>547.20</b>		
<b>B. Public - Multinational</b>						
19. Mombasa - Nairobi - Addis Ababa Road Corridor Project	Transport/ Roads	ADF Loan	13.12.2004	33.6	1.20	54.10%
20. Arusha - Namanga - Athi River Road Development Project	"	ADF Loan	13.12.2006	49.24		45.46%
21. Creation of Sustainable Tsetse Eradication Program	Agriculture	ADF Loan	08.12.2004	6.55	0.24	100.00%
22. Nile Equatorial Lakes Electric Grid - NELSAP	Energy	ADF Loan	16.06.2010	39.77		0.00%
23. Mombasa-Nairobi-Addis Ababa Road Corridor Project II	Transport/Roads	ADF Loan	1.7.2009	125.00	5.00	0.00%
24. African Virtual University Support Project	Social	ADF Grant	13.12.2004			95.00%
<b>Sub total</b>				<b>260.60</b>		
<b>Total</b>				<b>807.80</b>		<b>20.41%</b>

### Appendix III: Related Projects Financed by the Bank and Other Donors

Project Title	Donor	Region	USD million
Roads 2000 Districts Rural Roads Maintenance Programme	AfDB	North and South Rift Valley	30
Mombasa - Nairobi - Addis Ababa Road Corridor Phase I	AfDB	Eastern Province	52
Arusha – Namanga - Athi River Road Development:	AfDB	Rift Valley	74
Nairobi - Thika Highway Improvement (A2)	AfDB	Nairobi/ Central Provinces	181
Mombasa-Nairobi-Addis Ababa Road Corridor Project II	AfDB	Eastern Province	183
Roads 2000 Maintenance Programme	AFD	Muranga, Maragwa, Nyandarua	29
Maai Mahiu – Narok Road	AFD/ KfW	Rift Valley	26/29
Wote - Makindu Road (E707)	BADEA / OPEC	Eastern Province	25
Emali - Oloitokitok Road (C102)	BADEA / OPEC	Rift Valley	30
Dundori - Ol Kalou - Njabini Road (C69)	BADEA / OPEC	Central	0.2
Construction of the Garissa - Modogashe Road	BADEA/OPEC	North Eastern Province	45
Kipsigak- Serem- Shamakhoko Road	China	Rift Valley	16
Gambogi - Serem Road (D329)	China	Rift Valley	5
JKIA - Museum Hill - Gigiri Road	China	Nairobi	25
Construction of the Eastern By-pass	China	Nairobi	100
Lot III of Nairobi – Thika Road	China	Nairobi	120
Agricultural Roads	DANIDA	Coast, Eastern	4
Northern Corridor Rehabilitation Programme – Phase II	EC	Kenya	87
Northern Corridor Rehabilitation Programme – Phase III	EC	Kenya	82
Roads 2000 Maintenance Programme Phase. II	EC	Eastern Province	15
Rural Road Rehabilitation	KfW/ EC	Eastern / Central Province	17/31
Strengthening of Capacity on Supervision and Operations for Roads Maintenance Works through Contracting	JICA	Nairobi	3
Construction of Nairobi Missing Links No. 3, 6 & 7	JICA	Nairobi	13
Mombasa Port Development Project	JICA	Mombasa	223
Dualling of Nairobi-Dagoretti Corner Road (C60/C61)	JICA	Nairobi	11
Roads 2000 Maintenance Programme	KfW	Rift Valley , Nyanza, Western province	23
Roads 2000 Maintenance Programme	SIDA	Nyanza	25
Northern Corridor Transport Improvement Project	World Bank/NDF	Kenya	160/15
Northern Corridor Transport Improvement Project - Additional	World Bank	Kenya	253
<b>TOTAL</b>			<b>1,932.2</b>

## Appendix IV: Map of Project Area



- Proposed Road
- Ongoing Road Projects

