

**AFRICAN DEVELOPMENT FUND**

**Language: English  
Original: English**



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**UNITED REPUBLIC OF TANZANIA**

**SINGIDA – BABATI – MINJINGU ROAD UPGRADING PROJECT**

**APPRAISAL REPORT**

**INFRASTRUCTURE DEPARTMENT**

**JULY 2007**

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**TANZANIA**

**SINGIDA – BABATI – MINJINGU ROAD UPGRADING PROJECT**  
**PROJECT INFORMATION SHEET**

The information given hereunder is intended to provide some guidance to prospective suppliers, contractors and consultants and to all persons interested in the procurement of works, goods and services for project approved by the Board of Directors of the Bank Group. More detailed information and guidance should be obtained from the Executing Agency of the Recipient Country.

1. **COUNTRY:** Tanzania
2. **PROJECT TITLE:** Singida – Babati – Minjingu Road Upgrading Project
3. **LOCATION:** Singida and Manyara regions in Tanzania
4. **BORROWER:** United Republic of Tanzania
5. **EXECUTING AGENCY:** **Tanzania National Roads Agency**  
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 DAR ES SALAAM,  
 Tanzania  
 Tel: +255-22-215 2576  
 Fax: +255-22-215 0022  
 Email: [tanroadshq@tanroads.org](mailto:tanroadshq@tanroads.org)

6. **PROJECT DESCRIPTION:**

The Singida – Babati – Minjingu Road Upgrading Project will consist of Civil Works and Consultancy Services, and other costs.

- a. **Civil Works** consisting of construction of 223.5 km road to bitumen standard with a width of 9.5m (6.5m carriageway and 2x1.5m wide sealed shoulders) in 3 lots as follows:
  - i. Lot 1: Singida-Katesh road section (65.1km)
  - ii. Lot 2: Katesh - Dareda section (73.8km)
  - iii. Lot 3: Dareda - Babati – Minjingu road section (84.6 km)
- b. **Consultancy services** consisting of:
  - i. Supervision consultancy services for each of Lot 1, Lot 2 and Lot 3 Works.
  - ii. Project Audit consultancy services

- c. **Others** – Resettlement costs to cover compensation of affected people and other social and environmental management

**7. TOTAL COST:**

<b>Total Project Cost:</b>	<b>UA 83.17 million</b>
Composed of	
Foreign Exchange:	UA 65.22 million and
Local Cost:	UA 17.95 million

**8. ADF LOAN:**

ADF X (Loan):	UA 60.0 million
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**9. OTHER SOURCE OF FINANCE:**

GOT – Counterpart Funds:	UA 23.17 million
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<b>Total Financing:</b>	<b>UA 83.17 million</b>
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<b>10. DATE OF APPROVAL:</b>	19 September 2007
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<b>11. ESTIMATED STARTING DATE:</b>	September 2008
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**12. PROCUREMENT OF GOODS AND WORKS:**

**(i) Civil Works**

The civil works contract will be packaged in three lots to be procured under International Competitive Bidding (ICB) procedures.

**(ii) Consultancy Services**

Three consultancy services for supervision of civil works will be acquired on the basis of short listed qualified engineering consulting firms.

Project audit services will be procured on the basis of a short list of auditing firms.

**13. ENVIRONMENTAL CATEGORY OF THE PROJECT: CATEGORY 1**

**CURRENCY AND MEASURES**Currency Equivalents  
(May 2007 Exchange Rates)

Currency Unit	=	Tanzania Shilling TZS
1 UA	=	TZS 1901.03
1 UA	=	USD 1.52418
1 USD	=	TZS 1247.25

**Weights and Measures**

1 metric tonne (t)	=	2,205 lbs.
1 kilogram (kg)	=	2.205 lbs.
1 metre (m)	=	3.281 ft
1 foot (ft)	=	0.305 m
1 kilometre (km)	=	0.621 mile
1 square kilometre/ sq. km (km <sup>2</sup> )	=	0.386 square mile
1 hectare (ha) = 0.01 km <sup>2</sup>	=	2.471 acres

**FISCAL YEAR****July 1- June 30****LIST OF ABBREVIATIONS**

AADT	=	Annual Average Daily Traffic
ATTI	=	Appropriate Technology Training Institute
BADEA	=	Arab Bank for Economic Development for Africa
CAA	=	Civil Aviation Authority
CBO	=	Community Based Organization
DfID	=	Department for International Development (U.K.)
DHS		Demographic and Health Survey
DRC	=	Democratic Republic of Congo
EAC	=	East African Community
EIRR	=	Economic Internal Rate of Return
ESAL	=	Equivalent Standard Axle Load
ESIA		Environmental and Social Impact Assessment
ESMP	=	Environnemental & Social Management Plan
EU	=	European Union
FE	=	Foreign Exchange
GDP	=	Gross Domestic Product
GER	=	Gross Enrolment Rate
GPN	=	General Procurement Notice
HIV/AIDS	=	Human Immuno Virus/Acquired Immune Deficiency Syndrome
ICB	=	International Competitive Bidding
IRI	=	International Roughness Index
LGA	=	Local Government Authorities
MDG	=	Millennium Development Goals
MKUKUTA	=	Mkakati wa Kukuza Uchumi na Kupunguza Umasikini Tanzania
MTEF	=	Medium Term Expenditure Framework

MTR	=	Mid-term Review
NER		Net Enrolment Rate
NEMC	=	National Environmental Management Council
NGO	=	Non-Governmental Organization
NPV	=	Net Present Value
NSGRP		National Strategy for Growth and Reduction of Poverty
NTP	=	National Transport Policy
PAP	=	Project Affected Persons
PER	=	Public Expenditure Review
PMO - RALG	=	Prime Minister's Office for Regional Administration and Local Government
PRSP	=	Poverty Reduction Strategy Paper
RC	=	Reinforced Concrete
RMCs	=	Regional Member Countries
RMLF	=	Road Maintenance Levy Fund
ROW	=	Right-of-Way
RSDP	=	Road Sector Development Program
SPN	=	Specific Procurement Notice
SSATP	=	Sub-Sahara Africa Transport Policy & Program
STI	=	Sexually Transmitted Infections
SWAp	=	Sector Wide Approach
TAA	=	Tanzania Airports Authority
TACAIDS	=	Tanzania Commission for AIDS
TANROADS	=	Tanzania National Roads Agency
TAZARA	=	Tanzania Zambia Railway Authority
TCAA	=	Tanzania Civil Aviation Authority
TEU	=	Twenty-foot Equivalent Unit
THA	=	Tanzania Harbour Authority
TOR	=	Terms of Reference
TPA	=	Tanzania Ports Authority
TRC	=	Tanzania Railway Corporation
TSDPG	=	Transport Sector Development Partners Group
TSIP	=	Transport Sector Investment Program
TZFO	=	Tanzania Field Office
TZS	=	Tanzania Shilling
UA	=	Unit of Account
USD	=	United States Dollar
Veh –km	=	Vehicle Kilometre
VOC	=	Vehicle Operating Costs

**SINGIDA – BABATI – MINJINGU ROAD UPGRADING PROJECT**  
**PROJECT MATRIX**

REVISION DATE: February 2007

DESIGN TEAM: M.Wa-Kyendo, N. Kulemeka, D.Gebremedhin

Hierarchy of Objectives	Expected Results	Reach	Performance Indicators Source Method	Indicative Targets Timeframe	Assumptions / Risks
<p><b>1. Goal</b></p> <p>1.1 To contribute to socio - economic development and poverty reduction efforts of the country through an improved transportation system that integrates economic centers.</p>	<p><b>Impact - Long Term Results</b></p> <p>1.1 Improved status of socio wellbeing 1.2 Reduced incidence of poverty</p>	<p><b>Beneficiaries</b></p> <p>1.1 Rural and urban populations in the project zone of influence.</p>	<p><b>Indicators</b></p> <p>1.1 Quality of life 1.2 National incidence of poverty</p> <p><u>Sources/Method:</u> National Statistical Office data, Human Development Reports, UNDP</p>	<p><b>Target Indicators</b></p> <p>1.1 Progressive improvement in HDI from the current (2004) level of 0.43.. 1.2 No more than 24% of population living below national poverty line by 2015</p>	<p><b>Assumptions</b></p> <p>1.1 That the Government will fulfill the aspirations of the MKUKUTA and MDGs.</p>
<p><b>2. Project Purpose (Objective):</b></p> <p>2.1 To improve the essential road transport services between Dodoma, Singida and Arusha, and integrate it with the rest of Tanzania 2.2 To improve the road transport connectivity between the Central transport corridor in Tanzania with the Northern corridor in Kenya</p>	<p><b>Out come - Medium Term Results</b></p> <p>2.1 Increased movement of people, goods and services 2.2 Increased agricultural productivity 2.3 Increased trade between central, southern and northern Tanzania regions 2.4 Improved road safety along project road</p>	<p><b>Beneficiaries</b></p> <p>2.1 General population within Singida, west Manyara, Arusha and Dodoma. 2.2 Agricultural and manufacturing industries within the area. 2.3 Local and regional business community and traders. 2.4 Cross country and local transport operators</p>	<p><b>Indicators</b></p> <p>2.1 Vehicle operating costs (VOCs) 2.2. Journey (travel) times 2.3. Traffic levels on the road corridor 2.4. Agricultural output.</p> <p><u>Source/Method:</u> Districts, National Statistics, TANROADS and Project Data on Road Safety</p>	<p><b>Target Indicators</b></p> <p>2.1 Weighted average traffic along the project road increased from 232 in 2006 to 502 (116% increase) in 2012 and 805 (247% increase) in 2017 2.2 Increased wheat, production to 50000 tons and increased efficiency in maize production from 1.3tons/ha to 2.5tons./ha by 2015 in Manyara and Singida regions. 2.3 Growth in freight vehicular traffic in the project road from the current 40%. 2.4 Reduced road accident along the project road (base line data to be collected during project implementation). 2.5 Increase proportion of trunk and regional roads in fair to good condition from 84% in 2006 to 92% in 2012 2.6 Reduction of composite VOCs per vehicle km by 32% from USD0.568 in 2006 to USD0.384 in 2012</p>	<p><b>Assumptions</b></p> <p>2.1 That GOT implements the 10 Year Transport Sector Investment Program fully. 2.2 GOT allocate sufficient funds for periodic maintenance. 2.3 Approve the legal framework and implement the 5 Year Road Safety Master Plan.</p>

				<p>2.7 Average composite travel time per vehicle km reduced by 43 % from USD0.019 in 2006 to USD 0.011 in 2012.</p> <p>2.8 Paved roads in fair and good condition in Singida and Manyara Regions increased from 902 km (65.7% of the road) in 2006 to 1125 km (82% of the road) in 2012.</p> <p>2.9 Reduced road roughness from an average IRI of 12.6 in 2006 to 2.0 in 2012.</p>
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<b>3. Resources and Activities:</b>	<b>Outputs -Short Term Results:</b>	<b>Beneficiaries</b>	<b>Indicators</b>	<b>Target Indicators</b>	<b>Assumptions</b>																						
<p>3.1 Procurement of works 3.2 Construction of 223.5 km of 6.5m + 3m road from Singida to Minjingu 3.3 Procurement of consultancy services 3.4 Supervision of works 3.5 Compensation of affected people</p> <p style="text-align: center;"><u>Inputs:</u> Cost - million UA:</p> <table border="0"> <tr> <td>Civil road Works</td> <td style="text-align: right;">66.46</td> </tr> <tr> <td>Consultancy services</td> <td style="text-align: right;">4.09</td> </tr> <tr> <td>Other (compensation)</td> <td style="text-align: right;">0.31</td> </tr> <tr> <td><b>Base Cost</b></td> <td style="text-align: right;"><b>70.87</b></td> </tr> <tr> <td>Contingencies</td> <td></td> </tr> <tr> <td>    Physical</td> <td style="text-align: right;">7.09</td> </tr> <tr> <td>    Price</td> <td style="text-align: right;">5.21</td> </tr> <tr> <td><b>Total Project cost</b></td> <td style="text-align: right;"><b>83.17</b></td> </tr> </table> <p>Sources of Financing (million UA)</p> <table border="0"> <tr> <td>ADF Loan</td> <td style="text-align: right;">60.00</td> </tr> <tr> <td>GOT</td> <td style="text-align: right;">23.17</td> </tr> <tr> <td>Total</td> <td style="text-align: right;">83.17</td> </tr> </table>	Civil road Works	66.46	Consultancy services	4.09	Other (compensation)	0.31	<b>Base Cost</b>	<b>70.87</b>	Contingencies		Physical	7.09	Price	5.21	<b>Total Project cost</b>	<b>83.17</b>	ADF Loan	60.00	GOT	23.17	Total	83.17	<p>3.1 New road with Asphalt Concrete surface, 6.5 m carriageway and 1.5 m SBST shoulders on either side between Singida and Minjigu.</p> <p>3.2 ESMP undertaken, including sensitization and awareness campaigns and education on HIV/AIDS and road safety to local communities.</p> <p>3.4 RAP completed</p>	<p>3.1 Regional and international contractors, local communities, consultants and suppliers.</p> <p>3.2 Local traders and producers.</p> <p>3.3 All road users</p>	<p>3.1 Length of road in good condition in Singida and Manyara regions</p> <p>3.2 Award of civil works contracts/ consulting / awareness services contract</p> <p>3.3 Commencement and completion of Construction and consultancy activities.</p> <p>Source / Method : Quarterly financial and technical reports, Technical and financial Audit reports, Bank Supervision missions and Mid –term review.</p>	<p>3.1 Completion of 223.5 km of road to design standards on schedule October 2013</p> <p>3.2 100% disbursement by 2014</p> <p>3.3 At least 40 towns and villages along the road reached with HIV/AIDS and Road Safety campaigns and education.</p>	<p>3.1 GOT disburse counterpart fund timely for the construction work</p> <p>3.2 Oil prices will not increase far above current prices</p> <p>3.3 Timely implementation of the ESMP and RAP by GOT.</p>
Civil road Works	66.46																										
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## **EXECUTIVE SUMMARY**

### **Project Background**

In its broad strategic plans to enable the country to attain the overarching goal of poverty reduction, the Government of Tanzania (GOT) has placed the development of transportation systems, road network in particular, high on its agenda. In this context the National Strategy for Growth and Reduction of Poverty (NSGRP- 2005/06 to 2009/10) recognizes the need to improve physical infrastructure as a necessary condition for achieving economic development of the productive sectors and social services, and in so doing move towards achieving the Millennium Development Goals (MDG).

The recently published Transport Sector Investment Programme intends to contribute to the achievement of these objectives and has spelt out the priority list of transport infrastructures that need to be rehabilitated and developed. The Singida-Babati-Minjingu road is in this priority list of roads that need to be upgraded in keeping with the National Transport Policy (NTP) objective to bituminise all trunk roads and all regional and key district and urban roads.

In an effort to expedite implementation of the transport infrastructure development program, the GOT, in May 2006, requested the Bank to finance the upgrading to paved standard of Singida-Babati-Minjingu road using the ADF X country resources. The Singida-Babati-Minjingu road is currently an earth and gravel road which is in a very poor state of service.

The Bank's intervention in this road project is in line with the development priorities of the Government of Tanzania; and it is also in compliance with the Bank Group's strategy of promoting infrastructure projects especially those which will facilitate regional integration.

### **Purpose of the Loan**

The African Development Fund loan of UA 60 million will be used to finance part of the foreign exchange cost of the civil works and all the cost of consultancy services.

### **Sector Goal and Project Objectives**

The transport sector goal is to support socio-economic development of the country through an improved, efficient and cost effective transportation system that integrates regional and national economic centres and in so doing contribute to poverty reduction.

The project objective is to improve the essential road transportation services between Dodoma, Singida, Babati and Arusha and integrate the region with the rest of the country; and to integrate the key central transport corridor in Tanzania with the northern transport corridor traversing Kenya.

### **Brief Description of Project Outputs:**

The main components/outputs of the Singida – Babati – Minjingu Road Upgrading Project comprise:

- a. **Civil Works** consisting of construction of 223.5 km road to bitumen standard with a width of 9.5m (6.5m carriageway and 2x1.5m wide sealed shoulders) in 3 lots as follows:
  - i. Lot 1: Singida-Katesh road section (65.1km)
  - ii. Lot 2: Katesh - Dareda section (73.8km)
  - iii. Lot 3: Dareda - Babati – Minjingu road section (84.6 km)
- b. **Consultancy services** consisting of:
  - i. Supervision consultancy services for each of Lot 1, Lot 2 and Lot 3 Works.
  - ii. Project Audit consultancy services
- c. **Others** – Resettlement costs to cover compensation of affected people and other social and environmental management

### **Project Cost**

The estimated project cost (net of taxes) is UA 83.17 million out of which UA 65.22 million (78%) will be in foreign currency and UA 17.95 million (22%) will be in local currency. This cost includes costs of civil works and project supervision, project audit services and provision for physical and financial contingencies.

### **Sources of Finance**

The project will be financed by an ADF loan of UA 60 million from the ADF X resources and GOT counterpart funds amounting to UA 23.17 million. Fund loan funds will cover 72% of the project costs. GOT will also cover the cost of compensating project affected people.

### **Project Implementation**

The Tanzania National Roads Agency (TANROADS) will be the executing agency for the project. Project construction will be implemented over a period of 48 months starting September 2008 and will be completed by October 2012. In addition, 12 months defects liability period has been allowed for.

### **Conclusions and Recommendations**

The overall economic evaluation proved this project to be viable. The project is well conceived, technically feasible, socially justified and environmentally sustainable. The intervention in the road sector by the Bank is in line with the development priorities of GOT as captured in the National Strategy for Growth and Reduction of Poverty and the Joint Assistance Strategy for Tanzania and the accompanying Cover Note.

It is recommended that a loan from the ADF X resources of UA 60 million be extended to the Government of the United Republic of Tanzania for the purpose of implementing the project described in this report subject to the conditions specified in the Loan Agreement.

## **1 ORIGIN AND HISTORY OF THE PROJECT**

1.1 The Government of the United Republic of Tanzania has developed with the cooperation of its development partners a 10 year Transport Sector Investment Programme (TSIP) which draws its clout from the existing macro-economic programmes including the National Strategy for Growth and Reduction of Poverty, the Tanzania Joint Assistance Strategy and the Millennium Development Goals. TSIP's main objective is to operationalize the Transport Policy Implementation Strategies, which was approved by the government in 2003, by translating objectives into time bound activities. Singida – Babati – Minjingu road upgrading is a priority project in the programme

1.2 The Government of the United Republic of Tanzania requested the Bank through letter dated 20 May 2006 to fund the upgrading of the Singida-Babati-Minjingu road using the country allocation under ADF X. The Singida – Babati- Minjingu road feasibility studies and engineering detailed designs were prepared by an engineering consulting firm that was contracted by Tanzania National Roads Agency in August 2005 using funds provided by the Nordic Development Fund (NDF). The consultant undertook environmental and social impact assessment, prepared detailed resettlement plan, economic analysis and detailed engineering design.

1.3 The Bank executed a preparation mission that visited Tanzania between 22 January and 5 February 2007 to prepare the 223.5 km Singida – Babati - Minjingu gravel/earth road for upgrading to bitumen road. The mission examined the technical, financial, environmental as well social-economic issues involved in the proposed road upgrading project. The mission also visited the site along the 223.5 km project road and noted that it is in a very poor state of service and needs upgrading.

1.4 This appraisal report is based on the project study reports, discussions held with the Government (the Ministries of Infrastructure Development, Finance, Education and Vocational Training, Community Development, Gender, and Children Affairs, and agencies including TANROADS, National Development Corporation, and local administration officials), Bank's Country Office, development partners and the project design consultant and additional information collected by the Bank Mission during April / May 2007 appraisal mission.

## **2 THE TRANSPORT SECTOR**

### **2.1 Sector Overview**

2.1.1 Tanzania operates five modes of transport systems consisting of road, rail, maritime, air and oil pipeline. The road transport system in addition to supporting national economic development, acts as a vital transit network for the neighbouring landlocked countries of Malawi, Zambia, Uganda, Rwanda, Burundi and the Democratic Republic of Congo (DRC).

2.1.2 Recent transport sector reforms have included the formation of regulatory authorities, semi-autonomous agencies and the privatization of some operations. Current efforts by GOT are geared towards ensuring that the transport sector effectively contributes to economic growth and poverty eradication in the country. One of the objectives of the Transport Sector Investment (TSIP) is to ensure that transport development takes on board issues related to the disadvantaged groups including women, children and persons with physical disabilities. The transport and communication sector has accounted for 5.4 % of Gross Domestic Product (GDP) annually between 2001 and 2005. The sector growth rate has been fairly constant at around 6.2 percent per annum during the same period.

2.1.3 The resource requirement for the Phase One of the TSIP is estimated by the Government at USD 4.99 billion for implementing various development projects, maintenance of existing facilities, institutional support and cross cutting issues. This amount will be distributed over the five years period

according to plans for implementing the different projects. The road sub sector takes the lions share with resource allocation of USD 3.29 billion, emphasizing the importance the government attaches to the road transport sector. The Government confirmed that about 50% of resources to fund this programme has already been committed or secured. The Development Partners have requested the government to review this program and develop a 3 year rolling program, which the government is already doing.

## **2.2 Transport System**

**2.2.1 Road Transport:** In 2006, Tanzania had a road network of about 85,500 km (of which 4,741 km are paved), with road density of 96.5 km/1000 km<sup>2</sup>. Although the road density is above the Africa's average of 50 km/1000 km<sup>2</sup>, the existing network is far from being sufficient and more roads are still required to be developed and conditions need improvement. Tanzania has established an independent Road Fund / Road Fund Board and a semi-autonomous road agency, the Tanzania National Roads Agency (TANROADS). These are the main sub-sector reforms that have positively transformed the development and management of road in the country.

**2.2.2 Rail Transport:** Tanzania has a total of 3,676 km of railway lines operated by two railway organizations. Tanzania Railways Corporation (TRC) has a total track length of 2,706 km (1000 mm gauge), owning 103 operational locomotives and 1,847 wagons and 98 passenger coaches with performance of 1.12 million tones and 0.67 million passengers in 2005. Tanzania – Zambia Railway Authority (TAZARA) operates a railway line of 1,860 km, of which 970 km are on Tanzania territory. TAZARA has 22 operational rolling stocks, 1400 wagons and 70 passenger coaches with performance of 0.6 million tones and 1.0 million passengers in 2005. Due to poor conditions of tracks and ageing rolling stock and locomotives, freight tonnage volumes and passenger numbers have continued to fall every year. Thus the road transport has taken a large proportion of the freight and passenger services from the railway transport in the country. In order to alleviate the problems of the sub-sector, the Government is bringing in public /private sector partnership (PPP), while retaining public ownership of the infrastructure and regulation. Privatization of TRC and handing over to the concessionaire has not yet taken place owing to protracted negotiations. The two privatization agencies of Tanzania and Zambia are working together on the privatization of TAZARA.

**2.2.3 Air Transport:** Air transport plays an important role in the economy of Tanzania, particularly for the tourism sector and horticulture. Tanzania has four international airports, namely, Dar-Es Salaam, Kilimanjaro, Zanzibar and Mwanza and many other airfields. Following the 1992 liberalization program, Tanzania has over 30 private airlines providing scheduled and charter services throughout the country, of which 16 foreign airlines providing international scheduled services. Passenger traffic has increased by 44 percent from 1.08 million in 1999 to 1.56 million in 2006. Air Transport regulations are overseen by the Ministry of Infrastructure Development (MoID) with Tanzania Airports Authority (TAA) managing most of the airports. Tanzania Civil Aviation Authority (TCAA) regulates the provision of services and the operation of aerodromes. As per the GOT's policy of liberalization, management of the Kilimanjaro Airport has been leased to a private operator since 1998 and a private owned and managed Precision Airlines operates in the Country. The linkages between airports and road network are very important and the project road will make a considerable contribution by connecting the north-western Tanzania with the international airport in Arusha.

**2.2.4 Maritime Transport:** Tanzania possesses navigable water resources. The major sea ports are Dar es Salaam, Tanga and Mtwara on the Indian Ocean and Inland water transport with ports on Lake Victoria, Tanganyika and Nyasa. Lake Victoria plays a critical role in transportation and has the potential for cruise tourism and water sports. Tanzania has also a rail-ferry service that operates

cargo transport on Lake Victoria. The port of Dar es Salaam has 11 berths, a total quay length of 2000m, capacity of 3.1 million tons of break bulk; 6 million DWT (Dead Weight Tonnes) of bulk liquid capacity and 250,000 Twenty – foot Equivalent Units (TEU)s at the container terminal. The container terminal at the port of Dar es Salaam increased cargo handling from 145,000 TEUs in 2001 to 208,595 in 2005. The port facility with the connecting railway system and the different road corridors serve the mainland of the country and the regional economies of Zambia, Malawi, Rwanda and Burundi and to a lesser extent the DRC.

**2.2.5 Pipeline:** The Tanzania Pipeline transport includes TAZAMA and SONGAS. The TAZAMA pipeline transports crude oil from Dar es Salaam to the Ndola refinery terminal in Zambia, a distance of 1750 km and the SONGAS pipeline (232 km), owned by SONGAS, transports gas from Songo – Songo island to Dar es Salaam. The development of the pipeline transport system for crude oil and gas has eased pressure on the parallel road (Dar es Salaam to Ndola and Songo - Songo), by reducing the trucking of these products on the road, and contributing to the reduction in road accident and damage on the road.

### **2.3 Transport Policy, Planning and Coordination**

2.3.1 The Ministry of Infrastructure Development (MoID) has the overall responsibility for policy, planning and coordination of transport and communication, while the Ministry of Finance (MoF) mobilises funds to implement projects. The MoID has a department in charge of policy and planning that coordinates all policy and planning issues for the entire transport sector. The MoID developed the National Transport Policy (NTP) whose objective is to support socio-economic development of the country through an efficient, and cost effective transportation system that integrates regional and domestic economic centres and in so doing contribute to the reduction of poverty.

2.3.2 The NTP of 2003 draws its clout from the Government’s long-term aspirations as stipulated in the Vision 2025, the Millennium Development Goals (MDGs) and the National Strategy for Growth and Reduction of Poverty (NSGRP). The NTP defines the mission of the Ministry as one of developing safe, reliable, effective, efficient and fully integrated transport infrastructure and operations, which will best meet the needs of travel and transport. Its core objective is to improve levels of services, at low costs in a manner, which supports government strategies for socio-economic development whilst being economically and environmentally sustainable. At the road sub-sector level, the NTP has defined the objectives of the pan-territorial road infrastructure to be that of facilitating road transport corridor development through construction, rehabilitation and maintenance in order to encourage a smooth flow of goods and services and attract investment in other sectors. In addition, it endeavours to establish appropriate institutional arrangements for efficient road transport corridor management.

2.3.3 Various parastatals, namely, Tanzania Railways Corporation (TRC), Tanzania–Zambia Railways Authority (TAZARA), Tanzania Ports Authority (TPA), Tanzania Airport Authority (TAA) and Tanzania National Roads Agency (TANROADS) are in charge of the coordination of their respective operations. The responsibility for trunk and regional road has been transferred to TANROADS while the Ministry of Regional Administration and Local Government through the local authorities is responsible for district, feeder and urban roads.

2.3.4 Regarding transport planning, Tanzania has drafted a 10 Year Transport Sector Investment Program for the period 2007/08 to 2016/17, which includes all modes except pipeline. The strategy for the transport sector is to reduce costs and increase service standards by investing in improved infrastructure, especially in the road sector, promoting modal efficiency, enhancing competition and recovering some of the costs from users. The road sub-sector accounts for 70% of national freight movements and over 90% of passenger movement.

2.3.5 Up to 2006, Tanzania had a 10 Year Road Sector Development Program (RSDP), which was launched in 2001/02 for effective and efficient development of road infrastructure and mobilization of local and international resources to speed up the road infrastructure development. This program has been incorporated in the TSIP. At the road sub-sector, the government objective is to provide a core network of 45,000 km of roads in good and fair condition by 2015, thus providing reliable access for the majority of the rural population.

2.3.6 In the absence of a Sector Wide Approach (SWAp), the TSIP has been the most significant instrument for rallying the Development Partners (DP). Regular meetings are held between the DP and MoID, and also among the DP themselves. The TSIP therefore guides the deliberations and planning for DP support in the sector. The Planning and Policy Department of the MoID has the primary responsibility of coordinating Development Partners efforts at sector level, and it forms the linkage between the MoID and the MoF with regard to sector development plans and financial requirements and their inclusion in the Medium Term Expenditure Framework (MTEF).

2.3.7 The Development Partners' activities have cut across all needs including maintenance, rehabilitation and development in both trunk roads and local government roads. The Bank has invested resources in the sector to the tune of UA 257 million since the beginning of its involvement in 1971. The proposed project conforms to the Bank's strategies both at national and regional levels as stipulated in Joint Assistance Strategy for Tanzania (JAST) and the accompanying cover note which was approved by the Bank Board in May 2007.

## 2.4 **Impact of Bank Group Assistance**

2.4.1 The Bank has been active in the transport sector since 1971 when it financed an oil pipeline and tankage facilities. Since then, approximately UA257 million has been approved for Tanzania including grants totaling UA10.85 million. In total 16 road transport operations were financed out of which 13 have been completed successfully. Among the three on-going operations is the Multinational Tanzania/Kenya: Arusha-Namanga-Athi River multinational, the Road Rehabilitation/Upgrading Project and the Zanzibar Roads Upgrading Project.

2.4.2 Out of the loans approved in the last 10 years (since 1997), 3,500 km of gravel road have been constructed and rehabilitated, 320 km of bitumen roads have been completed, and approximately 206 km are under construction (excluding 240 km Arusha - Namanga -Athi River road which is scheduled to commence mid 2007). While no specific impact assessment studies have been conducted on the Bank interventions in Tanzania, anecdotal and empirical data shows that where reliable all-weather transportation systems exist in the country, especially in remote rural areas, social economic status and wellbeing of the people tend to improve. Plans are underway to commission an impact assessment study for a selected number of road transport interventions in Tanzania over the last 10 years.

2.4.3 In 2006, three road transport projects which had been approved between 1997 and 1999 were successively completed and the loan balances cancelled. These are the El Nino Infrastructure Rehabilitation Project, whose loan was approved in December 1998, Mutukula – Muhutwe Road Upgrading Project whose loan approved in October 1997 and works were completed in September 2004, and thirdly, Shelui – Nzega Road Upgrading Project whose loan was approved in June 1999 and works were completed in June 2005.

2.4.4 The Bank group strategy for intervention in Tanzania takes the national priorities of the country within the broad view of the larger eastern Africa region by closing up all missing links on the main national transport corridors and at the same time implementing roads projects that are within the priority corridors as defined by the East African Community's road transport plan. In that context, the Bank has been and continues to fund project on the Central Transport Corridor (Dar es Salaam to

Mutukula) and the Dodoma to Arusha - Namanga corridor which connects to Kenya and on-ward to Ethiopia.

2.4.5 All these projects, including the current ones, took longer to implement than was anticipated. Initially, TANROADS the executing agency and its predecessor, the Ministry of Works, lacked capacity to execute the projects. However, capacity now has been built and TANROADS has demonstrated ability to manage road projects. Still, projects are progressing slowly owing to various factors, most of them related to contractors poor management and lack of sufficient equipment. Procurement procedures are being strictly followed to eliminate any contractors who have not performed well in the past.

2.4.6 It is to be noted that the procurement system also contribute to delays in project start up – some times up to 2 – 3 years after loan approval. In view of this, the Government applied for fast-tracking using post qualification procedures of the Bank. On its own merit and for the purposes of this project, according to Bank rules, the Bank allowed the use of open ICB for procurement of Civil works and short listing of supervision consultants by Borrower's experience.

### 3 THE ROAD SECTOR

#### 3.1 Road Network, Vehicle Fleet and Network Traffic

3.1.1 By 2006 when the last comprehensive survey was conducted, Tanzania had road net work of 85,516km, 28,891 km of which consisted of trunk and regional roads. The overall road density is 96.5 km / 1000 km<sup>2</sup>. The total length of paved road network is 4 741km giving a paved road density of 5 km per 1000 km<sup>2</sup>. According to TANROADS, currently 84% of the trunk and regional road is in good and fair condition. This is an improvement from a level of 50% roads in good and fair condition in 2003. The road density is above Africa average of 50 km per 100km<sup>2</sup>. However, the country's road net work is far from being sufficient.

*Table 3.1: Tanzania Road Network*

<b>Tanzania: Category</b>	<b>Paved (Km)</b>	<b>Unpaved (Km)</b>	<b>Total (Km)</b>
Trunk Roads	3 914	6 020	9 934
Regional Roads	327	18 630	18 957
Sub total	4 241	24 650	28 891
District Roads	30	29 507	29 537
Feeder Roads	0	21 191	21 191
Urban Roads	470	5 427	5 897
<b>GRAND TOTAL</b>	<b>4741</b>	<b>80 775</b>	<b>85 516</b>

Source: 10 Year Transport Sector Investment Program, Phase I 2007/8 – 2011/12, January 2007

*Table 3.2: Road Density and Condition*

	<b>Road Density*</b>	
Total Land Area of the country (sq. km) - Mainland	881,000	
Density of all roads per 1000 sq. km	96.5	
Density of paved roads per 1000 sq. km	5.0	
<b>Road Condition of the network</b>	<b>Trunk &amp; Regional roads</b>	<b>District, feeder &amp; urban roads</b>
Good and Fair (%)	84.0	57.3
Poor (%)	16.0	42.7
Total (%)	100.0	100.0

\* Road density is measured per area of 1000 square km

Source: 10 Year Transport Sector Investment Program, Phase I 2007/8 – 2011/12, January 2007

3.1.2 The number of registered vehicles increased from 106,600 in 1994 to over 600,000 in 2006, recording an annual average growth of above 6.0 percent, with current motorization rate of 16 vehicles per 1000 people. The high rate of vehicle registration in the last 5 years reflects the economic growth in the country and underlines the need for expanding the road network. In fact this high rate of growth of vehicles has not been matched by expansion of road network, restricting traffic movement especially along key corridors.

3.1.3 The latest national traffic survey conducted in 2004 on trunk and regional roads revealed that traffic is concentrated on paved roads, and highest traffic volume is in Dar es Salaam region. The corridor with largest traffic level is TANZAM (ranges from Annual Average Daily Traffic (AADT) of 15,000 along Dar es Saalam – Kibaha section to 700 AADT along Iyovi –Iyayi section). The project road is part of the Great North corridor, which has a much lower traffic ranging from 100 to 150 AADT. This low traffic count flow in this strategic north-south link is partly due to the poor road condition along the project road.

## **3.2 The Road Transport Industry**

3.2.1 The legal framework governing road transport operations in Tanzania is the Tanzania's Road Traffic Act of 1973 and the Transport Licensing Act of 1973. A new law, the Roads Act (2007) was passed by parliament in April 2007 and is in the process of being published.

3.2.2 The key players in the road transport industry are both the private and public sectors. The Government is responsible for the development of the infrastructure and regulatory functions (including licensing of vehicles and operators), while freight and passenger transport operations are deregulated and managed by the private sector. Truck, bus and other operators are free to provide their services at will and to charge according to market conditions. Operators from the landlocked countries for which Tanzania provides a transit corridor also operate according to their own national legal requirements. Buses and minibuses dominate public passenger transport. Passenger transport services are provided by private owned minibuses and bus operators. Mini buses serve the more heavily populated urban and inter-urban main roads. Private truck owners operate independently on a negotiated basis with suppliers or producers. Trucking business has been growing steadily since the decline of rail transport service in the country and truck transport has taken over from the rail as the primary mode for long haul freight transport.

3.2.3 Axle load control and road safety are some of the major concerns with respect to the road transport industry in the country. The Government is implementing axle load control as per the Road Traffic Maximum Vehicle Mass Regulation 2001. A total of 15 fixed weighbridges are strategically located along the main road transport corridors. Through enforcement, overloading has reduced from 40 percent in 2000 to 7.8 percent in 2006. Still more axle load control need to be done as the government invests heavily in road development. With regard to the project road, there is only one mobile weighbridge station near Minjingu. Once the construction of the project road is completed, TANROADS plans to have a fixed weighbridge on the project road, to be financed using their own resources.

3.2.4 With respect to road safety, more than 2,000 fatal accidents and many more are injured in road accidents every year for the last 10 years in the country. The number of reported accidents, which mainly occur on bitumen standard roads, has increased from 7,850 in 1975 to 17,677 in the year 2006 (2,884 deaths in 2006), mainly caused by poor road condition, poor vehicle condition and drivers error. Statistics for 2006 showed that accidents and the number of killed have increased by 7.9 and 18.7 % respectively over 2005. TANROADS, through its Road Safety Unit is working together with other

organisations to raise awareness about the importance of road safety and make travelling on Tanzania's road network safer.

3.2.5 The Government is developing a road safety policy in consultation with development partners. It is hoped that when it is published, it will have covered all issues in a systematic fashion. In order to alleviate the problems in road safety, measures are being taken including the provision of facilities for non-motorized transport such as pedestrian crossings, foot paths and cycle lanes. The design of the project road has taken into account these needs and has incorporated standard engineering safety provisions such as pedestrian crossing, cycle lanes, traffic signs, speed limit signs, climbing lanes and speed calming features at the entrance to villages etc. In addition a special road safety education component has been included in the project. Thus, the intervention in the project road improvement will strengthen the road transport industry and improve the safety standard..

3.2.6 Tanzania is a member of the East African Community (EAC) and Southern African Development Community (SADC). Tanzania is therefore active in adopting trade facilitation programs to harmonize policies and regulations for the smooth flow of passengers and goods for the neighbouring landlocked countries of Malawi, Zambia, Uganda, Rwanda, Burundi and Democratic Republic of Congo (DRC). The EAC and SADC have initiated a joint program to harmonise systems in the two regional blocs, a move that will greatly benefit the road transport sub sectors.

### **3.3 Road Administration and Training**

3.3.1 Tanzania signed the Southern Africa Transport Coordination Commission (SATCC) Protocol in August 1996, and has since then made major reforms in transport sector. In the road sub-sector, the Roads Fund Board and Tanzania National Roads Agency (TANROADS) were established as semi-autonomous agencies. All trunk and regional networks are managed by the Ministry of Infrastructure Development (MoID) through TANROADS, while district and feeder roads are managed by the Prime Minister's Office for Regional Administration and Local Government (PMO - RALG). TANROADS has four functional divisions, namely Maintenance, Development, Engineering, and Finance and Administration. At the regional level, the Agency is represented by the Regional Managers who report to Zone Managers based at the headquarters.

3.3.2 TANROADS skilled manpower capacity has in the recent past been almost overstretched as more projects are increasingly being implemented without a corresponding capacity improvement. In 2003, it had 4 project engineers for 3 projects. Now it has 15 project engineers against 36 projects (18 major construction projects, 9 design projects and 9 procurement projects for construction) On average, every engineer is handling 2.4 projects. In order to increase capacity, TANROADS is recruiting additional 23 engineers before end of 2007, to bring the number of engineers from 180 to 203. The new engineers will be posted both at the headquarters and the regional offices. This move is expected to satisfy the skilled manpower needs for the next 2 to 3 years when another massive recruitment may be conducted. In addition, a new scheme of service with better salaries for the existing TANROADS staff will be in use by the end of 2007 and will institute open performance evaluation system which will form basis for promotion and salary increases in future.

3.3.3 TANROADS also plans to recruit 20 young graduate engineers on 2 year contracts who will be trained by the organization in order to increase and sustain engineering skills within the organization and the road construction industry at large. Upon completion of the 2 year contracts, some may be absorbed in the system and others released to join the private sector. Further TANROADS has plan to employ a consultant, using World Bank funds, to study the operations and management of the organization, which will be the basis for future organizational expansion and development capacity.

3.3.4 TANROADS and MoID sponsor short and long-term training for its employees financed by the government and development partners. All the engineers working at project management level at TANROADS have received either or both short and long term training.

3.3.5 TANROADS is a semi-autonomous road agency of the MoID with advisory board established under the Executive Agency Act, 1997 with a considerable degree of independence in its operations. The operational environment of TANROADS is so far conducive and the organization has been efficiently run. However, a more sustainable way of ensuring independence and accountability is desirable. The Bank together with the Transport Sector Development Partners Group is working with the Government to ensure that TANROADS is made an executive authority as soon as possible.

3.3.6 The need for an executive TANROADS authority is driven by the desire to ensure that TANROADS, which is managing increasingly large sums of public funds, is shielded from potential negative interference. It is envisaged that as the Agency consolidates its organization and management capacity, it will move towards an autonomous authority with its own executive board.

### **3.4 Road Planning and Financing**

3.4.1 The planning and programming of the road network in Tanzania is the shared responsibility of (i) Ministry of Infrastructure and Development (MoID) / TANROADS for the trunk and regional roads; (ii) Local Government Authorities (LGA) for the urban, district and feeder roads; (iii) Tanzania National Park, Mining Companies and village authorities for unclassified roads within the industrial and national Parks. The overall financing is coordinated by the Ministry of Finance. Development and maintenance of infrastructure in Tanzania is financed through budgetary allocation and development partners. The approved budget for the road sub-sector over the last three years has increased from USD 244 million in 2003/04 to USD 287 million in 2004/05 and to USD 344 million in 2005/06.

3.4.2 Tanzania receives a substantial financial aid in the road transport sub sector from Development Partners support. Tanzania's Transport Sector Development Partners Group (TSDG) comprises of ADB, Japan, NORAD, DANIDA, EU, Italy, OPEC, Kuwait and World Bank. GOT's allocation and donor's financial support have not met the financial requirements. Hence, there is the need for involvement of private sector through Private-Public-Partnerships, which is in line with GOT policies.

3.4.3 During the period 2001/02-2005/06, the Government implemented the First Phase of the Ten Year Road Sector Development Program (RSDP). The emphasis was on providing a safe and efficient road network for the trunk and regional roads so as to support the economic and social development, to provide effective linkage with the district, urban and feeder roads. During these 5 years, the government upgraded / rehabilitated 1,188km of trunk roads having spent USD 311 million with contribution by Development Partners of USD 547 million, mainly through concessional loans. At the same time, the government spent USD 200million on road maintenance with a corresponding contribution by the Development Partners valued at USD 84 million.

3.4.4 The Second Phase of the 10 Year RSDP is planned to be implemented from 2006/07 to 2010/11, which includes development projects and maintenance works for trunk and regional roads, institutional development and capacity building. This phase is incorporated in the new USD 5 billion 10 Year Transport Sector Investment Programme (TSIP) Phase I for 2007/08 -2011/12 that includes all modes of transport, except pipeline. The cost of development plans for trunk and regional roads that are under TANROADS jurisdiction is projected to be USD 3 billion, leaving only USD 2 billion for the other transport sub sectors.

3.4.5 The USD 5 billion TSIP program is currently being discussed with Development Partners. The government plans to mobilise and spend over USD 600 million per year for next five years on roads alone compared to an average of USD 228 million per year that was mobilised for maintenance and development works in the last 5 years. The Development Partners have recommended the government to prepare a 3 year rolling program, to be taken from the TSIP.

3.4.6 The Government capacity to finance road development is significant in this project because the government is called upon to contribute about UA 23.17 million (28%) of the total project cost, more than the minimum 10%. The Government of the United Republic of Tanzania, in a letter written to the Bank, categorically confirmed that it will mobilize the required resources to close the financing gap for this project.

3.4.7 **Institutional arrangement and funds transfer:** TANROADS is the executing agency of the MoID charged with implementation of development and maintenance operations for trunk roads and regional roads. They operate independently with oversight functions being carried by a board. The MoF transfers funds earmarked for trunk and regional roads activities to TANROADS through the MoID. TANROADS independently operate bank accounts at national and regional levels throughout the country. The MoID is required to deposit, by law, the earmarked funds to TANROADS accounts every quarter. In the last three years, 75% of the annual funds are deposited within the second quarter.

3.4.8 **Government capacity to mobilise required funds:** Audited accounts for the FY 2004/2005 shows that the Government transferred more than TZS 103.3 billion (about UA 79 million) to TANROADS for road development – this is the amount TANROADS had requested. The corresponding expenditure on works was TZS 68.2 billion (about UA 53 million), a little less than the funds which had been provided, reflecting certain inefficiencies in the implementation. Draft accounts for FY 2005/06 show that the income rose to TZS 134.9 billion (UA 103 million) and the corresponding expenditure on works rose to TZS 118.8 billion (UA 91 million). By comparison, the expected annual expenditure for Singida – Babati - Minjingu road project will be about UA 4 - 6 million which is about 5% of the total government allocation to TANROADS in FY 2005/06. This amount is considered affordable by the Government and cannot cause any imbalance in budgeting.

3.4.9 **Consultation with other Development Partners :** the Bank mission consulted with other development partners who are members of the Development Partners transport support group. It was reported that about 41% of the Tanzanian national annual budget is funded by development partners through grants and loans. Out of this, the contribution of Development Partners to direct budget support (from which the Government will likely mobilise the required funds) is 12% - the rest is in projects and programs. The Development Partners are supportive of the government plans to contribute the UA 23.17 million from the consolidated fund.

### **3.5 Road Engineering and Construction**

3.5.1 In Tanzania, there are about 10 local contractors that are able to undertake contracts worth about USD 10 million. There is no contractor that could execute a USD 30 million contract without collaboration of foreign contractors because of lack of capacity. In addition, most of these contractors are currently busy with government funded rehabilitation / maintenance contracts. It is therefore unlikely that any local contractor will be able to participate in this project independently. However, most of Tanzania's road periodic maintenance activities and other forms of rehabilitation to the tune of USD 10 million are undertaken by local contractors.

3.5.2 A component of the Bank funded Arusha - Namanga - Athi River road development project includes a scoping study on the contracting capacity of the East Africa region with a view to establish causes for poor contracting capacity and action to be taken in order to raise the levels of participation.

Already there is a plan by the Tanzania Contractors Association to build capacity of local contractors and a Contractors Assistance Fund has been established.

3.5.3 There are several Tanzanian based engineering consulting firms who can undertake the supervision of works components of the project. However, Tanzania is currently experiencing shortage of experienced engineers because of increased opportunities for work in the country and else where. Consulting firms may hire engineers from outside Tanzania to fill up the top positions in order to compete for the project supervision consultancy services.

3.5.4 The Engineering Division of TANROADS is responsible for the review of preliminary and detailed engineering design reports, engineering support services, road network and bridges condition, preparation of tender documents and specifications. It is also responsible for standard and design manual and matters relating to road reserves and control of access. Basic engineering designs are standardized following long-standing research and field-testing. Most of the large design / supervision work financed by Development Partners are undertaken by foreign consultant who more often, linked up with the local consultants.

### **3.6 Road Maintenance**

3.6.1 The Road Management and Financing (RMF) theme of the Sub-Sahara Africa Transport Policy and Program (SSATP), which Tanzania is a member, provides the policy underpinning the promotion of sustainable road management and financing. RMF has helped to develop the reform process based on the premise of commercialization of road management (charging for road use on a fee-for-service basis and managing roads as a business enterprise). The experience of the Road Fund and TANROADS has been positive. The Road Fund has secured road maintenance resources by restricting, using the law that established the Fund, 90% of the use of its revenue to road maintenance activities only. TANROADS has improved the management and implementation of maintenance activities. Further the government is in the process of strengthening TANROADS by giving it more autonomy.

3.6.2 The current policy in the country on maintenance of trunk roads is to prioritize the preservation of all roads that are in good condition by channelling funds, first, to routine maintenance to cover the full range of maintenance activities and then to periodic maintenance. Tanzania allocates about USD 1400 per km per year for routine maintenance of roads in good and fair condition. This policy is generally referred to as 'maintaining the maintainable roads first'. The basis for this policy is that in the past, neglecting repair of simple failures (like development of potholes, cracking, opening of drainage systems, etc) over time led to full scale deterioration of the road, which eventually required capital investment in reconstruction. By prioritizing routine maintenance, Tanzania has now 84 % of its trunk and regional roads in good and fair conditions when compared with about 50 % in 2003

3.6.3 The Road Fund revenue has increased by annual average of 16% from US\$42.3 million in 2001/02 to 75.1 million in 2005/06. The Transport Development Partners Group, which the Bank is a member, is in support of increased Government spending on road maintenance and has pledged to scale up support. The main source of road fund is fuel levy. The levy was increased from TZS 80 to TZS 90 in 2003 and to TZS 100 again in June 2006, currently equivalent to US7 cents. In real terms, the levy declined from US9 cents in 2003 to about US7 cents in 2006 because the increase has not kept pace with inflation in the country. The Fund normally disburses 63% of its annual revenue to TANROADS for maintenance of trunk and regional roads. At least 90 percent of the Roads Fund revenue is exclusively set for road maintenance and not more than 10 percent for development.

3.6.4 Assuming annual routine maintenance per km of road of USD1400 for paved roads (4241km), USD929 for unpaved trunk (6020 km) and USD 614 for regional unpaved roads (18630 km), the

routine maintenance fund requirement for all trunk and regional roads under TANROADS in the country is estimated to be about USD23.0 million per year. The fuel levy allocation from the Road Fund to TANROADS is therefore sufficient for the routine maintenance.

3.6.5 Analyses of road maintenance funding shows that Government of Tanzania does not currently have sufficient funds to cover periodic maintenance for its trunk and regional roads. The following table shows the trunk and regional roads maintenance funding gap from 200/01 to 2011/12.

3.6.6 As shown in the Table 3.3 and Chart 3.1 below, the historical funding gap has increased from USD43.8 million (2000/01) to USD75.7 million (2005/06). This is attributed to the decrease in Development Partners' support for maintenance. The Development Partners contribution was USD25.9 million (46% of the total expenditure) in 2000/01 and declined to USD 6.8 million (14% of the total expenditure) in 2005/06. During this period, the total contribution by Development partners was 12% of the actual maintenance expenditure of TANROADS. On the other hand, historical data show that the maintenance revenue that TANROADS received from the Road Fund increased from USD 30.3 million in 2000/01 to USD 43.2 million 2005/06. The breakdown of contribution to maintenance by Development Partners and the Road Fund is attached in Annex V

**Table 3.3 Road Maintenance Funding Gap of Trunk and Regional Roads  
(2000/01 – 2011/12) in million USD**

	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12
<b>A: Maintenance needs</b>												
Routine & Recurrent	28	30.1	33.1	37.4	36.8	30.1	31	33.4	33.4	33.5	33.5	33.5
Periodic	72	75.3	79.9	86.7	91.7	95.6	92	88.1*	86.7	85.4	84	82.7
<b>Total</b>	<b>100</b>	<b>105</b>	<b>113</b>	<b>124</b>	<b>129</b>	<b>125.7</b>	<b>123</b>	<b>121.5</b>	<b>120</b>	<b>119</b>	<b>117.5</b>	<b>116.2</b>
<b>B: Available Funds</b>												
Routine & Recurrent**	20.5	21.4	21.8	18.3	19.1	24.9	23.4	33.4	33.4	33.5	33.5	33.5
Periodic: Road Fund	9.8	15.1	20.2	21.3	22.7	19	19.9	28.2	30	31.9	52.6	54.6
Periodic: Donors	25.9	28.8	11.3	19.7	9.8	6.1	24.4	28.1	28	28.3	6	6
<b>Total Periodic Funds</b>	<b>35.7</b>	<b>43.9</b>	<b>31.5</b>	<b>41</b>	<b>32.5</b>	<b>25.1</b>	<b>44.3</b>	<b>56.3</b>	<b>58</b>	<b>60.2</b>	<b>58.6</b>	<b>60.6</b>
<b>Total Funds</b>	<b>56.2</b>	<b>65.3</b>	<b>53.3</b>	<b>59.3</b>	<b>51.6</b>	<b>50</b>	<b>67.7</b>	<b>89.7</b>	<b>91.4</b>	<b>93.7</b>	<b>92.1</b>	<b>94.1</b>
<b>C: Maintenance Gap</b>												
Routine & Recurrent	7.5	8.7	11.3	19.1	17.7	5.2	7.6	0	0	0	0	0
Periodic	36.3	31.4	48.4	45.7	59.2	70.5	47.7	31.8	28.7	25.2	25.4	22.1
<b>Total</b>	<b>43.8</b>	<b>40.1</b>	<b>59.7</b>	<b>64.8</b>	<b>76.9</b>	<b>75.7</b>	<b>55.3</b>	<b>31.8</b>	<b>28.7</b>	<b>25.2</b>	<b>25.4</b>	<b>22.1</b>

Source: TANROADS during the Appraisal Mission May 2007

\*The periodic maintenance reduces because of completion of back log maintenance

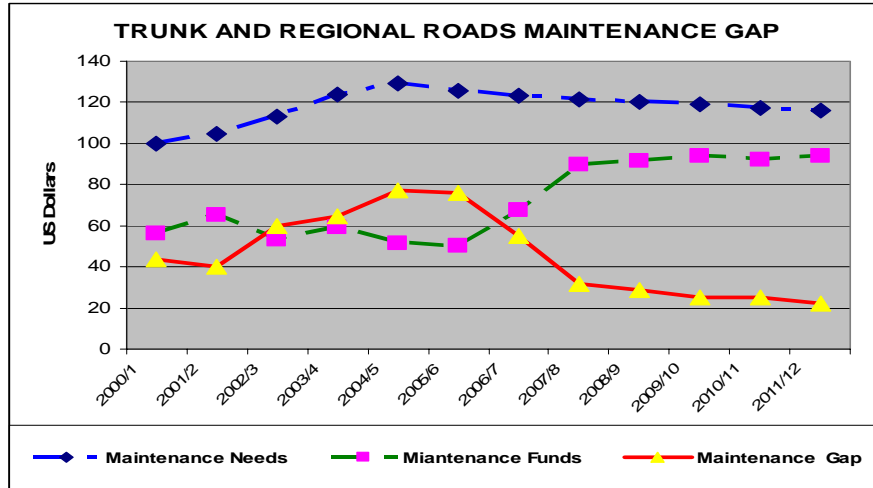
\*\* Available fund for routine maintenance includes a small amount of fund allocated by Development Partners between 2001/02 to 2005/06

3.6.7 The 2006/07 to 2011/12 projection shows a decline in the maintenance gap from USD 55.3 million to USD 22.1 million. During this period Government contribution is expected to increase from USD 43.3 million (2006/07) to USD 88.1 million in 2011/12. This raise in Government funding will be obtained from increased allocation by Road Fund to TANROADS which is projected to increase by 3% annually from 2007/08. The other source will be the Access Fee, which will be introduced in 2010/11 from which TANROADS will receive USD18.71 million per year. At same time, the Government expects reduced contribution from the Development Partners from USD 24.2 million (2006/07) to USD 6.0 million in 2011/12.

3.6.8 The detailed plans of the Government on how they intend to fund the maintenance gap are contained in the Transport Sector Investment Plan (TSIP). The proposed additional sources of income, which the Government is committed to actualize within the next 5 years as stated in the TSIP, include:

- i. increasing fuel levy from current US cents 7 to US cents 10 per litre and sustain at USD 10 cents in real terms for the long term;
- ii. introducing the Annual Access Fee that would replace the annual vehicle licensing fee and allocating 70 percent of the collection to the Road Fund;
- iii. improving the collection of fuel levy revenues by curtailing the illegal imports and other forms of evasion;
- iv. local authorities to use fund from their own sources to maintain their roads; and
- v. Introducing road maintenance concessions, particularly the possibility of instituting Maintain Operate and Transfer Schemes.

**Chart 3.1: Tanzania's regional and trunk roads maintenance needs projection**



3.6.9 As regard the Singida – Babati - Minjingu road upgrading project, the Government will afford routine maintenance, estimated at USD 0.3 million per year, whose cost is not substantial, immediately after defects liability period expires. Periodic maintenance will not become due until 7 – 8 years after construction, which is around 2019. It is expected that the Government will have implemented some if not all of the above mentioned additional sources of revenue, in order to mobilize sufficient fund to be able to fund the periodic maintenance of the project road.

## 4 THE PROJECT

### 4.1 Project Concept and Rationale

4.1.1 **General project formulation:** The project is formulated under the Transport Sector Investment Program (TSIP) to improve essential road transport connecting the north east regions of the country with the north-west, and the south with the northern regions. The TPSI plans to improve a total of 10,000km of Tanzania's arterial trunk road network to all weather bitumen roads before 2015. So far about 4 000 km of the trunk road network is paved. In the last five years, the government rehabilitated / upgraded to bitumen standard 1,168 km of trunk roads at a cost of USD 311.71 million with a contribution by the Development Partners of USD 546.55 million. Singida – Babati - Minjingu road upgrading project is conceptualised within this larger vision of establishing major arterial trunk roads to facilitate trade, economic development and integration of the country.

**4.1.2 Rationale of selected design:** The road project design was based on traffic volumes, climatic conditions, drainage, cost, environmental and social issues, and the need to conform to national trunk road standards. The pavement is designed for a 20 year life. The bridges are designed to take a 50-year flood, 25 years for box culverts and 10 years for pipe culverts. The design speeds range between 60 km/h to 100 km/h. The road has 2 distinct pavement designs which vary according to traffic loading. The road design is based on Tanzanian Pavement and Materials Design Manual (1999) and the Code of Practice for Geometric Design (SATTC-TU, 1998). A number of alternative pavement designs were considered and cement stabilised pavement surfaced with double bituminous surface treatment was found more cost effective in the section between Singida and Dareda which exhibits low traffic loading. The rest of the road, which has heavier traffic loading, has a crushed stone base with asphalt concrete surfacing.

**4.1.3 Government Commitment:** The government is highly supportive of the project. This was demonstrated by various government officials who were interviewed during the preparation and appraisal missions. These included senior officials of the Ministry of Finance, Ministry of Infrastructure Development, TANROADS, the Regional Commissioners, District Commissioners, district sector officials, NGOs, village leaders and communities. The Government has committed itself to the project and pledged adequate resources for full implementation and maintenance thereafter. The creation of Road Fund Boards and TANROADS, the executing agency for the project, and other sector reforms underline this commitment

**4.1.4 Affected groups, NGOs and their participation in project design.** Consultations were made on the technical designs, environment and social issues during the feasibility studies and during the Environmental and Social Impact Analysis studies. Various stakeholders were consulted over the scope of the project and road alignment in sensitive and populated areas. Specific concerns regarding road safety and environmental and social impacts of the project both during implementation and after implementation were taken care of in preparation of the ESMP and the RAP. The African Wildlife Foundations inputs were used in designing the safety measures for wild animal crossing at Minjingu end of the project. Community leaders gave their inputs in design of a cattle crossing underpass along the road.

**4.1.5 Lessons Learnt:** Several lessons have been learnt over the years and notable ones include (i) need to carry out complete detailed designs and explore technical and financial options upfront to avoid changes during implementation; (ii) prepare tender packages that would attract both regional and international contractors; (iii) the need to ease on management of the whole project by not having too many small lots; and (iv) the need to spread the risk of project failure by having several lots of civil works components; (v) the need to balance the competing lessons on subdivision of lots; (vi) slow pace of project implementation experienced in Tanzania in the recent past; (vii) the slow procurement procedures.

**4.1.6** The outlined lessons were used in the project design, particularly the lesson on subdivision of the road works into lots. Experience shows that it is more prudent to subdivide road projects into lots of 50 – 70km length when the total road project is more than 100km, because the project takes shorter time to complete implementation, and spreads / reduces risks of failure to implement project.

**4.1.7 Relationship of project in the larger transport programme:** The Singida – Babati - Minjingu road project is identified in the Transport Sector Investment Program as one of the key road transport missing links. Its influence goes beyond the national boundaries as it forms part of the two major corridors, the Great North Corridor and the Central Corridor. The Central Corridor is being developed by the Government together with the other neighbouring countries under the auspices of East African Community with the support of the Bank and other multilateral lenders. The Great North Corridor connects Tunduma in the south with Dodoma, Arusha, and onward to Nairobi and Addis

Ababa while the Central Corridor connects Dar es Salaam with Dodoma and Kampala, Kigali and Bujumbura. There are links within the Tunduma – Addis Ababa backbone road corridor that are being funded by the Bank: the Arusha – Namanga – Athi River section (240km of multinational road), the Isiolo-Moyale section (130km) and further on the Moyale – Addis Ababa section in Ethiopia. In addition, the Nairobi - Thika road in Kenya, part of the Nairobi-Moyale – Addis Ababa, has been placed in the pipeline for 2007 lending. The Dodoma – Iringa section in Tanzania is planned for possible 2008 Bank lending.

**4.1.8 Project is in line with Government and Bank strategies:** The proposed Bank intervention in the road sector is in line with the development priorities of the GOT and the country strategy programme outlined in the NSGRP where adequate infrastructure is necessary to improve economic prospects of the productive sectors and social services. Transportation of goods and services is one of the main pillars for the sustainability of the current economic recovery programs. In addition the road section serves not only the national priorities, but also regional connectivity which is within the Bank policy on integration of the Regional Member Countries (RMCs) consistent with NEPAD objectives. Hence the road project compliments other programs on the main route corridors in both Tanzania and the neighbouring countries.

## **4.2 Project Area and Beneficiaries**

### **A) Project Area**

4.2.1 The Singida-Babati-Minjingu road segment is located in the central-western zones of Tanzania in Singida and Manyara Regions. The road traverses the districts of Babati, Hanang and Singida. The project road starts at Minjingu through Babati forming part of the trunk road to Dodoma. From Babati the project road proceeds to Singida traversing Dareda, Endasak, and Katech. The road continues in south-westerly direction, through an increasingly arid and sparsely populated landscape up to Singida town. This road continues to Mwanza and Bukoba on the shores of Lake Victoria. The project zone of influence includes the three mentioned districts and to a larger extent the two Regions covering a land area of 95,161 sq. km (10.8% of mainland area).

4.2.2 The project road runs at about 1000 meters above sea level (asl) from Minjingu, rising to an elevation of about 1,350 meters at Babati. Beyond Babati, the road traverses hilly terrain at an elevation of 1,550-1,700 meters. The area consists of granite batholith rocks, peneplains and volcanic plateaus. A few wetlands are present in the area notable the Gilwiude Swamp and the upper section of Bubu Catchment Basin. Babati and Hanang receive moderately high rainfall of between 800-1000 mm. Western Babati, southern Hanang and northern Singida are semi-arid midlands with annual rainfall of between 450-700 mm. The south and west of the project area are dry and semi-arid plains with rainfall averaging 350-400 mm a year. The area is located within the acacia-savannah ecological zone moderately rich in flora and fauna. Wildlife habitats are limited to specific zones including the Singida and Kindai Lakes, Balangida Lelu Lake, Babati Lake, Lake Manyara National Park, the Manyara Ranch the Burunge Pilot Wildlife Management Area, and Kwakuchinja Wildlife Corridor which provides a link between Tarangire National Park and the wildlife dispersal areas to the north. The lakes provide exceptional habitats for birds.

4.2.3 Agriculture is the main economic activity in the area, employing over 80% of the labour force. Main food crops include maize, sorghum, beans, millet, cassava, potatoes, paddy and bananas. Maize production in 2002/03 was 213,000 tones accounting for over 6.2% of national production. Per hectare yields are low, averaging 1.1 tons of maize and 0.9 tons of sorghum, respectively. Important cash crops include wheat, sunflower, groundnuts, sesame and sugarcane. The wheat farms (40,000 hectares) have recently been privatised, and a new sugar factory at Magugu (4,500 tons production a year) established. Singida is the country's largest producer of sunflower seed with capacity of over 60,000

tons per year (2001). Livestock rearing, especially cattle, occupies at least 17% of households in the area numbering 1.2 million herds (2002/03) accounting for 10% of national herd. Also common are goats, sheep, pigs and poultry. The average off-take rates for beef are relatively low due to disease, poor breeds and inadequate extension services.

## **B) Project Beneficiaries: Poverty and Wellbeing**

4.2.4 The majority of the project beneficiaries are the people living in the two Regions of Manyara and Singida (approximately 2.13 million consisting of about 410,000 households) or 6.3% of Tanzania mainland (2002) population. The districts within the zone of influence are Singida, Hanang and Babati with population sizes of 517204, 205133 and 303013, respectively, giving an average household size of 5.1 persons compared to 4.9 for the mainland. Other beneficiaries will be the users of the road including transporters and traders; administrators and public, private and NGO social service providers in health, education and community development; extension workers; and small scale entrepreneurs; in addition will be farming community and the phosphate fertilizer factory at Minjingu.

4.2.5 Most of the beneficiaries are poor despite national GDP growth of 5.8% (2000 - 2004). According to the Poverty and Human Development Report (HDR, 2005), poverty still remains a major challenge in rural areas which depend on subsistence farming for a living. Rural growth is therefore critical in reducing poverty in Tanzania. The project zone of influence has one of the highest poverty levels in the country. The 'basic needs' poverty line (2000/01) for Singida rural was 55.6%, Singida urban 46.1%, Hanang 49.2% and Babati 50.2%, compared to national average of 36%. According to the Tanzania Multi-Sector Country Gender Profile (2005), women were poorer than men due to low education status, inequality to access and control of productive assets, unfair labour practices, lack of information for input and produce markets. The large proportions of female heads of household in the project area (averaging 32%) signified high risk of households falling below the poverty line.

4.2.6 The major health problem of the beneficiaries is malaria accounting for 43% - 53% of all illnesses followed by ARI (Acute Respiratory Infection), pneumonia, eye infections and diarrhoea. The health coverage is between 65% and 80% and most rural people have to travel over 50 km to hospital. The three project districts have a combined total of 118 health centers and dispensaries, and a hospital in each district. In 2005, the three districts had a total of 24 medical doctors with a population/doctor ratio of about 31,000 compared to 20,000 at national level. The infant mortality rate ranged between 59 and 79 per 1000 live births (DHS, 2004). Maternal mortality has worsened from 529 deaths per 100,000 live births to 578 between the periods 1987/96 and 1999/04. This is partially due to high number of home deliveries (over 65% in Manyara and 59% in Singida). Access to potable water and good sanitation is very low with 42% of households (2002) within 30 minutes walk to safe and protected water sources. Approximately 87% used latrines although very few (0.4 - 7.9%) were the ventilated improved pit latrines (VIP).

4.2.7 Literacy rates among the beneficiaries (2002) were higher than the national level except for Hanang which had 54% for women and 67% for men compared to national averages of 62% among women and 78% among men. Primary school coverage is good with 413 government run schools. However primary school drop-out rates are high (especially for boys) ranging between 15-20%. There are only 53 secondary schools in the area resulting in low enrolment rates. The shortage of secondary schools is a national issue with 14.8% GER at Forms 1-6 (2006) and a NER of 13.1% (worse still for girls). Primary School Leaving Examination (PSLE) pass rates have been poor averaging between 32% and 49% (again girls performing badly). Among the reasons for poor performance are inadequate schools especially upper secondary; high pupil/teacher ratios of between 51 and 67; and large class sizes of between 71 and 100.

4.2.8 In 2004 HIV/AIDS national prevalence rate was 7% (female 7.7% and male 6.3%). Although Manyara and Singida had comparatively low rates (2% and 3.2%, respectively), the trend is worrisome. According to the Surveillance Report No. 19, prevalence rates among blood donors, on a five year average (2000 – 2004), was 10% for Singida, 15% for Hanang and 20% for Babati. There is therefore need to jack-up the preventive campaigns against the spread of the epidemic. In addition, women are worst affected with a rate of 4.2% for women and 2.1% among men in Singida Region (2004); and in Manyara Region, female rates were at 2% compared to 1.9% among men.

### **4.3 Strategic Context**

4.3.1 The National Strategy for Growth and Reduction of Poverty (NSGRP) recognizes the need for increased levels and improved quality of transportation services as a necessary condition for improving prospects of the productive sectors and social services. Government in this case realizes that in order to sustain economic growth over time, it must focus on scaling up investments towards modernizing small, medium and large scale agriculture, promoting off-farm activities including agro-processing, and pay particular attention to trade, services and marketing, infrastructure and creating conducive environment to attract private investment. The rural areas in Tanzania have limited chances for creating new opportunities for markets, employment, and trade (both domestic and foreign). Investing in the Singida-Babati-Minjingu road, therefore, conforms to one of the NSGRP pillars, that of growth and reduction of poverty. Moreover, this intervention is in line with the Bank Group's strategy and assistance programme for 2006-2010 as spelt out in the Joint Assistance Strategy for Tanzania (JAST) and the accompanying Cover Note that serves a proxy for the Country Strategy Paper, which was approved by the Bank board in May 2007. The strategy identifies development of infrastructure and improvement of road network in particular, as the main area of focus.

4.3.1 Furthermore, the project has been contextualized within the National Transport Policy (NTP) framework which is put into action by the TSIP. The investment plan aims to construct approximately 4,500 km of trunk roads of which the Singida-Babati-Minjingu is part. Besides, the road has also been conceived within a regional context. The development of corridors is an important strategy for Tanzania where it seeks to harness the concept of Spatial Development Initiative (SDI), foster national and regional integration, serve as a transit country to neighbouring land-locked countries, and facilitate transit trade. In that context, the road is a strategic link between national zones and at sub-regional level.

4.3.2 This road is listed as one of the missing links in the country's main arterial road network. It connects north east of the country with the north west and thus becomes a very strategic link. Currently, freight and passengers from Dar es Salaam to Mwanza go through (Nairobi) Kenya and then back to Tanzania through Isebania border point; and traffic to Bukoba goes through Kenya and Uganda before re-entering Tanzania through Mutukula border point. When completed, the Singida-Babati-Minjingu road will provide the only link between north east of Tanzania (Arusha – Moshi area) and the north west of the country (Mwanza-Bukoba), and connects the northern and central/southern zones through the Great North Road. The road serves the international traffic by linking the Central Road Corridor (Dar es Salaam to Mutukula) and the Northern Road Corridor (Mombasa-Kampala-Kigali). In addition, the completed road will open up the western regions to the ports of Tanga and Mombasa.

4.3.3 The proposed road project will integrate well with other transport modes: the Arusha town airport and the Kilimanjaro International Airport (KIA) serving local and international traffic, and the Singida airstrip. The project also integrates well with other ongoing road projects which feed into one another. These include (i) Dodoma-Singida and Singida-Shelui roads upgrading that is ongoing and scheduled for completion in 2008, (ii) Morogoro-Dodoma road rehabilitation which is nearing completion, (iii) Dar es Salaam-Chalinze-Morogoro road – reconstruction/rehabilitation that was

completed recently, (iv) Tanga-Segera-Chalinze – rehabilitation which is almost complete and (v) the Arusha - Namanga construction set to commence mid 2007.

#### **4.4 Project Objectives**

4.4.1 The transport sector goal is to contribute to the socio-economic development and poverty reduction efforts of the country through an improved transportation system that integrates regional and national economic centres.

4.4.2 The purpose of the project is to improve the essential road transport services between Dodoma, Singida and Arusha and integrate these areas with rest of the country. At the same time, the project will link the Tanzania's Central transport corridor with Kenya's Northern transport corridor.

4.4.3 The attainment of both the sector goal and the project purpose will contribute to the fulfilment of the national road sub-sector targets of providing a core network of roads in good and fair condition by 2015; reducing cost of transport and increase service standards; providing access to a large proportion of the rural population; and improving road safety.

#### **4.5 Project Description**

4.5.1 The Singida – Babati – Minjingu Road Upgrading Project will consist of civil works and consultancy services, and other components.

(i) Civil Works consisting of construction of 223.5 km road to bitumen standard with a width of 9.5m (6.5m carriageway and 2x1.5m wide sealed shoulders) in 3 lots as follows:

- Lot 1: Singida-Katesh road section (65.1km)
- Lot 2: Katesh - Dareda section (73.8km)
- Lot 3: Dareda - Babati – Minjingu road section (84.6 km)

(ii) Consultancy services consisting of:

- Supervision consultancy services for each of Lot 1, Lot 2 and Lot 3 Works.
- Project Audit consultancy services

(iii) Others – Resettlement costs to cover compensation of affected people and other social and environmental management

##### **A. Civil Works**

4.5.2 **Lot 1: Singida – Katesh road (65.1 km)** consists of 63.6 km of gravel road and Singida bypass (2.4km). The traffic loading is between 8-10 million equivalent standard axles (ESA). The road will be upgraded to a 9.5 m wide paved surface carriageway including 2x1.5 m shoulders sealed with single bituminous surface dressing. The pavement will comprise of double bituminous surface dressing, 150 mm cemented base course, 250 mm cement improved subbase in two layers, and improved subgrade.

4.5.3 The road generally follows the existing alignment on this rolling to hilly section of the project. The road geometric design speed is 100km/hr on flat terrain and reduces to 50 km/hr on mountainous sections and through villages and towns namely Singida, Makungu, Kinyammudo, Sagara, Mougutu and Katesh. Climbing lanes have been provided at steep gradients. All drainage structures are recommended to be replaced due to limited width and hydraulic capacity. Three major box culverts (at the Singida bypass, Mwanitera River and at another location) made of reinforced concrete (RC) and numerous concrete pipe culverts will be installed along the road. There are 25 bus lay bys designed to

provide rest and conveniences for heavy long distance freight and passenger traffic in this section which are spread out throughout the road especially at villages.

**4.5.4 Lot 2: Katesh - Dareda road (73.8km)** starts at km 62+700 and ends at km 136+500. The traffic loading is 8-10 million ESA and the road will be constructed to the same geometric and structural standard as for for Singida-Katesh section above. The road is generally following the existing alignment, having a high embankment almost throughout its length because of poor alignment soils and drainage system. This section of road is passing through a rolling to flat terrain at the bottom of the great East African Rift Valley and poses a much greater drainage challenge. Therefore a reinforced concrete bridge at Bubu River and 16 major box culverts made of reinforced concrete and many concrete pipe culverts will be constructed. The design has provided for 26 bus lay bays throughout the road section.

**4.5.5 Lot 3: Dareda - Babati – Minjingu road section (84.6 km)** starts at km 136+500 up to the end of the project line at km 159+192. Lot 3 includes a 1.46km section of Babati-Dodoma which has been incorporated to take care of serious flooding problems at Babati town. Another 500 m of heavy township road works at Babati is to be constructed. The traffic loading in this section is estimated at 17 million ESA and the proposed pavement structure has been designed to carry this heavier traffic loading. The pavement will comprise of 50 mm asphalt concrete surfacing, 150 mm crushed rock base course, 300 mm cement stabilised subbase in two layers on top of natural or improved subgrade. The road follows the existing alignment along the bottom of the Great Rift Valley posing serious drainage problems: 2 bridges and 24 major box culverts have been provided for. A reinforced concrete bridge will be constructed across the Kiongozi River. A series of 12 major RC box culverts will be constructed at the flood prone Mdori drainage basin. Additional box culverts and several concrete pipe culverts will be installed as well. There are 18 lay bays spread out throughout the road at convenient location for rest.

**4.5.6** The last 10 km of the road divides the Lake Manyara and the Tarangire National Parks. There is an animal migration route across the road within a 7.3km corridor. The design incorporates prominent road signs, special rumble strips and speed reducing bumps every 500m throughout the 7.3 km corridor. These facilitates will slow down vehicles to allow animal crossing without compromising the safety of traffic on the road, as well as that of the animals.

**4.5.7** There are 3 main types of pavement cross sections in Lot 3. Differences occur in width of shoulders - 2m shoulders in suburban and urban and 1.5 m in rural section. In Babati town, there is a special cross section which has walk paths and cycle paths. The existing road will be ripped and reconstructed with new pavement and will incorporate urban style bus bays and parking lots.

**4.5.8** The 1.6km additional part of the Dodoma – Babati road which has been incorporated in the design will include a large box culvert which will replace existing low capacity culverts. The road level will be raised to hinder cross flooding that frequently occurs in Babati town and the culverts will direct water to River Kiongozi.

## **B. Consultancy services category**

**4.5.9 Supervision Consultancy services for the works:** Three experienced firms of engineering consultants will provide supervision services of the three Lots of civil works, each consultancy contract supervising one works contract. The services of the consulting firms will include the following: review of prior arrangements made for the diversion of services and public utilities; supervise the civil works; administer the construction contracts; inspect the works; supervise the necessary quality control testing performed by the contractors; track progress and costs; and report to and maintain close liaison with the TANROADS; supervise the contractor during the maintenance

defects liability period; provision of monthly and quarterly progress reports; and preparation and submission of the project reports. Description of the services for the consulting firm will be detailed in the Terms-of-Reference and in the respective contract agreement.

**4.5.10 Project Audit Consultancy Services:** Project audit consultancy services will be provided by an external auditor for all the works and services. The auditor will provide project audit services (financial and management). The selected auditor shall verify the accounts of the operation of the project and make recommendations for project management. In addition, the auditor shall conduct a physical check of the facilities and supplies provided by the contractors. The selected firm shall provide annual project reports and a final audit report at completion of the project. Description of the services for the consulting firm will be detailed in the Terms-of-Reference and in the respective contract agreement.

### C. Others

**4.5.11 Compensation and Resettlement:** The project is in Category 1 due to both environmental sensitivities and the fact that the number of project affected people is significant. Approximately 108 households in total will be affected including 51 households that will be displaced. A full RAP has been prepared and its implementation will be undertaken by the government before the works commence in specific sections. In addition HIV/AIDS and Road Safety education and awareness campaigns have been built into the project and will be executed through the works contracts. An estimated cost for implementing these aspects together along with other elements of the ESMP has been included in the project cost.

## **4.6 Traffic Demand and Road User Prices**

**4.6.1 Traffic Demand:** The demand for transport on the Singida – Babati – Minjingu Road has been assessed based on the traffic survey undertaken at 9 sites in January and in June 2006. A manual classified vehicle volume count was conducted for 7 consecutive days, together with three night's counts. Based on the traffic survey, five homogenous links (Minjingu – Babati; Babati – Dareda; Dareda - Katesh; Katesh - Singida Junction and Singida Junction – Singida) have been identified for purposes of economic analysis based on traffic levels, terrain, location of major settlements and junctions. The traffic counted along the Singida – Babati – Minjingu Road varied from an AADT of 122 (Link 4 - Katesh – Singida Junction) to 386 (Link 1 – Minjingu - Babati). The weighted average traffic in 2006 is 232 for the whole project road and expected to reach 502 in 2012, when the road opens to traffic. In 2017, five years after the road is opened to traffic, the weighted traffic is projected to reach to 805 (247% increase compared with the 2006 traffic). A summary of the traffic flow for the five homogenous links of the project road is shown in Table A.1 of Annex 4. The vehicular composition of the traffic indicated that light passenger vehicles account on an average of about 40 percent, freight vehicles for 40 percent and buses for the remaining 20 percent of the traffic.

**4.6.2** The traffic level is projected considering the growth of population, Gross Domestic product (GDP), income per capita and income elasticity passengers and elasticity freight. Thus passenger volume is projected to grow between 7.4 % and 7.6% while freight between 6.5% and 7.0% during the project life. Generated traffic is projected to build in stages over three years from the opening year to its full potential of 45 percent of normal traffic. Diverted traffic is projected to account for between 5 to 13 percent of the total projected traffic according to link. Details of projected traffic forecast are presented in Annex 4, Table A.3.

**4.6.3 Road Users Prices:** The principal benefits of the road upgrading project are expected to derive from reductions in road user costs (RUC), comprising vehicle operating costs (VOC) and passenger time costs, as a result of lower road roughness and higher average travel speeds for normal, generated

and diverted traffic. The project road feasibility study carried out in 2003/04 was reviewed and updated in May 2007. In May 2007, all inputs were updated and revised considering the final construction cost of DBST for lots one and two, AC for lot 3 and oil price of USD 66 per barrel. The annual average composite VOC in 2006, estimated at USD 0.568/ vehicle kilometre (veh – km) would be reduced to USD 0.384 / veh – km when the project road is open to traffic in 2012. During the same period, annual average composite travel time per vehicle km is expected to reduce by 43 percent from USD 0.019 to USD 0.011.

4.6.4 For the economic analysis, economic construction cost of USD 386,850 per km for DBST (lot 1), USD 378,280 per km for DBST (lot 2) and USD 518,920 per km for AC intervention (lot 3) were considered, based on the detailed design.. With respect to periodic maintenance of DBST, economic cost of reconstruction of USD 170,000 per km USD 235,600 per km for AC intervention was considered. For routine maintenance, USD 1150 per km per year was used for DBST and AC interventions. .

## **4.7 Environmental and Social Impact**

4.7.1 **Overview.** The project is designated as a Category 1 project in the Bank's environmental risk management system because of potentially significant environmental and social impact management issues. The Project has potential beneficial impacts in linking important agricultural and wildlife zones with markets and nodes of a potentially wider natural resource based tourism network. To the north and east of the road are the National Parks of Lake Manyara and Tarangire which form part of the tourist circuits of Arusha and the Serengeti; to the south and west are Tanzania's less frequented parks.

4.7.2 In this respect key management issues for the project are: a) maintenance of the Kwakuchinga Wildlife Corridor and proximate natural areas of significant ecological value, b) implementation of the Resettlement Action Plan, involving the relocation of approximately 51 residential houses or structures near towns, and, c) effective environmental and social impacts management in construction management, including HIV/AIDS and road safety components.

4.7.3 **Environmental and Social Assessment.** Comprehensive and detailed ESIA and RAP have been prepared. A number of special measures have been designed into the project including traffic slowing measures involving alternative humps and rumble strips every 500 m along the 7.3 km Kwakuchinja Wildlife Corridor to ensure speeds are restricted to 50 kph. Following multi-criteria review of alternative alignments around small towns balancing costs, ecological and social impacts, some minor resettlement will be necessary affecting an estimated 51 households.

### *Potential Environmental Impacts and Mitigation*

4.7.4 With respect to nature conservation there will be a very limited direct impact through loss of land. More significant will be potential indirect impacts on wildlife migration, not least through increased economic activity, in particular from agricultural development bringing potential pressures on surrounding woodlands and forest reserves, wetlands and grasslands.

4.7.5 Typical construction impacts related to local erosion and water abstraction issues are clearly identified for management in the ESMP documents, and can mostly be mitigated effectively. Where they are unavoidable they are not significant. Naturally there will be health and safety risks to those employed during construction from use of machinery, etc. but these will be mitigated by good construction site and workshop management practice.

### *Potential Social Impacts and Mitigation*

4.7.6 Positive impacts derive from better access to tourism locations adding value to this resource which will create employment and income generating opportunities, as will employment opportunities on the road itself. In the operation phase there will be a restriction of dust and generally improved access to essential services. There will also be improved drainage across the road.

4.7.7 There will be a project resettlement and a compensation requirement from loss of land, property, crops and businesses due to the acquisition of land for new alignments and construction activities. It is estimated that approximately 638 persons in total will be implicated for compensation, with 108 affected entities identified (properties, businesses, trees, crops and a mosque). For mitigation, a detailed compensation plan and a full RAP have been designed and fully costed.

4.7.8 There is a potential risk of increased accidents once the road has been completed due to increased traffic volumes and vehicle speeds. The road engineering and design will ensure separation of pedestrian by enhanced road shoulders, separate township service lanes, parking bays for buses and trucks, speed control measures including road signs, and soft speed humps in populated areas and animal crossings. The project has nevertheless included a specific activity on road safety education.

4.7.9 The most significant direct social impact will be enhanced incomes of the people in the project area through employment and increased economic activities and development triggered by increased purchasing power. Approximately 1,500 people will be employed during the three year construction period out of which 10% are likely to be women. Indirectly, micro and small businesses will emerge including vending and restaurants, a trade predominantly operated by women in Tanzania

4.7.10 **Participation and Information Disclosure:** The Summary ESIA has been disclosed on the PIC website of the ADB from 17 May 2007. There has been extensive consultation since April/May 2006 when a socio-economic survey was first undertaken. Discussions were held with District Officials and roadside communities in the four affected districts; the indicative household survey covered 4,008 households. The RAP studies have been very recently updated with consultation of project affected persons (PAPs). No objections were registered; the main concerns were with employment opportunities heritage artefacts and sacred sites (graves, etc), as well as fair compensation.

4.7.11 **Environmental and Social Management Plan (ESMP):** the key elements of the ESMP are:

- a) Restriction of the location and operation of any construction activities like construction camps, deviations, material storage, borrow pit, quarry site, material repair within or near watercourses, wetlands, water catchments areas, wildlife corridors and wildlife management areas (BPWMA);
- b) Special measures for conserving the Kwakuchinja Wildlife Corridor by reduction of vehicle speeds, reduction of the slope of the road embankment, and enforcement of land use management in the vicinity of the BPWMA by means of a Wildlife Corridor Initiative (KWCI) in consultation with African Wildlife Foundation (AWF).
- c) Protection of water sources and wetlands from excess water abstraction and avoidable impacts from construction activities and provision of drainage and erosion prevention structures along the road to control flash floods and soil erosion.
- d) An HIV/AIDS mitigation component along the road corridor and working with road contract employees and other potentially vulnerable groups.
- e) Implementation of road safety measures through speed controls in towns and near schools and hospitals, safe crossing points and footpaths, safe stopping and parking for lorries and accident awareness campaigns in schools.

4.7.12 **ESMP/RAP Implementation Arrangements and Budget:** The contractor will be required to appoint an in-house Environment/Social/Health and Safety Officer who will be responsible for developing a detailed schedule for the ESMP and ensuring its implementation. The works supervision consultants will themselves retain the services of an environmental/social specialist to oversee and report on RAP/ESMP progress collaborating with NEMC to facilitate their inspection visits as required by the law. The total cost of the environmental mitigation and monitoring, including the conservation management (KWCI) components, HIV/AIDS and Road Safety, and RAP implementation is estimated at USD 1.15 million (of which the RAP compensation cost of UA 0.37 million is covered by the project cost and the balance is part of the government administrative budget).

4.7.13 The Kwakuchinja Wildlife Corridor Initiative (KWCI) will build on Burungwe Pilot Wildlife Management Area (BPWMA) experience and the lessons from the Manyara Ranch conservation management project of African Wildlife Foundation (AWF). The goal of sustainable ecological management of the Kwakuchinja Corridor will involve the following activities: diagnostic baseline studies; monitoring of interactions of road users and animals along the road; land use planning and designation proposals; and, participative management arrangements with local communities.

4.7.14 The allocated sum from the KWCI is US\$ 100,000 over three years, with a mid-term review of findings and achievements after two years, so that a final year of the contract will capitalise on findings and most successful mitigation areas and activities. It will support District Councils in conducting baseline studies and village resource use and planning to assure control measures over charcoal production, logging and land use change in the vicinity of the BPWMA and key corridor of wildlife migration across the project road. An agreed system of co-management with participating communities which will be institutionally and financially sustainable will be put in place. Regular reports on achievements and findings will be produced for TANROADS and NEMC. A possible sub-contract to an organization that undertakes similar activities as AWF is envisaged.

4.7.15 For the **Resettlement Action Plan (RAP)** an estimated budget of US\$ 480,000 has been set aside including monitoring and a contingency. The responsibility for implementing the RAP lies with TANROADS in collaboration with the Social Services Committees chaired by the District Executive Officers and assisted by the Ward and Village Executive Committees for coordinating, management and monitoring of the day-to-day execution. A grievance mechanism for resolving compensation disputes has been elaborated in the RAP. The Government will meet the full cost of resettlement and compensation.

4.7.16 The potential for the spread of **HIV/AIDS and STIs** is a matter of concern for construction workers, local communities living in the project area, and those using the road especially truck drivers, and in particular young women and schoolgirls who will be targeted in the project design. A provisional sum of US\$ 180,000 has been included in the BoQ. The responsibility for implementation lies with the Contractor who may subcontract a service provider (NGO or CBO) in the area. The environmentalist/ social officer working for the Consulting Engineer will supervise this activity as part of the ESMP. TANROADS will oversee the overall operation and ensure its effectiveness.

4.7.17 The improved road will inevitably result in increased traffic volumes and increased vehicle speeds. The project design has included an activity of **road safety education and baseline study**. A provisional sum of USD 30,000 has been included for a sub-contract to an approved service provider. The activities include diagnostic base line safety study of the project road and conducting road safety education and campaign. Road Safety Division in TANROADS will oversee and monitor the execution of this activity ; the Consulting Engineer's staff will supervise its implementation. The road design includes: widened road shoulders for pedestrians; separate township service lanes; parking bays

for buses and trucks; speed control measures including distinct road signs; and, soft speed humps in populated areas or where animals are regularly crossing.

#### 4.8 Project Costs

4.8.1 The project cost estimate (net of all taxes and duties) is UA 83.17 million (TZS 158.108 billion) of which the foreign exchange cost is UA 65.22 million (TZS 123.991 billion) or 78% of the total. The local cost portion is UA 17.95 million (TZS 34.117 billion). The estimated amount of tax is UA 18.26 million bringing the overall financial cost of the project inclusive of tax to UA 101.43 million.

4.8.2 The estimated project cost is based on the Bills of Quantities prepared by an engineering consulting firm contracted by TANROADS and financed through a Nordic Development Fund grant and managed by the World Bank, and Bank appraisal team estimates. Summary of project cost estimates by component are shown in Table 4.1 and by category of expenditure are presented Table 4.2. Table 4.3 shows the cost of each component of the project with its physical and price contingency built in the figures.

4.8.3 The cost of civil works is estimated at UA 66.46million. An amount of UA 4.09 million is provided for all consulting services and UA 0.31 million for compensation of project affected people. A provision of 10% of base cost (UA 7.09 million) is made to accommodate physical contingency. Using inflation rates of 4% on foreign currency costs and inflation rate of 6.7% on local costs, a price contingency of UA 5.21 million has been provided.

4.8.4 The possibility of cost overruns is real as has been noted in many projects funded across the continent. In an effort to reduce the probability of occurrence of cost overruns, the project has factored effects of recent oil price increase and the associated price instability in the construction industry. However, the volatility of the cost regime is so much widespread that it has come to the attention of the Bank and a consultant has been recruited to study the underlying issue and make appropriate recommendation.

**Table 4.1: Summary of Project Cost (Net of Taxes) by Component**

Components	(in millions of TZS)			(in millions of UA)			% F.E
	Foreign Exchange	Local Costs	Total Costs	Foreign Exchange	Local Costs	Total Costs	
<b>A. Civil Works</b>							
i. Lot 1 - Singida - Katesh	25,628	7,229	32,857	13.48	3.80	17.28	78%
ii. Lot 2 - Katesh - Dareda	28,408	8,012	36,420	14.94	4.21	19.16	78%
iii. Lot 3 - Dareda - Minjingu	44,514	12,555	57,069	23.42	6.60	30.02	78%
<b>B. Consultancy Services</b>							
i. Supervision Consultancy for Lot 1	1,774	197	1,971	0.93	0.10	1.04	90%
ii. Supervision Consultancy for Lot 2	1,967	219	2,185	1.03	0.11	1.15	90%
iii. Supervision Consultancy for Lot 3	3,082	342	3,424	1.62	0.18	1.80	90%
iv. Audit consultancy services	60	140	200	0.03	0.07	0.11	30%
<b>C. Others</b>							
i. Compensation costs		599	599	-	0.31	0.31	0%
<b>Total Base Cost</b>	<b>105,433</b>	<b>29,293</b>	<b>134,725</b>	<b>55.46</b>	<b>15.41</b>	<b>70.87</b>	<b>78%</b>
Physical Contingency (10%)	10,543	2,929	13,473	5.55	1.54	7.09	78%
Price Contingency (4% FE & 6.7% LC)	8,015	1,895	9,910	4.22	1.00	5.21	81%
<b>Total Project Cost</b>	<b>123,991</b>	<b>34,117</b>	<b>158,108</b>	<b>65.22</b>	<b>17.95</b>	<b>83.17</b>	<b>78%</b>

**Table 4.2: Summary of Project Costs by Category of Expenditure**

Category	(in millions of TZS)			(in millions of UA)			% F.E
	Foreign Exchange	Local Costs	Total Costs	Foreign Exchange	Local Costs	Total Costs	
<b>A. Civil Works</b>	98,550	27,796	126,346	51.84	14.62	66.46	78%
<b>B. Consultancy Services</b>	6,883	898	7,781	3.62	0.47	4.09	88%
<b>C. Others</b>	0	599	599	-	0.31	0.31	0%
<b>Total Base Cost</b>	<b>105,433</b>	<b>29,293</b>	<b>134,725</b>	<b>55.46</b>	<b>15.41</b>	<b>70.87</b>	78%
Physical Contingency (10%)	10,543	2,929	13,473	5.55	1.54	7.09	78%
Price Cont. (4% FE & 6.7% LC)	8,015	1,895	9,910	4.22	1.00	5.21	81%
<b>Total Project Cost</b>	<b>123,991</b>	<b>34,117</b>	<b>158,108</b>	<b>65.22</b>	<b>17.95</b>	<b>83.17</b>	78%

**Table 4.3: Summary of Project Costs by component with contingencies built in each component**

COMPONENTS	TZS (millions)	UA (millions)
<b>A. Civil Works</b>		
i. Lot 1 - Singida - Katesh	38,559	20.28
ii. Lot 2 - Katesh - Dareda	42,740	22.48
iii. Lot 3 - Dareda - Minjingu	66,972	35.23
Total cost of works	148,270	77.99
<b>B. Consultancy Services</b>		
i. Supervision consultancy services for Lot 1	2,316	1.22
ii. Supervision consultancy services for Lot 2	2,567	1.35
iii. Supervision consultancy services for Lot 3	4,023	2.12
iv. Audit consultancy services	234	0.12
Total cost of services	9,140	4.81
<b>C. Others</b>		
i. Compensation costs	697	0.37
<b>Total Project Cost</b>	<b>158,108</b>	<b>83.17</b>

#### 4.9 Sources of Financing and Expenditure Schedule

4.9.1 The African Development Fund (ADF) and the Government of Tanzania (GOT) shall co-finance the project. The Bank has set aside UA 60 million from the ADF X resources to advance a loan to the Government of Tanzania to finance part of the costs of implementing the Singida – Babati – Minjingu road upgrading project.

4.9.2 The Bank loan of UA 60 million will cover 72% of the total project cost, currently estimated at UA 83.17 million, while the Governments contribution of UA 23.17 million will cover about 28% of the project cost. Table 4.4 below summarises the financing arrangement showing how each source will contribute to the local and foreign currency costs.

4.9.3 The project foreign exchange costs are estimated at UA 65.22 million while the local costs are UA 17.95 million. The ADF loan will cover UA 59.45 million of the foreign costs while the GOT counterpart funds will cover the balance of UA 5.77 million. The ADF loan will also cover UA 0.55 million of the local currency costs while the GOT funds will cover the balance of UA 17.40 million. Table 4.4b shows the percentages that both the ADF and GOT will contribute in various currencies.

**Table 4.4a: Summary of Financing Arrangement**

Source	(in millions of Tanzania Shillings)			(in millions of UA)			%
	Foreign Exchange	Local Costs	Total Financing	Foreign Exchange	Local Costs	Total Financing	
ADF X Loan	113,016	1,046	114,062	59.45	0.55	60.00	72%
GOT Counterpart	10,975	33,071	44,046	5.77	17.40	23.17	28%
<b>TOTAL</b>	<b>123,991</b>	<b>34,117</b>	<b>158,108</b>	<b>65.22</b>	<b>17.95</b>	<b>83.17</b>	100.0%

**Table 4.4b: Percentage contributions to the foreign and local currency**

SOURCE	FE	LC	TOTAL
ADF	91%	3%	72%
GOT	9%	97%	28%
<b>Total</b>	100%	100%	100%

4.9.4 The Government shall provide in its annual budget an amount of UA 4-6 million (about TZS 10 billion) or whatever amount is required for the respective year, and transfer the funds to TANROADS bank accounts, during the project implementation period of 4 years, or until the project is completed. The funds will be budgeted and transferred for the express purpose of funding the Singida – Babati – Minjingu road upgrading project. The Bank, assisted by the Tanzania Country Office, will closely monitor the annual budgeting process to ensure that funds for the projected have been provided for, and that transfer of the funds to the implementing agency is executed efficiently.

4.9.5 The Government of Tanzania has confirmed that it has capacity to provide the counterpart fund requirement of UA 23.17 million in the project implementation life of 3 – 4 years. The Bank appraisal team undertook a due diligence to confirm this stated capacity. The team studied the way Government has been financing the road development through the Ministry of Infrastructure Development (MoID) and TANROADS. In its evaluation, the Bank considered the system of transfer of funds from Treasury to TANROADS through the MoID, the quantum of required annual funds for this project (about UA 4-6 million) compared to current allocation to road development (about UA 79 million in FY 2004/05), inclusion of project in the MTEF, and the macro-economic and general budgetary support. It was concluded that the government can afford the extra cost of UA 4-6 million every year for the 3 - 4 year implementation period.

4.9.6 The contribution of Bank loan and the GOT counterpart funds to each category of expenditure is laid out in Table 4.5 below. The ADF loan will cover UA 55.19 million of the foreign exchange cost of the civil works and all the consultancy services cost estimated at UA 4.81 million (UA 4.26 million in foreign and 0.55 million in local currency). The GOT counterpart funds will cover the UA 5.77 million foreign currency cost of the civil works, all the local currency costs of the civil works estimated at UA 17.03 million. In addition the government will pay for the compensation / resettlement of people affected by project cost of UA 0.37 million. Table 4.5 below tabulates the contribution of each financing source to the various categories of expenditure.

4.9.7 The expenditure schedule for each project component is shown in Table 4.6 below and expenditure schedule by source of financing is shown in Table 4.7 below. The expenditure schedule has evolved from the total estimated cost of the project spread over the implementation period of 4 years plus one year after construction when some bills are settled.

**Table 4.5: Contributions of Financial source to the various Categories of Expenditure (UA million)**

CATEGORY	SOURCE	FE	LC	TOTAL	%
Civil works	ADF	55.19	-	55.19	71%
	GOT	5.77	17.03	22.80	29%
	<b>Sub Total</b>	<b>60.97</b>	<b>17.03</b>	<b>77.99</b>	
Consultancy	ADF	4.26	0.55	4.81	100%
	GOT	-	-	-	0%
	<b>Sub Total</b>	<b>4.26</b>	<b>0.55</b>	<b>4.81</b>	
Compensation	ADF	-	-	-	0%
	GOT	-	0.37	0.37	100%
	<b>Sub Total</b>	<b>-</b>	<b>0.37</b>	<b>0.37</b>	
Totals	ADF	59.45	0.55	60.00	72%
	GOT	5.77	17.40	23.17	28%
	<b>Grand Total</b>	<b>65.22</b>	<b>17.95</b>	<b>83.17</b>	
Per cent ages		78.4%	21.6%		

**Table 4.6: Expenditure schedule by component (UA million)**

Components	Disbursement or each Component per Year (UA million)					Total
	2008/9	2009/10	2010/11	2011/12	2012/13	
<b>A. Civil Works</b>	15.60	23.40	23.40	7.80	7.80	77.99
<b>B. Consultancy Services</b>						
i. Supervision	0.94	1.41	1.41	0.47	0.47	4.69
ii. Audit	0.02	0.04	0.04	0.01	0.01	0.12
<b>C. Others</b>						
i. Compensation costs	0.37					0.37
<b>Total Project Cost</b>	16.93	24.84	24.84	8.28	8.28	83.17

**Table 4.7: Expenditure schedule by source of financing (UA million)**

Source	Disbursement for from each Source per Year (UA million)					Total
	2008/9	2009/10	2010/11	2011/12	2012/13	
ADF X Loan	12.00	18.00	18.00	6.00	6.00	60.00
GOT Counterpart	4.93	6.84	6.84	2.28	2.28	23.17
<b>TOTAL</b>	16.93	24.84	24.84	8.28	8.28	83.17

## 5 PROJECT IMPLEMENTATION

### 5.1 Executing Agency

5.1.1 The Tanzania National Roads Agency (TANROADS) will be the executing agency for the project. TANROADS is a semi-autonomous road agency of the Ministry of Infrastructure Development with the responsibility for the maintenance and development of the classified trunk and regional road networks. TANROADS, although it exercises a considerable degree of independence in its operations, reports directly to the Permanent Secretary (PS) Ministry of Infrastructure Development. The TANROADS board, consisting of 5 private sector members and 4 government senior managers, is advisory to the Permanent Secretary in line with the National Executive Agencies Act No 30 of 1997 and TANROADS establishment order.

5.1.2 TANROADS has the requisite organizational capacity to maintain and develop the classified trunk and regional road network in Tanzania. It has a wealth of experience in management of Bank funded projects and other Development Partners projects as well. TANROADS has proper procedures for procurement, accounting and supervision. The establishment consists of a Chief Executive with its functions divided among four departments of Maintenance, Development, Engineering and Finance and Administration. TANROADS has over 770 staff of which 160 are engineers. The headquarters is staffed with a considerable number of Project Engineers and Managers. TANROADS is in the process of hiring 23 engineers and related professional staff most of them will be deployed in the headquarters to manage projects. Once these professional report to work, it is expected that the low capacity problem will have been addressed for the next 2 – 3 years.

5.1.3 Further, as stated elsewhere in this report, TANROADS will employ a consultant to study the operations and management of the organization. The results of the study will form the basis for a strategic expansion and development of the organisations and other management aspects.

### 5.2 Institutional Arrangements

5.2.1 The Borrowers representative shall be the Ministry of Finance who shall delegate the responsibility for the execution of the project to the Ministry of Infrastructure Development (MoID). MoID has legally designated its agency, TANROADS, to implement the works, as the technical arm of the MoID. TANROADS shall enter into contracts with the civil works contractors and the consultants for supervision and audit and will be in charge for the implementation of the project and proper management of the execution of the contracts therein.

5.2.2 In accordance with standard Bank procurement documents, the Employer for the works contracts shall be the TANROADS and supervision consultants shall be the Engineer's Representative. The Engineer for the works shall be the Director of Development, TANROADS, who shall designate a Project Engineer to be responsible for project. The Project Engineer designate shall be of suitable experience, with minimum BSc degree, Registered Engineer status and 10 years experience in roads / project management, and shall be acceptable to the Bank. **The appointment of a suitable Project Engineer will constitute a condition to be fulfilled prior to the first disbursement of Bank loan funds.**

### 5.3 Supervision and Implementation Schedules

5.3.1 The construction works for the Singida – Babati - Minjingu road project will be divided into 3 lots (Lots 1, 2 and 3) carried out by 3 contractors. The works will be inspected and supervised by 3 engineering consulting firms, one for each lot. For Lots 1 and 2, the construction works will be implemented over a period of 36 months followed by a 12-month defects liability period. Lot 3 will be

constructed over a 4 year period with an additional 12 months defects liability period. The overall construction schedule is therefore 4 years starting from September 2008, when all the works will commence, to October 2012. Proposed Processing Schedule is listed below in Table 5.1.

**Table 5.1: Summary of Project Implementation Schedule**

<u>Activities</u>	<u>Date</u>	<u>Agency Responsible</u>
<b><u>i. Construction of Works Contract</u></b>		
Board Approval	Sept 2007	ADF
Publication of GPN	Oct 2007	GOT/ADF
Publication of SPN	Nov 2007	GOT/ADF
Call for tenders/Invitation to bid	Nov 2007	GOT
Receipt of Tenders (90 days)	Feb 2008	GOT
Evaluation	Mar 2008	GOT
Approval of evaluation	Apr 2008	ADF
Negotiation and signing of Contract	May 2008	GOT
No objection to Draft Contract	Jun 2008	ADF
Execution/signing contract	July 2008	GOT
Contract commencement	Sept 2008	GOT
Construction completed	Oct 2012	GOT
Defects Liability End	Oct 2013	GOT
<b><u>ii. Consultancy Services for Works Supervision</u></b>		
Board Approval	Sep 2007	ADF
Short listing of Consultants by Borrowers	Oct 2007	GOT
Request for No objection to Short List	Oct 2007	GOT
No Objection to Short list / RFP	Nov 2007	ADF
Issue of RFP	Nov 2007	GOT
Receipt of Proposals	Jan 2008	GOT
Complete Evaluation	Feb 2008	GOT
Approval of evaluation/No Objection	Mar 2008	ADF
Negotiation	Apr 2008	GOT
No Objection to contract signature	Apr 2008	ADF
Signing of Contracts	May 2008	GOT
Commencement of Consultancy Services	June 2008	GOT
Completion of Services	Oct 2013	GOT
<b><u>iii. Banks Supervision Schedule</u></b>		
Launching mission	Oct 2007	ADF
Supervision mission	July 2008	ADF
Supervision mission	July 2009	ADF
Mid term review mission	Apr 2010	ADF
Supervision mission	Jan 2011	ADF
Supervision Mission	Sept 2011	ADF
Supervision mission	May 2012	ADF
Supervision mission	Jan 2013	ADF
Completion CPR mission	Mar 2014	ADF

## 5.4 Procurement Arrangements

**5.4.1** Procurement arrangements are summarized in Table 5.2. All procurement of goods, works and acquisition of consulting services financed by the Bank will be in accordance with the Bank's Rules of Procedure for Procurement of Goods and Works or as appropriate Rules of Procedure for the Use of Consultants, using the relevant Bank Standard Bidding Documents.

5.4.2 TANROADS, the executing agency, will be responsible for the procurement of civil work contractors and supervision and audit consultants. The agency has adequate resources, technical capacity, expertise and experience in procuring Bank funded projects as well as those funded by government resources and other development partners, to carry out the procurement.

5.4.3 **Civil Works:** The procurement of 3 separate contracts for the Lots 1, 2 and 3 civil works will be carried out using open International Competitive Bidding (ICB) procedures. Lot 1: Singida – Katesh road section is valued at UA 20.82 million, Lot 2: Katesh - Dareda road section is valued at UA 22.48 million; and Lot 3 Dareda - Babati – Minjingu road valued at UA 35.23 million (excluding taxes and duties)..

5.4.4 **Supervision Consulting Services:** The procurement of 3 separate contracts for consultancy services for the supervision of the 3 lots of civil works (Lots 1, 2, 3) shall be carried out in accordance with Banks Rules of Procedure for the Use of Consultants. The services are valued at UA 4.69 million. The firms will be procured on the basis of short-lists of consulting firms prepared by the Borrower's own experience of consulting firms. The selection procedure will be based on combined technical quality and price consideration. Both technical and financial evaluation shall be completed before seeking Bank's no objection in one-step.

5.4.5 **Project Audit Services:** One firm for the audit services will be procured through a short-list of auditing firms, in consultation with the Auditor General Offices, to audit the executing agencies in so far as the project works and consultancy services are concerned. Since the amount of contract for audit services is less than UA 350,000, according to Bank rules, the Borrowers may limit the publication of the announcement to national or regional newspapers. However, any eligible consultant, being regional or not, may express the desire to be short-listed. The selection procedure will be based on establishing the comparability of technical proposals and selection of the lowest financial offer.

**Table 5.2: Summary of Procurement Arrangements**

Project Categories	Summary of Procurement Arrangements (in millions UA)			
	ICB	Short List	Others **	Total
<b>1. Civil Works</b>	77.99 (55.19)*			<b>77.99</b>
<b>2. Consulting Services</b>		4.81 (4.81)*		4.81
<b>3. Miscellaneous</b>			0.37	0.37
<b>TOTAL</b>	<b>77.99 (55.19)</b>	<b>4.81 (4.81)</b>	<b>0.37</b>	<b>83.17</b>

\* Amounts in parentheses ( ) are those financed by the ADF

\*\* 'Others' include limited international competitive bidding, national or international shopping, direct purchase or force accounts,

5.4.6 **Compensation and resettlement:** The Governments of Tanzania through TANROADS will be responsible for payments of compensation and resettlement of persons affected by construction of the road. An amount of UA 0.37 million has been estimated in the project costs for this activity. Government has undertaken to finalize all compensation and resettlement of project affected persons

in accordance with the RAP prior to commencement of the civil works and has been made condition of the loan.

**5.4.7 National Procedures and Regulations:** The national procurement laws and procedures have been examined and found acceptable. However, Bank rules will be applied in the procurement of works and services.

**5.4.8 General Procurement Notice:** The text of a General Procurement Notice (GPN) has been agreed with Executing Agency and it will be issued for publication in Development Business, upon approval by the Board of Directors of the Loan Proposal.

**5.4.9 Review Procedures:** The following documents are subject to review: General Procurement Notice and Specific Procurement Notices (SPN), Tender Documents and Requests for Proposals including post qualification documents, Tender Evaluation Reports and Reports on Evaluation of Consultants' Proposals and Draft Contracts, if the Form of Contract document in the Standard Bidding Document has been amended.

## **5.5 Disbursement Arrangements**

5.5.1 The ADF loans will be used to finance two categories of expenditures namely civil works and consultancy services. Disbursement for the ADF loan under the civil works and services will use the direct payment method against standard documentation as specified in the Bank's Disbursement Handbook.

## **5.6 Monitoring and Evaluation**

5.6.1 TANROADS will be responsible for the implementation of the project (including the ESMP) and will send regular reports to the Bank. The Bank will monitor the project implementation using missions and reports submitted by the executing agency.

5.6.2 TANROADS shall regularly provide the Bank with quarterly progress reports for the project including the implementation of the ESMP in the established format covering all aspects of the concerned components. These reports will include physical, financial performance indicators, social and environmental impacts. All reports shall be submitted 30 days after the close of a quarter and shall be copied to the Bank's Country Office in Dar es Salaam.

5.6.3 The Bank will be responsible for monitoring the project implementation. The Bank will mount a Project Launching Mission in which they will avail expertise in various project management areas. The Bank will supervise the implementation by visiting the project at least every 8 months. A mid-term review will be undertaken during the second year of implementation in 2009/10 to identify any major constraints facing the project and provide the required corrective measures. The Banks Tanzania Country office will assist in launching and supervising the project.

5.6.4 The environmental and social mitigation measures shall be executed by the contractors under the supervision of the supervising consultant and TANROADS. They will be monitored by the Tanzania's National Environmental Management Council (NEMC). NEMC will send periodic reports of its monitoring activities to the Bank.

5.6.5 Within six months of project completion, TANROADS will prepare the Recipient's Project Completion Report (PCR) to be submitted to the Bank. Subsequently, the Bank will carry out its own PCR. The PCR reports and the Executing Agency's performance statistics and financial results will form the basis for the post-evaluation of the project.

## **5.7 Financial Reporting and Auditing**

5.7.1 The Finance and Administration Division of TANROADS will be responsible for financial management and reporting procedures for the project. The Division has been fully established with its full complement of staff as shown in the organizational structure. TANROADS has already prepared an Accounting Manual which is in use. This will ensure that accounting and auditing functions are carried out in a sound and desirable manner.

5.7.2 TANROADS will open and maintain a separate account for the project, and keep all the financial records of the projects. The financial statements and project accounts will be audited annually during project implementation following the Bank's Guidelines for Project Audit. Qualified independent audit firms procured on the basis of terms of reference acceptable to the Fund shall undertake the auditing services. The Audit reports shall be submitted to the Bank regularly once every year and after project completion.

## **5.8 Aid Co-Ordination**

5.8.1 The Development Partners supporting Tanzania's efforts to develop and maintain its transport network have organized themselves into what is called the Transport Sector Development Partners Group that meets regularly. The major transport sector Development Partners include the World Bank, EU, DANIDA, Japan, NORAD, Italy, Kuwait and AfDB, among others. The Partners have been working with Government (MoID) to formulate the Transport Sector Investment Programme (TSIP). The TSIP is the vehicle through which the Development Partners are engaging the government in dialogue.

5.8.2 The government has given the TSIP the mandate to operationalize the National Transport Policy (2003) which captures the country's vision for economic development. The 10 year programme is very ambitious and calls upon the Development Partners and GOT to invest over USD 500 million per year for the next 5 years. In the last 5 years (2001 – 2005), the Development Partners contributed USD 547 million against the governments own contribution of USD 311 million. The TSIP is undergoing further discussion.

5.8.3 . Since the establishment of TZFO in 2004 the office has been useful in bridging the communication gap between the Government and the Bank by following up on projects and participating fully in the donors' coordination.

## **6 PROJECT SUSTAINABILITY AND RISKS**

### **6.1 Recurrent Costs**

6.1.1 The project recurrent cost in this context refers to the routine and periodic maintenance costs. Before start of project and after the completion of road construction, the project recurrent costs will be borne by the Government. During construction, maintenance of the road and its contractual road deviations will be the responsibility of the contractor. The contractor will be responsible for road maintenance during the construction and the one year defect liability period.

6.1.2 According to current expenditure on routine maintenance (about USD 1400 per km per year), the annual need for the project road will be USD 0.31 million. 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 proper routine road maintenance. As a matter of policy, Tanzania Road Fund Board (RFB) has prioritised routine maintenance of all bitumen roads in maintainable condition. This means that, regardless of the total funding available, the project road is assured to

receive sufficient routine maintenance. The first periodic maintenance for the newly constructed road will be due around 2019, twelve years from now. Government would have to consider the implementation of additional sources of revenue as stated under section 3.6 above, in order to mobilize sufficient fund and close the general road maintenance funding gap.

## **6.2 Project Sustainability**

6.2.1 Tanzania Roads Fund Board is responsible for funding road maintenance while the Tanzania National Roads Agency is responsible for the execution of the maintenance activities. These two institutions have both institutional and legal capacity to maintain the road network in the country including the project road. GOT has expressed its commitment to the maintenance of this road and the rest of the network. Experience in the past 5 years shows that roads newly constructed have continued to get due routine maintenance. As shown above under sections 3.6.3, the fuel levy is sufficient for the routine maintenance. Independent audits have indicated that TANROADS is delivering value for money on its allocation. Furthermore, measures to reduce pre-mature road failure are being implemented through axle-load control. Through enforcement, overloading has reduced from 40% in 2000 to 7.8% in 2006. In Tanzania, the project road is one of the core networks of the strategic roads that are given priority in allocation of fuel levy funds.

6.2.2 There is increased role of the private sector in routine and periodic maintenance and a corresponding reduction of use of the force account units (government owned contracting capacity) who are now limited to emergency responses only. At the moment 99 percent of the maintenance works are contracted out in Tanzania. This is leading to proper market creation and thereby enhances the growth of the private contractors and the domestic construction industry.

6.2.3 From the foregoing, it can be confirmed that in Tanzania, routine maintenance program would be implemented for the sustainability of the project road. For periodic maintenance, the Government would have to consider mobilizing funds from other sources of revenue, as stated under sections 3.6.8 and 3.6.9, so as to close the funding gap by 2019, when the periodic maintenance of the project road is due. During project design and preparation, all the major beneficiaries were consulted widely and have confirmed their acceptance of the project and are sure to utilise the road.

## **6.3 Critical Risks and Mitigation Measures**

6.3.1 Key implementation project risks are: commitment of Government to fulfil the intent of MKUKUTA, MDGs, TSIP and Road Safety Mater Plan; price escalation; counterpart funding; and timely and effective implementation of the RAP and ESMP. These risks and the mitigation measures are discussed as follows.

6.3.2 There is a risk that Government might fail to commit to the objectives sets in the MKUKUTA, MDGs, TSIP and the Road Safety master Plan. The risk is managed by Development Partners continuous dialogue with the Government on the implementation of the MKUKUTA, MDGs, TSIP and Road Safety Master Plan.

6.3.3 There is the risk of price escalating to a point that the project viability is threatened due to world fuel price increases. The risk is managed by fast-tracking project implementation. The viability of the project has also been reviewed and reconfirmed in May 2007, considering the effect of the existing high oil price. In addition the project cost has a provision of price contingency (4% for foreign currency and 6.7 % for local costs) above the estimated deign review costs.

6.3.4 The risk of failure by the government to provide counterpart funding is low, according to the assurances given by Government and the due diligence conducted by the Bank on government's

capacity to contribute. However, under the loan agreement, a provision shall be made to for the Borrower to undertake to budget annually for the appropriate sum of counterpart funds according to the financing arrangement, and to transfer the funds to Tanzanian National Roads Agency, the executing agency, for the express use on the project. The Bank, assisted by the Tanzania Country Office, will closely monitor the annual budgeting process to ensure that funds for the projected have been provided for, and that transfer of the funds to the implementing agency is executed efficiently.

6.3.5 There is a risk that if the resettlement and compensation programme is not expedited and efficiently executed, there could be a complication of the administrative tasks and legal/compliance arrangements, which could cause delays if affected persons are to be compensated before construction on any particular road section. In order to mitigate this risk, a loan condition precedent to first disbursement requiring the Government to compensate the people affected by the construction activities, on section by section basis according to approved contractor's program, has been provided for..

## **7 PROJECT BENEFITS**

### **7.1 Economic Analysis**

7.1.1 The methodology for the Economic Analysis is based on the Highway Development and Management (HDM – IV) model. The indicator of viability used is the Economic Internal Rate of Return (EIRR) and Net Present Value (NPV) for each of the project links and for the overall project. For economic analysis, financial construction costs in section 4.8 have been converted to economic costs using standard conversion factors of 0.82. The opportunity cost of capital for Tanzania estimated at 12% has been adopted for the economic evaluation as minimum rate of return acceptable for intervention in the project. The weighted average traffic in 2006 is 232 and is expected to reach 502 in 2012, when the road opens to traffic and 805 in 2017.

7.1.2 The economic analysis was revised in May 2007 to take into consideration the road pavement engineering design review and the 2006 average price of oil price of USD 66 per barrel, and the economic cost for the investment is estimated as USD 97.0 million.

7.1.3 The results of the economic evaluation by Lots show an EIRR of 12.7 percent for Singida – Katesh; 13.5 percent for Katesh – Dareda and 16.7 percent for Dareda – Minjingu. The result of the overall project indicated an EIRR of 14.9 percent, which is above the opportunity cost of capital in Tanzania and NPV of USD 14.85 million. This result confirms the economic viability of upgrading of the whole Singida - Babati – Minjingu road project.

7.1.4 The intervention on the road project is therefore economically desirable and would contribute significantly to inter-regional economic integration, notably in strengthening connections between the north and western regions of Tanzania, improve access to markets and social services in the project's zone of influence. A summary of the economic analysis result is in Annex 4.

### **7.2 Social Impact Analyses**

7.2.1 The proposed road upgrading and ancillary works will facilitate the government of Tanzania's efforts towards poverty alleviation in line with the NSGRP and the MDGs. It will impact on the livelihoods of the beneficiaries through multiplier effect and a multitude of beneficial externalities. Temporary employment opportunities for approximately 1500 people as construction workers will be created. Wage earnings of these people approximately TZS 672,000 per person per year which will boost the purchasing power of the area as a whole. Additional long term employment will be created through maintenance works. The Construction Industry Policy (CIP) in Tanzania recognizes the

benefit of involvement of women in construction activities, especially maintenance work. The MoID Strategic Plan (2004/05 – 2008/09) advocates a two percentage point annual growth in women participation in the road construction sector, and TANROADS policy of targeting 25% of routine road maintenance works contracts for women contractors.

7.2.2 Secondly, the upgraded road will lead to an enhancement of agricultural productivity and subsequent farm-gate prices through improved access to inputs and information on improved farming techniques (high yielding seed varieties, improved animal breeds) and increased use of inorganic fertilizers. Yields could potentially increase for both food and cash crops. The country imports about 125,000 tons of wheat per year and yet data from district profiles shows that the region has a potential to produce at least 70,000 tons. Singida has a high production capacity of sunflower with markets in Arusha and Nairobi. The new road would facilitate extension services for livestock from the current coverage of 20% of the farming households, and in so doing contain the spread of contagious diseases such as pleuropneumonia<sup>1</sup> (in Manyara).

7.2.3 In the third instance, the upgraded road would improve the wellbeing of the people through improved access to health facilities (especially referral services). Distribution of medical supplies would be facilitated; so would deployment of medical personnel; ambulance services (critical for obstetric care); and subsequently improve the current maternal death rates of 578/100,000. Similarly, the road would facilitate secondary education admissions since most students at this level use public transport to and from school. Education quality would also improve through eased distribution of teaching and learning materials, better supervision, and would improve the chance of deploying better qualified teachers to rural schools.

7.2.4 Finally, an upgraded road would potentially boost tourism in the project area. The Northern Tourist Circuit (Arusha, Kilimanjaro) has approximately 100,000 visitors per park per year. In contrast, the Southern and Western Circuits have attracted only 5% and 1% of this number, respectively. While the southern and western regions may not have as attractive centres as those of the north, the Tourist Master Plan includes Kondoa and Hanang in the Northern Tourism Development zone and sees a real potential for growth. Evidence shows that currently only 10% of tourists that visit Arusha have enquired about onward travel to Mwanza and Lake Victoria shores. With adequate investment in hospitality infrastructure etc., the project area would potentially facilitate tourism growth of between 5 - 10%.

### **7.3 Sensitivity Analysis**

7.3.1 The robustness of the economic result discussed above was tested for sensitivity to changes in the basic assumptions on construction costs and on traffic levels. Three alternatives were checked for the whole project, namely: (i) construction cost increased by 10 percent while benefits remained the same; (ii) benefits declined by 10 percent while costs remained the same; and (iii) a combined 10 percent increase in cost and 10 percent decrease in benefit.

7.3.2 The economic parameters were calculated for all the three cases. The results given in the table hereunder indicate that in all the three alternatives, the project road is satisfactory with an EIRR higher than the threshold of 12.0% opportunity cost of capital and NPV remaining positive. In the worst case scenario of a combined 10% increase in costs and 10% decline in traffic, the project is viable with an EIRR of 12.5 % and a NPV of USD 3.72 million.

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<sup>1</sup> An infectious febrile disease of cattle, caused by a mycoplasma and characterized by inflammation of the pleura and lungs.

**Table 7.1: Sensitivity Analysis on Base Case**

Scenarios	Traffic Level as % of base case	Cost of Const. as %age of expected cost	EIRR (%)	NPV in million USD
a. Base case	100%	100%	14.9	14.85
b. Costs Increased by 10%	100%	110%	13.7	13.34
c. Benefits Reduced by 10%	90%	100%	13.6	11.25
d. Combined 10% increased cost and 10% decrease in traffic levels	90%	110%	12.5	3.72

Source: Consultancy Services for Feasibility Study Review and Detailed Engineering Design for Upgrading of Singida – Babati – Minjingu Road & ADF Appraisal Mission April / May 2007.

7.3.3 The results of economic evaluation are sensitive to both increases in construction cost and traffic decline. But the result is marginally more sensitive to the decline in the traffic than increase in construction cost. The decline in the traffic by 10 percent is most unlikely as traffic growth rate on the network has been between 3 - 4% per annum and a medium growth assumption of 6.5% to 7.5% has been considered.

7.3.4 Project construction cost estimates are based on final detailed engineering design study and taking into account the prevailing oil price and an addition physical contingency provision of about 10% above the base costs. With this consideration, the project is still viable with a 10 per cent increase in the construction cost.

7.3.5 An analysis of switching values is undertaken for the whole project. Switch values represent the percentage change in value of benefits that would give NPV of zero or result in EIRR equivalent to the opportunity cost of capital of 12.0% in Tanzania. The result indicated that the project viability will be threatened if construction cost increases by 29.4% or traffic declines by 22.7%. These are critical factors to watch, though the project is more sensitive to drop in traffic levels. These situations are most unlikely and are remote as explained under sections 7.3.3 and 7.3.4 above.

## **8 CONCLUSIONS AND RECOMMENDATIONS**

### **8.1 Conclusions**

8.1.1 The results of economic analysis of the proposed project shows a positive net present value and an internal rate of return higher than the opportunity cost of capital in Tanzania. The projects, if implemented, will be sustainable within the existing policy and institutional arrangements. Therefore, the proposed Siginda – Babati – Minjingu Road Upgrading Project is viable and well timed for implementation.

8.1.2 Implementation of the project will connect northern parts of Tanzania which are not linked to a bitumen road and will promote regional integration, increased trade, improved health and education service and other social and economic development for Tanzania.

8.1.3 In general, the project has been well conceived and is technically feasible, socially and environmentally sustainable, and economically justified and viable.

### **8.2 Recommendation**

It is recommended that the African Development Fund (ADF) provides loan not exceeding UA 60 million to Government of the United Republic of Tanzania for the implementation of .the Singida – Babati - Minjingu road upgrading project.

### **8.3 Conditions of the Loan**

The loan shall be subject to the following specific and particular conditions:

#### **A: Conditions Precedent to Entry into Force:**

The entry into force of the Agreements shall be subject to the fulfillment by the Borrower of the conditions set forth in Section 5.01 of the General Conditions Applicable to Loans and Guarantee Agreements of the Fund.

#### **B: Condition Precedent to First Disbursement of the Loan**

The obligations of the Fund to make the first disbursement of the loan shall be conditional upon entry into force of this Loan Agreement as provided above and the Borrower shall have to the satisfaction of the Fund:

- (i) provided evidence of compensation of project affected persons in each respective road section prior to commencement of activities for the relevant road section in accordance with the construction program and the RAP (para 6.3.5).
- (ii) Provided evidence of the appointment of a suitable Project Engineer (para 5.2.2).

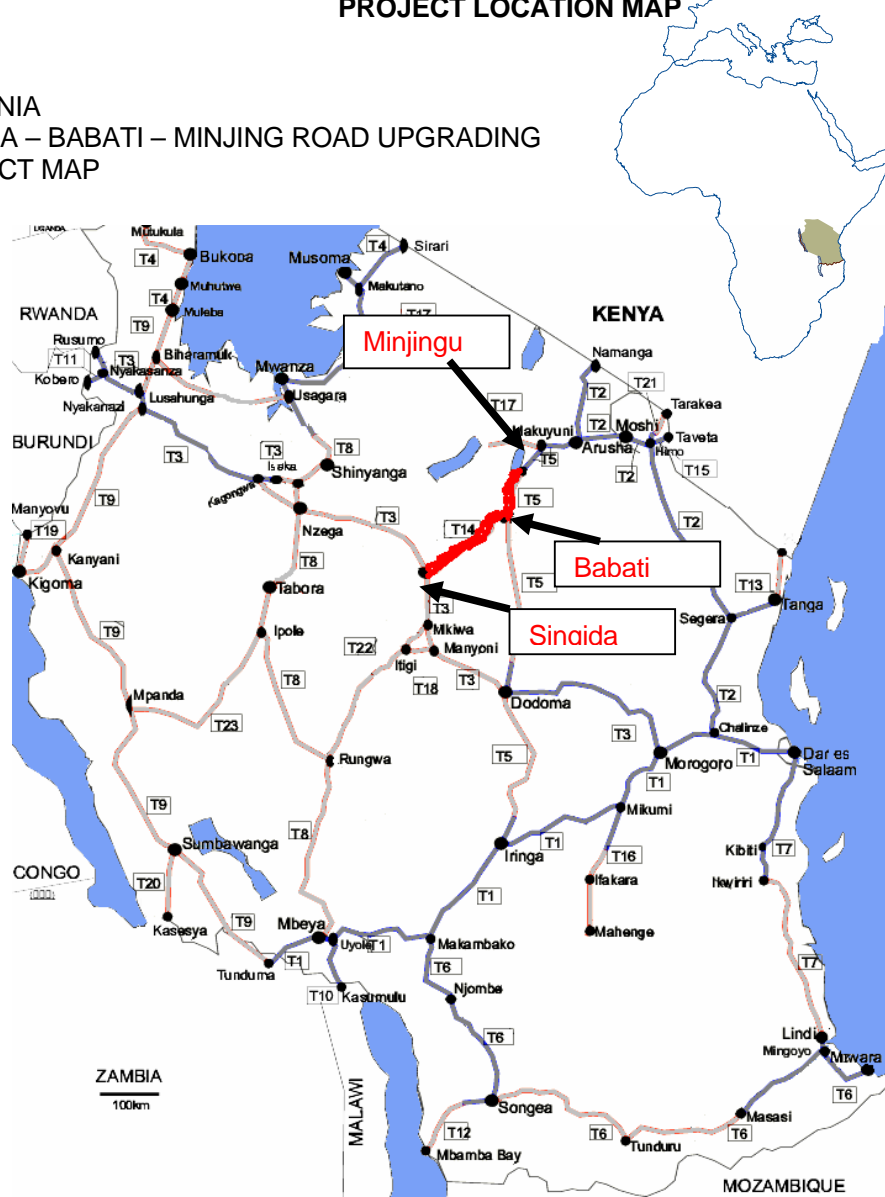
### **8.4 An Undertaking under the Loan Agreement**

The Government of Tanzania undertakes as follows (para 6.3.4):

- (i) That, at the beginning of every fiscal year, until the project is completed, starting from the first year of project implementation, the government shall budget for the required counterpart funds for the project implementation for that year.
- (ii) That the government shall transfer to a Tanzania National Roads Agency (TANROADS) bank account, every quarter, the sum of all counterpart funds necessary to cover the corresponding project cost due in accordance with the financing arrangement for the project, until the project is completed

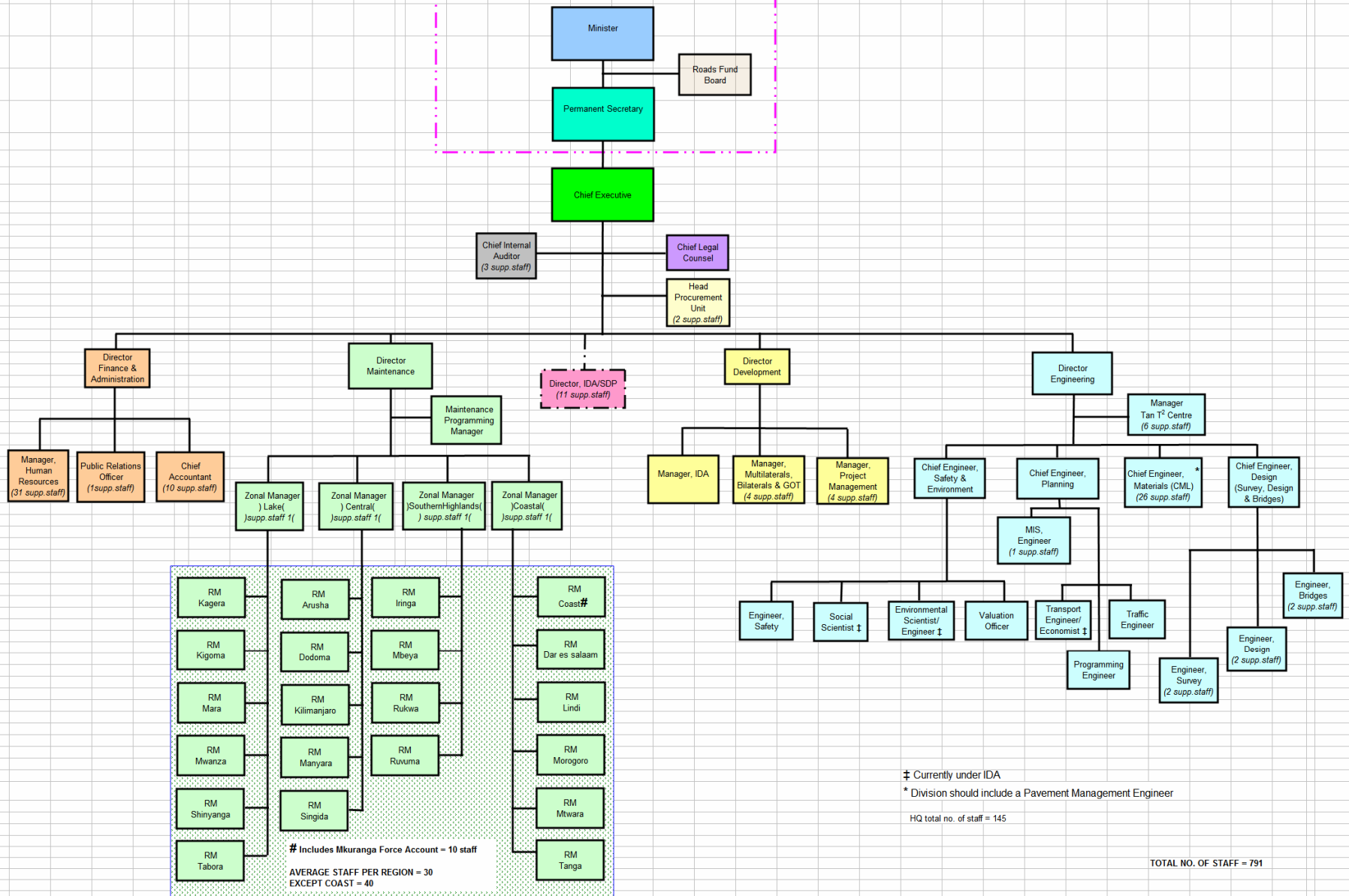
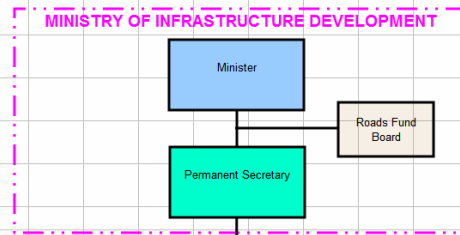
**SINGIDA – BABATI – MINJINGU DEVELOPMENT PROJECT  
PROJECT LOCATION MAP**

TANZANIA  
SINGIDA – BABATI – MINJINGU ROAD UPGRADING  
PROJECT MAP



The map on this page has been prepared by the ADB Group's staff exclusively for the convenience of the readers of the report to which it is attached. The dimensions used and the boundaries shown on the map do not imply on the part of the Group and its affiliates, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries.

MULTINATIONAL TANZANIA / KENYA  
 ARUSHA – NAMANGA – ATHI RIVER DEVELOPMENT PROJECT  
 ORGANIZATIONAL STRUCTURE  
 TANZANIA ROADS AGENCY (TANROADS)



# Includes Mkuranga Force Account = 10 staff  
 AVERAGE STAFF PER REGION = 30  
 EXCEPT COAST = 40

‡ Currently under IDA  
 \* Division should include a Pavement Management Engineer

HQ total no. of staff = 145

TOTAL NO. OF STAFF = 791



**TANZANIA**  
**SINGIDA – BABATI – MINJINGU ROAD UPGRADING PROJECT**  
**SUMMARY OF TRAFFIC AND ECONOMIC ANALYSIS**

**1 Result of Traffic Analysis for Singida – Babati – Minjingu Road**

The result of the classified traffic counts undertaken in January – February and June 2006 for the project road is as indicated in the Table A.1 below.

**Table A -1: 2006 Traffic Counts**

Link	km	Car	P-up 4WD	Light Truck	Medium Truck	Heavy Truck	Semi Trailer	Full Trailer	Mini Bus	Large Bus	Other	Total Traffic
Link 1 - Minjingu - Babati	60.5	8	124	21	72	32	19	47	18	45	0	386
Percentage of vehicle composition		2.1	32.1	5.4	18.7	8.3	4.9	12.2	4.7	11.7	0.0	100.0
Link 2 - Babati - Dareda	24.1	14	77	12	46	28	18	21	34	20	0	270
Percentage of vehicle composition		5.2	28.5	4.4	17.0	10.4	6.7	7.8	12.6	7.4	0.0	100.0
Link 3 - Dareda - Katesh	48.0	3	45	16	32	17	9	22	18	19	0	181
Percentage of vehicle composition		1.7	24.9	8.8	17.7	9.4	5.0	12.2	9.9	10.5	0.0	100.0
Link 4 - Katesh - Singida Junction	73.5	7	42	2	11	10	9	18	3	18	2	122
Percentage of vehicle composition		5.7	34.4	1.6	9.0	8.2	7.4	14.8	2.5	14.8	1.6	100.0
Link 5.1 - Singida Junction - Singida	15.0	30	101	4	21	11	5	20	15	21	2	230
Percentage of vehicle composition		13.0	43.9	1.7	9.1	4.8	2.2	8.7	6.5	9.1	0.9	100.0
Link 5.2 - Singida Bypass	2.4	151	123	3	20	8	3	3	8	1	47	367
Percentage of vehicle composition		41.1	33.5	0.8	5.5	2.2	0.8	0.8	2.2	0.3	12.8	100.0

Source: Consultancy Services for Feasibility Study Review and Detailed Engineering Design for Upgrading of Singida – Babati – Minjingu Road & ADF Appraisal Mission April/ May 2007.

The assumptions for the traffic projection (annual percentage growth) are summarized in Table A.2

**Table A.2 : Traffic Projection Assumptions (annual percentage growth)**

	2006 -2011	2012 - 2016	After 2016
Passenger Vehicles	7.6	7.4	7.5
Freight Vehicles	7.0	6.5	6.5
Per capita income growth	4.3	4.0	4.3

Source: Consultancy Services for Feasibility Study Review and Detailed Engineering Design for Upgrading of Singida – Babati – Minjingu Road & ADF Appraisal Mission April/ May 2007

Reductions in transport cost following road upgrading are likely to generate additional traffic through a combination of an increase in trips and induced economic activity. The volume of generated traffic will depend mainly on the size of the reduction of perceived transport costs. Following road upgrading, perceived reductions in travel costs will derive from:

- Reduced road roughness and faster speeds, translating into lower vehicle operating costs and potentially lower public transport fares in real terms for existing traffic flows.

- Increases in perceived travel comfort and ease on a sealed road compared with a gravel road, where conditions presently deter some segments of potential road users.
- Improvements in access conditions in wet periods, reducing both the perceived risk and de facto delays in transport.

Generated traffic of about 45 percent has been assumed considering the reduction in VOC, wet season access constraints, travel times along the project road and price elasticity of demand. The origin-destination (OD) traffic survey indicated that about 85 percent of both passenger vehicles and passengers were traveling to and from Arusha town. The survey identified an average daily movement equivalent to some 2,500-3,000 passengers, of whom 80% were in medium/large buses, 15-20% in pick-ups and four-wheel drive type vehicles. Cars, minibuses and small buses were relatively insignificant. About 95% of trucks were laden in the Arusha - Babati direction, compared with 60% in the Babati-Arusha direction, implying an overall load factor of 0.77. Major items coming from Arusha included wheat, petroleum fuel, beverages and consumer goods. Substantial movements of lime (mainly for gold mining at Geita), limestone, soap and salt from Tanga to Shinyanga or Mwanza were also captured. Movements from or through the project area to Arusha included cereals, animal feed, skins, oilseeds, cotton and empty bottles.

The project road is an essential link between the northern and western / southern zones of the country. Due to the poor condition of the project road, some traffic is using alternative, longer sealed routes via Moshi, Segera, Chalinze and Morogoro. The project road in principle offers a shorter route and a comparative road distance saving of 90 to 400 km for vehicles travelling from Arusha and key locations like Iringa, Dodoma and Mwanza, using the alternative diversion sealed routes. Thus the predicted volume of base diverted traffic, following the upgrading of the project road comprises 36 vehicles / day (13 trucks and 23 passenger vehicles); accounting between 5 and 13 percent of total projected traffic according to link.

The traffic projection, based on a central traffic growth assumption over the project life cycle is indicated in Table A-3. The detail traffic counts by sections are presented in the Project Implementation Document (PID).

## **2 Methodology and Assumptions for Economic Evaluation**

### **2.2 Methodology**

Economic analysis was done using the Highway Development and Management (HDM IV) model. The HDM IV allows modelling over the analysis period of 20 years of each of the road sections and for the whole project road corridor, the interaction between traffic volume and composition, road condition, proposed engineering interventions and their costs, road geometric characteristics and vehicle operating costs for the “with” and “with out” project scenarios. The project implementation is assumed to commence in 2009. With a construction period of 36 months, the first year of opening the road to traffic is assumed in 2012 and the analysis period goes up to 2031.

All analysis components have been inputted into the model in US Dollars at a rate of exchange prevailing during appraisal. For economic analysis, financial construction and

maintenance costs have been converted into economic costs by applying a conversion factor of 0.82, in order to exclude transfer payments within the economy and correct for distortions between international and domestic prices caused by applications of duties and taxes on traded items. The measures of project worth used are the Economic Internal Rate of Return (EIRR) and Net Present Value (NPV) at 12% discount rate, given the opportunity cost of capital in Tanzania.

**Table A-3 : Projected Annual Traffic (2006 - 2031)**

Link	km	2006	2012	2017	2031
Link 1 - Minjingu - Babati	60.5	386	852	1351	3480
Annual Growth Percentage		14.7%	11.5%	7.0%	
Link - 2 - Babati - Dareda	24.1	270	546	889	2317
Annual Growth Percentage		12.5%	12.4%	7.1%	
Link 3 - Dareda - Katesh	48	181	382	624	1617
Annual Growth Percentage		13.5%	12.6%	7.0%	
Link 4 - Katesh - Singida Junction	73.5	122	277	447	1158
Annual Growth Percentage		15.1%	12.2%	7.0%	
Link 5.1 - Singida Junction - Singida	15	230	485	795	2105
Annual Growth Percentage		13.3%	12.5%	7.2%	
Link 5.2 - Singida Bypass	2.4	367	590	864	2303
Annual Growth Percentage		9.8%	8.4%	7.2%	
Total (Overall Project Weighted Average)	223.5	232	502	805	2086

Source: Consultancy Services for Feasibility Study Review and Detailed Engineering Design for Upgrading of Singida – Babati – Minjingu Road & ADF Appraisal Mission April /May 2007.

## 2.3 Assumptions taken during the Analysis

### 2.3.1 Maintenance Strategies

Maintenance of the existing road has been intermittent. The maintenance strategies incorporated into the economic evaluation are as follows:

- “*Without project*” *do minimum*: This is essentially the historic maintenance practice strategy, comprising routine maintenance, heavy motorized grading at 12 IRI and re-gravelling with 150 mm when the existing gravel falls to 50 mm thickness.
- “*With project*” *improved road*: involves routine maintenance, patching 100 percent of potholes and 100 percent crack sealing and applying surface treatment overlay (in the case of DBST) when roughness reaches 7.0 IRI m/km and the overlay resets the roughness to 3.0.
- “*With project*” *improved road*: involves routine maintenance, patching 100 percent of potholes and 100 percent crack sealing and applying a 50 mm AC overlay when roughness reaches 7.0 IRI m/km and the overlay resets the roughness to 2.0.

### 2.3.2 Residual Values

Residual values are likely to have analytical significance and have been assumed as 20% of original capital investment; thus credited to the project in the final evaluation year of 2031.

### 2.3.3 Cost and Benefits

The costs taken into account are the Road Agency costs in the “with” and “without” project scenarios, which include both the cost of maintenance, and the investment cost of upgrading to DBST for lots 1 & 2 and AC for lot 3. Construction cost was revised in May 2007 to take into consideration the road pavement engineering design review and the 2006 average cost of oil price of US\$66 per barrel. The revised economic cost on the Singida – Babati – Minjingu road was estimated to be US\$97.0 million, based on US\$ 386,850 per km for DBST (lot 1); US\$ 378,280 per km for DBST (lot2) and US\$ 518,920 per kilometre for AC intervention (lot 3). The revised economic investment cost is made up of the base cost for civil works plus the physical contingencies, consulting services for supervision of works and for project audit. The financial contingencies, taxes and duties, which do not constitute consumption of economic resources, are not taken into account.

The benefits taken into account in the analysis include road user benefits, i.e., Vehicle Operating Cost (VOC) savings, maintenance cost savings, and time savings accruing to normal, generated and diverted traffic on the project road. Non Motorized traffic is insignificant and is not included in the analysis. Accident costs, benefits resulting from the road improvement, have not been taken into account as the profile and frequency of accidents were not available. The details on the estimation of each category of benefit and the streams of costs and benefits over the evaluation period are in the PID.

### 2.3.4 Result of Cost Benefit Analysis

#### a. The Base Case

Results of appraisal for the Base Case Cost Benefit Analysis, which comprises the central traffic forecast, indicated an EIRR of 14.9 %, NPV of USD 14.85 million and Benefit Cost Ratio (BCR) of 1.29. The EIRR is above the cut-off rate of return of 12 % opportunity cost of capital in Tanzania.

Detailed results of the Base Case measures of economic worth of intervention, in terms of EIRR and NPV are as indicated here under. The streams of each category of benefits and costs over the evaluation period for each road section and for the whole project (the detailed HDM IV run results) are in the PID.

**Table A - 4. Summary of Base Case Economic Evaluation Results**

Road Section	Km	Estimated Economic Investment Cost in million USD	NPV in mil USD	EIRR (%)
Singida - Katesh Lot 1	65.1	25.18	0.86	12.7
Katesh – Babati Lot 2	73.8	27.92	2.12	13.5
Babati - Minjingu Lot 3	84.6	43.90	11.93	16.7
Overall Project Road (223.5 km)	<b>223.5</b>	<b>97.00</b>	<b>14.85</b>	<b>14.9</b>

Source: Consultancy Services for Feasibility Study Review and Detailed Engineering Design for Upgrading of Singida – Babati – Minjingu Road & ADF Appraisal Mission April / May 2007.

b. Sensitivity Analysis

The economic analysis was calculated using the most likely forecast values in respect of traffic growth rates and other economic development scenarios. In reality however, the benefits and costs can be influenced by many factors that may change in comparison to the base case. Therefore, sensitivity analysis is normally conducted by increasing or decreasing inputs in order to measure the magnitude of changes in the economic parameters and the reliability of the results.

The base case result for the overall project road was then tested for sensitivity to changes in the basic assumptions on construction costs and on traffic levels. Three alternatives were checked, namely,

- costs were increased by 10 percent while benefits remained the same;
- benefits were reduced by 10 percent while costs remained the same;
- a 10 percent increase of costs and 10 percent decrease of benefits concurrently.

The economic parameters were calculated for all cases. The results given in the table hereunder indicates that in all the three alternatives cases, the project road is satisfactorily robust with an EIRR higher than the threshold of 12.0% opportunity cost of capital in Tanzania and NPV remaining positive. In the worst case scenario of a combined 10% increase in costs and a 10% decline in traffic, the project is still viable with an EIRR of 12.5 % and NPV of USD 3.72 million.

**Table A - 5. Sensitivity Analysis on Base Case**

Scenarios	EIRR	NPV in mil USD	B-CR
Base case	14.9	14.85	1.29
Costs Increased by 10%	13.7	13.34	1.17
Benefits Reduced by 10%	13.6	11.25	1.16
Combined 10% increased cost & 10% decreased traffic	12.5	3.72	1.05

Source: Consultancy Services for Feasibility Study Review and Detailed Engineering Design for Upgrading of Singida – Babati – Minjingu Road & ADF Appraisal Mission April / May 2007.

c. Switch Values for Investment Cost and Traffic

In addition to the sensitivity tests above, “switch values” for construction costs and benefits have been calculated as part of the economic viability analysis. The switch value for construction cost and for Road User Benefits, which would result in an EIRR of 12.0% or NPV of zero for the project, has been estimated. In this regard, it has been observed that the costs can be increased by a maximum of 29.4 percent with benefits remaining the same and the project will still be viable at 12 percent opportunity cost of capital. Similarly, benefits can be reduced by a maximum of 22.7 percent with costs remaining the same and the project will still be viable at the opportunity cost of capital.

A more than 29.4 % increase in construction costs or a drop of traffic levels (AADT) by 22.7 % indicate that the project’s economic viability would be threatened. These are critical factors to watch, though the project is more sensitive to drop in traffic levels.

These situations are most unlikely and are remote as traffic growth rate on the network has been between 3- 4 % per annum and a medium growth assumption of 6.5 to 7.5 percent has been considered. Construction costs would also not go up more than 29.4 % as project cost estimates are based on detailed engineering design study and taking into account the prevailing oil price. In addition physical contingency provision of about 10.0 % has been taken into account in the economic analysis over and above the base costs. The following table shows the results of the switch values analysis.

**Table A-6: Switch Values for Construction Costs and Benefit for EIRR of 12.0% and NPV = 0**

<b>Case</b>	<b>Switch values for Construction Cost &amp; Benefit (EIRR of 12.0%)</b>	<b>Switch Values for Construction Cost &amp; Benefit NPV = 0 USD million</b>
Base Case – EIRR	14.9%	14.85
Construction Cost	29.4%	0.0
Road User Benefits	-22.7%	0.0

Source: Consultancy Services for Feasibility Study Review and Detailed Engineering Design for Upgrading of Singida – Babati – Minjingu Road & ADF Appraisal Mission April / May 2007.

TANZANIA  
SINGIDA – BABATI – MINJINGU ROAD UPGRADING PROJECT  
ECONOMIC EVALUATION RESULTS

<b>H D M - 4</b>										
<b>Economic Analysis Summary</b>										
HIGHWAY DEVELOPMENT & MANAGEMENT										
Study Name: <b>FinalSBMDBC3BRApril30</b>										
Run Date: <b>5/6/2007</b>										
Currency: <b>US Dollar (millions)</b>										
Discount: <b>12.00%</b>										
Analysis Mode: <b>Analysis-by-Project</b>										
<b>Alternative: ALT2 - AC/DBST vs Alternative: Base Alternative</b>										
<b>Sensitivity Scenario: Base Sensitivity Scenario</b>										
		<b>Increase in Road Agency Costs</b>			<b>in MT VOC</b>	<b>Time Costs</b>	<b>Savings in</b>	<b>Reduction</b>	<b>Net</b>	<b>Net</b>
							<b>NMT Travel</b>	<b>in Accident</b>	<b>Social /</b>	<b>Economic</b>
		<b>Capital</b>	<b>Recurrent</b>	<b>Special</b>			<b>&amp; Operating</b>	<b>Costs</b>	<b>Exogenous</b>	<b>Benefits</b>
							<b>Costs</b>		<b>Benefits</b>	<b>(NPV)</b>
	Undiscounted	71.32	-4.71	0.00	389.50	22.69	0.00	0.00	0.00	345.58
	Discounted	62.64	-0.98	0.00	72.48	4.03	0.00	0.00	0.00	14.85
<b>Economic Internal Rate of Return (EIRR) = 14.9% (No. of solutions = 1)</b>										
<b>HDM-4 Version 1.3</b>										
									<b>Page -1 of 1</b>	

Road Maintenance Funding Gap of Trunk and Regional Roads (2000/01 - 2011/12)																		
in million USD																		
	FY 2000 / 01			FY 2001 / 02			FY 2002 / 03			FY 2003 / 04			FY 2004 / 05			FY 2005 / 06		
	Road	Dev't		Road	Dev't		Road	Dev't		Road	Dev't		Road	Dev't		Road	Dev't	
	Fund	Partners	Total	Fund	Partners	Total	Fund	Partners	Total	Fund	Partners	Total	Fund	Partners	Total	Fund	Partners	Total
<b>Maintenance needs</b>																		
Routine & Recurrent	28	0	28	30.1	0	30.1	33.1	0	33.1	37.4	0	37.4	36.8	0	36.8	30.1	0	30.1
periodic	72	0	72	75.3	0	75.3	79.9	0	79.9	86.7	0	86.7	91.7	0	91.7	95.6	0	95.6
Total	100	0	100	105.4	0	105.4	113	0	113	124.1	0	124	128.5	0	129	125.7	0	125.7
<b>Available Funds</b>																		
Routine & Recurrent	20.5	0	20.5	19.7	1.7	21.4	21.4	0.4	21.8	17.6	0.7	18.3	18.9	0.2	19.1	24.2	0.7	24.9
periodic	9.8	25.9	35.7	15.1	28.8	43.9	20.2	11.3	31.5	21.3	19.7	41	22.7	9.8	32.5	19	6.1	25.1
Total	30.3	25.9	56.2	34.8	30.5	65.3	41.6	11.7	53.3	38.9	20.4	59.3	41.6	10	51.6	43.2	6.8	50
<b>Maintenance Gap</b>																		
Routine & Recurrent	7.5	0	7.5	10.4	-1.7	8.7	11.7	-0.4	11.3	19.8	-0.7	19.1	17.9	-0.2	17.7	5.9	-0.7	5.2
periodic	62.2	-25.9	36.3	60.2	-28.8	31.4	59.7	-11.3	48.4	65.4	-19.7	45.7	69	-9.8	59.2	76.6	-6.1	70.5
Total	69.7	-25.9	43.8	70.6	-30.5	40.1	71.4	-11.7	59.7	85.2	-20.4	64.8	86.9	-10	76.9	82.5	-6.8	75.7
Source: TANROADS during the Appraisal Mission, May 2007																		

Road Maintenance Funding Gap of Trunk and Regional Roads (2000/01 - 2011/12)																	
in million USD																	
FY 2006 / 07			FY 2007 / 08			FY 2008 / 09			FY 2009 / 10			FY 2010 / 11			FY 2011 / 12		
Road	Devt		Road	Devt		Road	Devt		Road	Devt		Road	Devt		Road	Devt	
Fund	Partners	Total	Fund	Partners	Total	Fund	Partners	Total	Fund	Partners	Total	Fund	Partner	Total	Fund	Partners	Total
31	0	<b>31</b>	33.4	0	<b>33.4</b>	33.4	0	<b>33.4</b>	33.5	0	<b>33.5</b>	33.5	0	<b>33.5</b>	33.5	0	<b>33.5</b>
92	0	<b>92</b>	88.1	0	<b>88.1</b>	86.7	0	<b>86.7</b>	85.4	0	<b>85.4</b>	84	0	<b>84</b>	82.7	0	<b>82.7</b>
123	0	<b>123</b>	121.5	0	<b>121.5</b>	120.1	0	<b>120.1</b>	119	0	<b>119</b>	117.5	0	<b>118</b>	116.2	0	<b>116.2</b>
23.4	0	<b>23.4</b>	33.4	0	<b>33.4</b>	33.4	0	<b>33.4</b>	33.5	0	<b>33.5</b>	33.5	0	<b>33.5</b>	33.5	0	<b>33.5</b>
19.9	24.4	<b>44.3</b>	28.2	28.1	<b>56.3</b>	30	28	<b>58</b>	31.9	28.3	<b>60.2</b>	52.6	6	<b>58.6</b>	54.6	6	<b>60.6</b>
43.3	24.4	<b>67.7</b>	61.6	28.1	<b>89.7</b>	63.4	28	<b>91.4</b>	65.4	28.3	<b>93.7</b>	86.1	6	<b>92.1</b>	88.1	6	<b>94.1</b>
7.6	0	<b>7.6</b>	0	0	<b>0</b>	0	0	<b>0</b>	0	0	<b>0</b>	0	0	<b>0</b>	0	0	<b>0</b>
72.1	-24.4	<b>47.7</b>	59.9	-28.1	<b>31.8</b>	56.7	-28	<b>28.7</b>	53.5	-28.3	<b>25.2</b>	31.4	-6	<b>25.4</b>	28.1	-6	<b>22.1</b>
79.7	-24.4	<b>55.3</b>	59.9	-28.1	<b>31.8</b>	56.7	-28	<b>28.7</b>	53.5	-28.3	<b>25.2</b>	31.4	-6	<b>25.4</b>	28.1	-6	<b>22.1</b>
Source: TANROADS during the Appraisal Mission, May 2007																	

**TANZANIA**  
**SINGIDA – BABATI – MINJINGU ROAD UPGRADING PROJECT**  
**LIST OF COMPLETED AND ON GOING PROJECTS IN TANZANIA**

**TANZANIA: LIST OF ON GOING OPERATIONS AS AT 30 APRIL 2007**

SECTOR/PROJECT TITLE	FUNDS SOURCES	DATE APPROVED	AMNT (UA Mill.)	DATE SIGNED	DATE EFFECTIVE	AMNT DISB.	PER CENT DISB	DEADLINE FINAL DISB
<b>AGRICULTURE</b>								
Agric. Marketing Systems Dev. Programme	ADF	<b>18-Sep-2002</b>	15.90	12 May. 2003	15 Dec. 2003	6.63	41.70	31.12.2008
	ADF- G	<b>18-Sep-2002</b>	1.00	12 May. 2003	15 Dec. 2003	0.73	73.00	31.12.2008
District Agricultural Sector Investment Project	ADF	<b>24-Nov-2004</b>	36.00	11-Feb-2005	20-Jul-2005	1.19	3.31	30.06.2012
	ADF- G	<b>24-Nov-2004</b>	7.00	11-Feb-2005	20-Jul-2005	0.04	0.57	30.06.2012
<b>SUB-TOTAL</b>			<b>59.90</b>			<b>8.59</b>	<b>14.34</b>	
<b>TRANSPORT</b>								
Road Rehabilitation / Upg. Project	ADF	<b>03 Sep. 2001</b>	38.65	28 Sep. 2001	6-Jun-2003	14.19	36.71	31.03.09
Zanzibar Roads Upgrading Project	ADF	<b>24-Jun-2004</b>	16.22	24-Jun-2004	5-Oct-2004	4.34	26.76	31.12.07
	ADF- G	<b>24-Jun-2004</b>	0.71	24-Jun-2004	12-Dec-2005	0.14	19.72	31.12.07
<b>SUB-TOTAL</b>			<b>55.58</b>			<b>18.67</b>	<b>33.59</b>	
<b>PUBLIC UTILITIES</b>								
Dar es Salaam Water Supply	ADF	<b>17 Dec 2001</b>	36.94	29 May 2002	19 Nov. 2003	10.17	27.53	31.12.07
	ADF- G	<b>17 Dec 2001</b>	1.31	29 May 2002	19 Nov. 2003	0.57	43.51	31.12.07
Monduli Rural District Water Project	ADF- G	<b>27 Nov 2003</b>	15.51	10 Feb 2004	14Jul y 2004	7.30	47.07	31.12.08
Rural Water Supply and Sanitation Programme	ADF	<b>13 Sept 2006</b>	45.00	29 Nov 2006	14 Mar 2007	0.00	0.00	31.12.11
	ADF-G	<b>13 Sept 2006</b>	10.00	29 Nov 2006	14 Mar 2007	0.00	0.00	31.12.11
<b>SUB-TOTAL</b>			<b>108.76</b>			<b>18.04</b>	<b>16.59</b>	

<b>SOCIAL</b>								
First Health Rehabilitation Project	ADF	<b>03 Dec. 1997</b>	15.00	08 May 1998	10 Sep. 1999	11.74	78.27	30.06.07
Education II Project	ADF	<b>10 Dec. 1997</b>	20.00	08 May 1998	06 Jan. 1999	19.19	95.95	30.06.07
Small Enterprises Loan Facility	ADF	<b>11 Nov. 1998</b>	8.00	12 Apr. 1998	29 July 1999	7.66	95.75	30.06.07
Alternative Learning & Skills Dev. Project	ADF	<b>31 Oct 2000</b>	5.56	30-Jan-2001	24-Dec-2001	3.22	57.91	30.06.07
	ADF- G	<b>31 Oct 2000</b>	1.01	30-Jan-2001	24-Dec-2001	0.66	65.35	30.06.07
SAP for Vocational Ed & Training	ADF	<b>09 July 2003</b>	14.22	15-Sep-2003	16-Feb-2004	0.27	1.90	31.12.08
	ADF- G	<b>09 July 2003</b>	1.60	15-Sep-2003	16-Feb-2004	0.00	0.00	31.12.08
Support to Maternal Mortality Reduction Project	ADF	<b>11 Oct 2006</b>	40.00	29 Nov 2006	5-Mar-2007	0.00	0.00	31.12.12
<b>SUB-TOTAL</b>			<b>103.79</b>			<b>42.74</b>	<b>41.18</b>	
<b>MULTI-SECTOR</b>								
Institutional Support for Good Governance	ADF-G	13 Dec 2004	4.8	11-Feb-2005	11-Feb-2005	0.66	13.75	31.12.08
<b>SUB-TOTAL</b>			<b>4.80</b>			<b>0.66</b>	<b>13.75</b>	
<b>GRAND TOTAL</b>			<b>332.83</b>			<b>88.70</b>	<b>26.65</b>	

**TANZANIA: LIST OF COMPLETED BANK GROUP OPERATIONS AS AT 30 APRIL 2007**

SECTOR/PROJECT TITLE	FUNDS SOURCES	DATE APPROVED	AMNT (UA Mill.)	DATE SIGNED	DATE EFFECTIVE	AMNT DISB.	UNDISB. AMNT	DEADLINE FINAL DISB	STATUS
<b><u>AGRICULTURE</u></b>									
Dakawa Rice	ADF	28 Feb. 1978	4.79	04 Apr. 1979	22 May 1979	4.79	0.00	31.12.94	Completed
Dakawa Rice (Suppl.1.1)	ADB	28 Nov. 1980	4.50	10 Mar. 1981	30 June 1981	3.89	0.61	31.12.95	Comp. Bal. cancelled
Dakawa Rice (Suppl.1.1)	ADF	28 Nov. 1980	3.13	10 Mar. 1981	30 June 1981	3.13	0.00	31.12.96	Completed
Zanzibar Rainfed Rice Development	ADF	18 Dec. 1980	7.37	10 Mar. 1981	24 Apr. 1982	7.28	0.09	31.12.97	Comp. Bal. cancelled
Kapunga & Madibira Rice Study	NTF	10 Nov. 1981	1.20	08 Jan. 1982	03 Dec. 1983	0.98	0.22	31.12.94	Comp. Bal. cancelled
Morogoro Village Irrigation Study	ADF	08 Apr. 1982	0.49	04 Feb. 1983	00 May 1984	0.23	0.26	31.12.95	Comp. Bal. cancelled
Small holder Rice Irrigation	ADF	08 Apr. 1982	7.37	04 Feb. 1983	25 June 1984	6.18	1.19	31.12.97	Comp. Bal. cancelled
Dakawa Rice (Supp.II)	ADF	14 Apr. 1983	4.64	11 May 1983	11 Dec. 1984	3.46	1.18	30.06.94	Comp. Bal. cancelled
Dodoma Livestock Development Study	TAF	12 Dec. 1985	0.51	07 May 1986	23 Dec. 1986	0.40	0.11	31.12.94	Comp. Bal. cancelled
Kapunga Rice Irrigation	ADF	23 Dec. 1987	40.84	07 May 1988	13 Sep. 1988	40.84	0.00	31.12.97	Completed
Kapunga Rice Irrigation	NTF	14 Dec. 1987	6.44	07 May 1988	13 Sep. 1988	6.44	0.00	31.12.98	Completed
National Agric . & Livestock Exten. Rehab.	ADF	23 Aug. 1988	6.52	05 July 1989	03 Apr. 1990	5.88	0.64	31.12.99	Comp. Bal. cancelled
National Agric . & Livestock Research Project.	ADF	23 Aug. 1988	6.17	05 July 1989	11 Jan.1990	6.01	0.17	31.12.01	Comp. Bal. cancelled
Dakawa Integrated Irr. (Phase II) (Study )	TAF	11 June 1990	0.49	04 Feb. 1991	01 Sep. 1994	0.46	0.03	31.12.97	Comp. Bal. cancelled

Kagera Sugar Estate Study	TAF	10 July 1993	0.61	24 Nov. 1993	14 Feb. 1994	0.43	0.18	30.06.97	Completed
Madibira Irrigation	ADF	03 Sep. 1993	21.92	24 Nov. 1993	08 May 1995	21.55	0.37	31.07.98	Comp. Bal. cancelled
Livestock Marketing	ADF	27 Jan 1992	9.21	01 Dec. 1992	12 July 1994	8.56	0.65	31.12.05	Comp. Bal. cancelled
Special Programme for Food Security	TAF	17 May 2000	0.77	30 Jan. 2001	11-May-2001	0.77	0.00	31.08.03	Completed
Selous Game Reserve	ADF	27 Nov. 1997	5.91	8-May-98	16 Nov. 1998	5.91	0.00	31.12.05	Completed
<b>SUB-TOTAL</b>			<b>132.88</b>			<b>127.19</b>	<b>5.70</b>		
<b>TRANSPORT</b>									
Mogoyo-Masasi Road Construction	ADB	21 Nov. 1974	4.00	15 Jan. 1975	16 May. 1975	4.00	0.00	31.12.97	Completed
Ten Bridges	ADF	25 Mar. 1975	4.61	20 June 1975	01 Oct. 1975	4.61	0.00	30.06.83	Completed
Rusumo-Lusahunga Road Construction	ADF	21 Feb. 1977	7.37	28 Mar. 1977	21 Jan. 1979	7.37	0.00	31.12.85	Completed
Ten Bridges (Supp.1.1)	ADF	14 Apr. 1983	3.64	11 May 1983	18 Jul. 1983	3.51	0.13	31.12.90	Compl. Bal. Cancelled
Rusumo-Lusahunga Road Construction (Supp II)	ADF	14 Apr. 1983	9.99	11 May 1983	22 Jun. 1983	9.99	0	31.12.85	Completed
TANZAM Highway Rehab.	ADF	15 Feb. 1987	17.68	30 Nov. 1987	03 Mar. 1989	17.67	0.01	31.12.95	Compl. Bal. Cancelled
Road Rehabilitation Project Study	TAF	11 June 1990	2.39	04 Feb. 1991	30 Jul. 1992	1.20	1.19	30.06.97	Compl. Bal. Cancelled
Road Rehabilitation Project	ADF	11 June 1990	32.88	04 Feb. 1991	17 June 1993	20.30	12.58	31.12.97	Compl. Bal. Cancelled
Three Road Studies	TAF	29 Oct. 1992	3.68	01 Dec. 1992	30 Jul. 1994	2.19	1.49	31.12.97	Compl. Bal. Cancelled
Tanzania Railway Corporation Rehab.	ADF	21 June 1992	21.18	26 Feb. 1993	16 June 1994	14.95	6.23	31.12.99	Compl. Bal. Cancelled
Airport Studies	TAF	31 Sep. 1993	1.47	24 Nov. 1993	14 Sep. 1994	1.05	0.42	31.12.97	Compl. Bal. Cancelled
Zanzibar Road Studies	ADF	09 Sep. 1998	1.06	20 Nov.1998	19 Sep. 2000	0.30	0.76	31.03.03	Compl. Bal.

									Cancelled
Mutukula-Muhutwe Road Project	ADF	08 Oct. 1997	20.00	17 Nov. 1997	27-Jan-1999	14.91	5.09	31.03.05	Compl. Bal. Cancelled
El Nino Road Rehabilitation	ADF	16 Dec 1998	9.75	5-Jan-1999	1-Oct-2000	4.37	5.38	30.06.05	Compl. Bal. Cancelled
Shelui-Nzega Road Project	ADF	17 June 1999	24.00	19 Nov. 1999	7-Mar-2000	13.82	10.18	29.11.05	Compl. Bal. Cancelled
<b>SUB-TOTAL</b>			<b>163.70</b>			<b>120.24</b>	<b>43.46</b>		
<b><u>INDUSTRY</u></b>									
Oil pipeline and Tankage Facilities	ADB	25 May 1971	3.00	25 May 1972	30 May. 1972	2.66	0.34	31.10.77	Compl. Bal. Cancelled
First Line of Credit to TIB	ADB	15 May 1973	1.50	21 June 1973	23 Oct. 1973	1.50	0.00	30.06.77	Completed
Second Line of Credit to TIB	ADB	23 Feb. 1977	3.00	24 June 1977	30 Sep. 1978	2.88	0.12	31.12.88	Compl. Bal. Cancelled
Third Line of Credit to TIB	ADF	09 June 1981	5.00	06 Nov. 1981	17 Aug. 1982	4.82	0.18	30.06.94	Compl. Bal. Cancelled
Caustic Soda Study	TAF	20 Nov. 1990	0.70	04 Feb. 1991	30 Jul. 1992	0.60	0.10	31.12.96	Compl. Bal. Cancelled
EPZ Study	TAF	26 Feb. 1992	0.74	14 May 1992	13 Dec. 1993	0.48	0.26	31.12.97	Compl. Bal. Cancelled
<b>SUB-TOTAL</b>			<b>13.94</b>			<b>12.94</b>	<b>1.00</b>		
<b><u>PUBLIC UTILITIES</u></b>									
Shinyanga-Lindi Water Supply	ADF	24 Aug. 1976	4.61	25 Nov. 1976	15 Dec. 1978	4.61	0.00	31.12.84	Completed
Kidatu-Mufindi Power Transmission	ADB	27 Nov. 1979	8.00	01 Feb. 1980	13 Dec. 1980	7.94	0.06	30.06.94	Compl. Bal. Cancelled
Dodoma-Water Drainage-Sewerage 1	ADB	18 Dec. 1979	7.00	01 Feb. 1980	21 Feb. 1980	7.00	0.00	31.12.84	Completed
Dodoma-Water Drainage-Sewerage 11	ADB	27 Aug. 1980	10.00	10 Mar. 1981	30 Sep.1981	9.30	0.70	30.06.94	Compl. Bal. Cancelled
Rural Electrification Newala-Massisi	ADF	24 June 1982	11.97	04 Feb. 1983	01 Oct. 1984	11.77	0.20	30.06.94	Compl. Bal. Cancelled
Shinyanga-Lindi Water Supply (Supp.1.1)	ADF	14 Apr. 1983	2.64	11 May 1983	16 Mar. 1984	2.64	0.00	30.06.84	Completed

Mwamapuli-Buleny Water Sup. Study	ADF	27 Nov. 1986	0.55	11 Dec. 1986	06 Nov. 1989	0.55	0.00	31.12.91	Completed
Zanzibar-Pemba Water Supply Study	ADF	27 Nov. 1986	0.64	11 Dec. 1986	11 May 1988	0.64	0.00	31.12.94	Completed
Kagera Basin Telecoms	ADF	22 Dec. 1986	4.19	03 May 1987	13 Sep. 1988	3.45	0.74	31.03.99	Compl. Bal. Cancelled
Pangani Falls Hydro-Electrc. Study	TAF	17 Sep. 1987	1.50	30 Nov. 1987	21 Feb. 1990	0.00	1.50	31.12.90	Loan cancelled
Zanzibar-Pemba Power System	ADF	19 Jan. 1989	13.22	06 Jul. 1989	12 Jun. 1990	11.91	1.31	30.06.00	Completed
Zanzibar Rural Water Supply	ADF	16 Dec. 1991	7.83	01 Dec. 1992	22 Mar. 1994	3.29	4.54	31.12.97	Loan cancelled
Telecommunications II	ADF	24 June 1992	18.42	01 Dec. 1992	13 Oct. 1993	18.39	0.03	31.12.97	Compl. Bal. Cancelled
Telecommunications II	ADB	24 June 1992	10.00	01 Dec. 1992	13 Oct. 1993	9.73	0.27	31.12.97	Compl. Bal. Cancelled
Dar es Salaam Water Supply Study	TAF	21 June 1993	0.69	23 July 1993	16 June 1994	0.52	0.17	30.06.97	Compl. Bal. Cancelled
Mchuchuma Colliery Thermal Power Study	TAF	21 Oct. 1993	2.50	13 June 1994	13 June 1994	1.75	0.75	31.12.97	Compl. Bal. Cancelled
Electricity IV	ADF	16 Dec. 1991	23.03	01 Dec. 1992	17 Aug. 1994	21.01	2.02	31.12.04	Compl. Bal. Cancelled
Electricity IV	NTF	16 Dec. 1991	6.00	01 Dec. 1992	17 Aug. 1994	4.50	1.50	31.12.04	Compl. Bal. Cancelled
Monduli Rural District Water Supply Study	TAF	16 July 1997	0.78	17 Nov. 1997	13 Jun. 2000	0.75	0.03	30.09.02	Completed
Rural Electrification Master Plan	ADF- G	28 June 2001	1.87	28 Sep. 2001	21 Oct. 2003	1.87	0.00	31.12.05	Completed
<b>SUB-TOTAL</b>			<b>135.44</b>			<b>121.62</b>	<b>13.82</b>		
<b>SOCIAL</b>									
Technical and Vocational Training	ADF	19 Dec. 1978	6.45	16 May 1979	28 July 80	5.37	1.08	31.12.96	Compl. Bal. Cancelled
Muhimbili Teaching Hospital Study	TAF	23 Mar. 1989	0.59	30 May 1989	23 May 1980	0.47	0.12	31.12.97	Compl. Bal. Cancelled
Employment & Technical Education Studies	TAF	23 June 1993	0.65	23 July 1993	16 May 1995	0.63	0.02	31.03.97	Compl. Bal. Cancelled

Zanzibar Health Dev. Requirement Studies	TAF	03 Dec. 1997	0.91	35923.00	24 Sep. 1999	0.9	0.01	30.06.04	Completed
Three Regions Health Studies	ADF-G	14 July 1999	1.75	19 Nov. 1999	06 Apr. 2001	1.20	0.55	30.04.06	Compl. Bal. Cancelled
<b>SUB-TOTAL</b>			<b>10.35</b>			<b>8.57</b>	<b>1.78</b>		
<b>MULTI-SECTOR (POLICY BASED)</b>									
Sector Rehabilitation (Ag and Tr)	ADF	26 Oct. 1987	28.55	29 Dec. 1987	29 Dec. 1987	26.42	2.13	30.06.94	Compl. Bal. Cancelled
Industrial Sector Adjustment	ADF	17 Sep. 1990	27.63	01 July 1991	06 Aug. 1991	27.63	0.00	30.06.94	Completed
Financial Sector Adjustment Programme	ADF	25 May 1992	27.63	01 Dec. 1992	16 May 1993	27.63	0.17	31.12.95	Compl. Bal. Cancelled
Structural Adjustment Loan	ADF	05 Nov. 1997	45.00	17 Nov. 1997	24 Dec. 1997	45.00	0.00	31.12.99	Completed
SFM Loan I	ADF	04 Dec. 1999	0.62	05 Jan. 1999	27 Aug. 1999	0.62	0.00	30.06.01	Completed
SFM Loan II	ADF	14 July 1999	0.55	19 Nov. 1999	27 Aug. 1999	0.55	0.00	30.06.00	Completed
Structural Adjustment Loan II	ADF	03 Sep. 2001	40.00	28 Sep. 2001	08 Dec. .2001	40.00	0.00	30.06.04	Completed
Poverty Reduction Support Loan	ADF	27 Oct. 2004	50.00	09 Dec. 2004	12-May-05	50.00	0.00	31.12.2005	Completed
<b>SUB-TOTAL</b>			<b>219.98</b>			<b>217.85</b>	<b>2.30</b>		
<b>GRAND TOTAL</b>			<b>676.29</b>			<b>608.41</b>	<b>68.06</b>		

**ANNEX 7**

**SINGIDA – BABATI – MINJINGU ROAD UPGRADING PROJECT**  
**PROVISIONAL LIST OF GOODS AND SERVICES**  
 (Contingencies costs have been built in each cost component)

Components	Project costs (in millions of TZS)			Project Costs (in millions of UA)			Co- Financiers Contribution in UA millions		
	Foreign Exchange	Local Costs	Total Costs	Foreign Exchange	Local Costs	Total Costs	ADF	GOT	Total
<b>A. Civil Works</b>									
i. Lot 1 - Singida - Katesh	30,140	8,419	38,559	15.85	4.43	20.28	15.60	4.68	20.28
ii. Lot 2 - Katesh - Dareda	33,408	9,332	42,740	17.57	4.91	22.48	17.30	5.19	22.48
iii. Lot 3 - Dareda - Minjingu	52,349	14,623	66,972	27.54	7.69	35.23	27.10	8.13	35.23
Sub total	115,896	32,374	148,270	60.97	17.03	77.99	60.00	17.99	77.99
<b>B. Consultancy Services</b>									
i. Supervision Consultancy for Lot 1	2,087	230	2,316	1.10	0.12	1.22	0	1.22	1.22
ii. Supervision Consultancy for Lot 2	2,313	255	2,567	1.22	0.13	1.35	0	1.35	1.35
iii. Supervision Consultancy for Lot 3	3,624	399	4,023	1.91	0.21	2.12	0	2.12	2.12
iv. Audit consultancy services	71	163	234	0.04	0.09	0.12	0	0.12	0.12
Sub total	8,094	1,046	9,140	4.26	0.55	4.81	-	4.81	4.81
<b>C. Others</b>									
i. Compensation costs	-	697	697	-	0.37	0.37		0.37	0.37
<b>Total Project Cost</b>	<b>123,991</b>	<b>34,117</b>	<b>158,108</b>	<b>65.22</b>	<b>17.95</b>	<b>83.17</b>	<b>60.00</b>	<b>23.17</b>	<b>83.17</b>

**ANNEX 8**

**SINGIDA – BABATI – MINJINGU ROAD UPGRADING PROJECT**  
**LIST OF ANNEXES IN PROJECT IMPLEMENTATION DOCUMENT (PID)**

- 1 FEASIBILITY AND PRELIMINARY ENGINEERING DESIGN OF SINGIDA-BABATI – MINJINGU ROAD UPGRADING PROJECT
- 2 DETAILED ENGINEERING DESIGN OF SINGIDA-BABATI – MINJINGU ROAD UPGRADING PROJECT
- 3 YEAR TRANSPORT SECTOR INVESTMENT PROGRAM (TSIP) PHASE 1 – TANZANIA
- 4 ECONOMIC REPORT OF SINGIDA-BABATI – MINJINGU ROAD UPGRADING PROJECT
- 5 ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENTS OF SINGIDA-BABATI - MINJINGU ROAD UPGRADING PROJECT
- 6 TRANSPORT, COMMUNICATIONS AND METROLOGY SECTOR STATISTICS AND INFORMATION, MAY 2006