PROJECT FORMULATION STUDY REPORT
FOR
MASASI – TUNDURU ROAD
UPGRADING PROJECT
IN
THE UNITED REPUBLIC OF TANZANIA

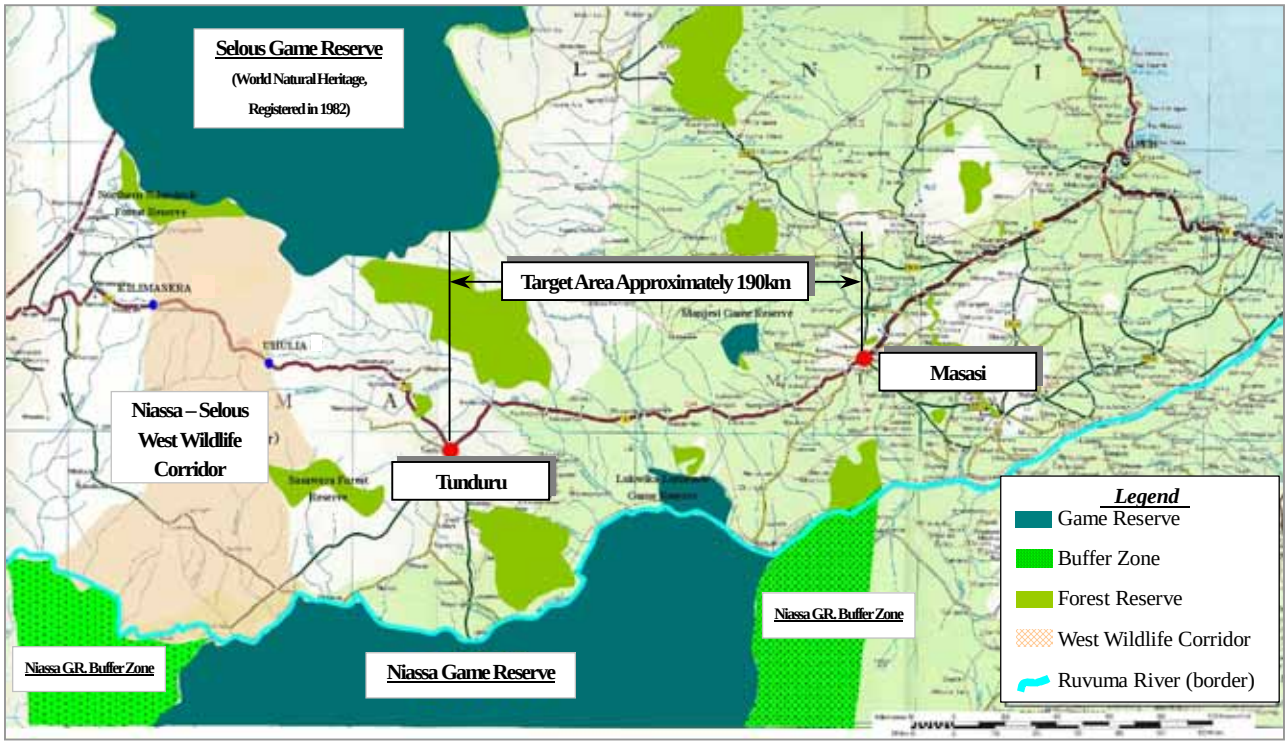
SEPTEMBER 2005

JAPAN INTERNATIONAL COOPERATION AGENCY

Map No. 3667 Rev. 5 UNITED NATIONS
January 2005

Department of Peacekeeping Operations
Cartographic Section

Location Map



Project Site Map

Photographs in the site

(1) Mtwara Port to Masasi

	Place	Mtwara port
	Date	2005.7.29
	Caption	The starting point of Mtwara development corridor
	Place	Bus station in Masasi
	Date	2005.7.30
	Caption	Bus fare of Masasi to Tunduru is 6,500TSH. This fare is 2.5 times by comparison Dar es Slaam to Morogoro even same distance.
	Place	St. 3km from Masasi
	Date	2005.8.4
	Caption	Bicycle and pedestrian are using the road in Masasi.

(2) Masasi - Tunduru

	Place	St. 80km from Masasi
	Date	2005.7.29
	Caption	Although width is about 6meter, available road width for vehicles is narrower by wheel ruts.
	Place	St.100km from Masasi
	Date	2005.8.5
	Caption	Driving speed is dropped less than 20km/PH by undulation. Only 4WD vehicle is able to go through marshy period.
	Place	St.125km from Masasi
	Date	2005.8.4
	Caption	Rocky mountains are located along the road. Songanbere Mt.

(3) Masasi - Tunduru

	Place	St.150km from Masasi
	Date	2005.8.5
	Caption	Spreading dust by driving vehicle is covering sight of drivers and pedestrians, and such a phenomenon is one problem of traffic safety.
	Place	St.160km from Masasi
	Date	2005.7.30
	Caption	Muhuwesi River which has flowing water all through the year. River water level is exceeding bridge beam in the flood season. A gem stone private company posses mineral right on the Muhuwesi River.
	Place	Tunduru District Office
	Date	2005.8.5
	Caption	Public consultation was held in Tunduru and Masasi District Office with over 30 Village Executive Officer.

ABBREVIATION LIST

＜Organization and Project name＞

AfDB	African Development Bank
BADEA	Arab Bank for Economic Development in Africa
DANIDA	Danish International Development Agency
EIA	Environmental Impact Assessment
EIS	Environment Impact Statement
EU	European Union
FR	Forest Reserve
GR	Game Reserve
GTZ	Gesellschaft fur Technische Zusammenarbeit
IEE	Initial Environmental Examination
IRP	Integrated Road Program
MIT	Ministry of Industry and Trade
MNRT	Ministry of Natural Resources and Tourism
MOW	Ministry of Works
MtDC	Mtwara Development Corridor
NDC	National Development Corporation
NEPAD	New Partnership Africa's Development
NEMC	National Environmental Management Council
Pre-EIA	Preliminary Environmental Impact Assessment
TANROADS	Tanzania National Roads Agency
RAP	Resettlement Action Plan
ROW	Right of Way
SDI	Spatial Development Initiatives
URRP	Urgent Road Rehabilitation Program
WMA	Wildlife Management Area
WWF	World Wildlife Fund
10YRSDP	10 Years Road Sector Development Program

＜Others＞

GDP	Gross Domestic Product
GNI	Gross National Income
GPS	Global Positioning System
HIV	Human Immunodeficiency Virus
NSGRP	National Strategic for Growth and Reduction Poverty

August, 2005
1USD = 109.3JPY
1TZS = 0.1JPY
USD: United States Dollar
TZS: Tanzanian Shilling
JPY: Japanese Yen

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1 Study Summary

1-1 Study Objectives

This study analyzes the possibility of a future assistance provided by Japan to the "Masasi-Tunduru Road Upgrading Project, which is based on the corresponding request formulated by the Government of Tanzania.

(See project site map in Fig-1)

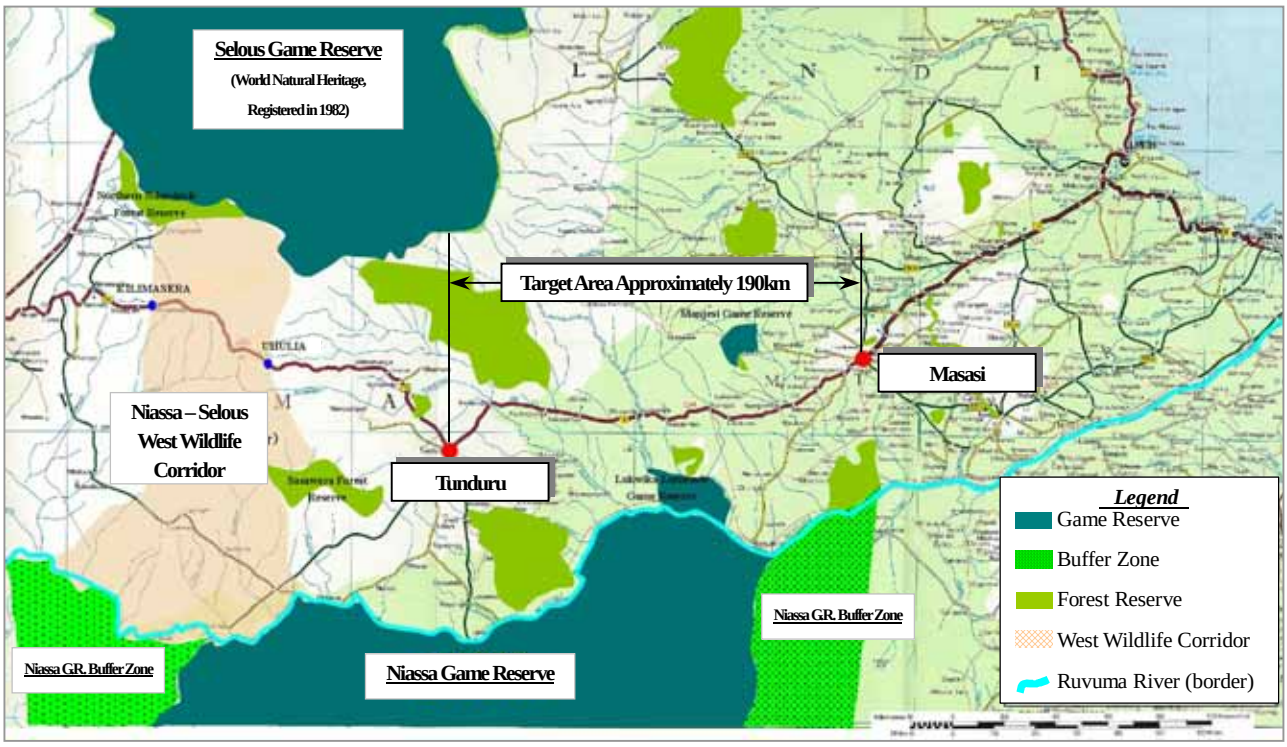


Fig-1 Project Site Map

1-2 Research Group Composition and Schedule

The composition of the corresponding Research Group is as follows:

Table -1 Research Group Members' List

No.	Group Members	Responsibility Area	Affiliation	Stay period (Arrival-Departure)
1	Naofumi HASHIMOTO	Team Leader	Ministry of Foreign Affairs	July 17 - 21
2	Hiroshi TOMITA	Grant Aid	Ministry of Foreign Affairs	July 17 - 22
3	Kaori SHIOTSU	Cooperation Policy	Ministry of Foreign Affairs	July 17 - 23
4	Eita NARITA	Cooperation Planning	Japan International Cooperation Agency,	July 17 - 26
5	Hisashi MUTO	Road Planner I	Japan Engineering Consultants Co., Ltd.	July 17 – August 28
6	Hironori KUROKI	Natural Environmental Specialist	Japan Engineering Consultants Co., Ltd.	July 17 – August 28
7	Tatsumi TOKUNAGA	Social Environmental Specialist /Road Planner II	Japan Engineering Consultants Co., Ltd.	July 17 – August 28

2 Field Survey Results

A summary pertaining to the field survey results based on the operational plan may be outlined as follows:

2-1 Project positioning

(1) Project positioning in relation to the planning activities stated above.

1) National Development Policy

- The National Strategy for Growth and Reduction of Poverty（NSGRP）is Tanzania's National Development Policy, as formulated in June 2005. In connection with this policy, the expectations related to the economic improvement to be expected in the production and social service sectors are considerable. It is to be stated that needs for a fundamental transformation, in quantitative as well as qualitative aspects, concerning transportation and other basic infrastructures, are increasing. In addition to this, very positive prospects in relation with the development of the road network and its positive influence on the land cargo transportation along the Mtwara development corridor area, as well as the increase in the affluence of tourism in the region forecasted; are expected.
- Furthermore, the Mtwara corridor is positioned as one of representing a target area of the NSGRP and a part of the "Strategic Framework Composition Plan." (See Chapter 4.2.3 "Commitment to Macroeconomic and Structural Reforms, Table 4.1. On-going Structural and Institutional Reforms). This framework in place aims at increasing the understanding on how to alleviate poverty by adopting a comprehensive, civilian-led approach that would eventually be able to fill the gap of regional disparities.

2) Road Sector Planning

- Road planning activities in Tanzania were started on a national level with the formulation in 2001 of the "10-Year Road Sector Development Program" (10Y-RSDP). At the NSGRP, the road sector is positioned as a priority area due to its potential contribution to the general economic development in the country.
- The 10Y-RSDP sets up a planning model where, in all provinces, the trunk roads and regional roads are linked. This takes into consideration the development and maintenance control activities of all trunk and regional roads. On a structural point of view, the whole network is distributed into 9 varieties of road corridors in the country. The planning model itself is structured in 5 years in such a way that its first stage began in 2001 and its second phase will start in 2006. Therefore, its first phase is still in progress. Corrections in the current planning and definition of the 5-year long second phase are being currently specified.
- The positioning within the 10Y-RSDP of this project, in addition to linking the principal harbor city in the south, Mtwara and Malawi along Mbamba bay, is represented by the trunk road integrated as a part of the southern development corridor and located along the Tan-Zam corridor Road No. 1 between Songea to Makambanko and Road No. 6 connecting the vicinity of Masasi with the Mozambique border through the Unity Bridge.

  (See Road Rehabilitation Plan Map based on the 10Y-RSDP in Fig-2)

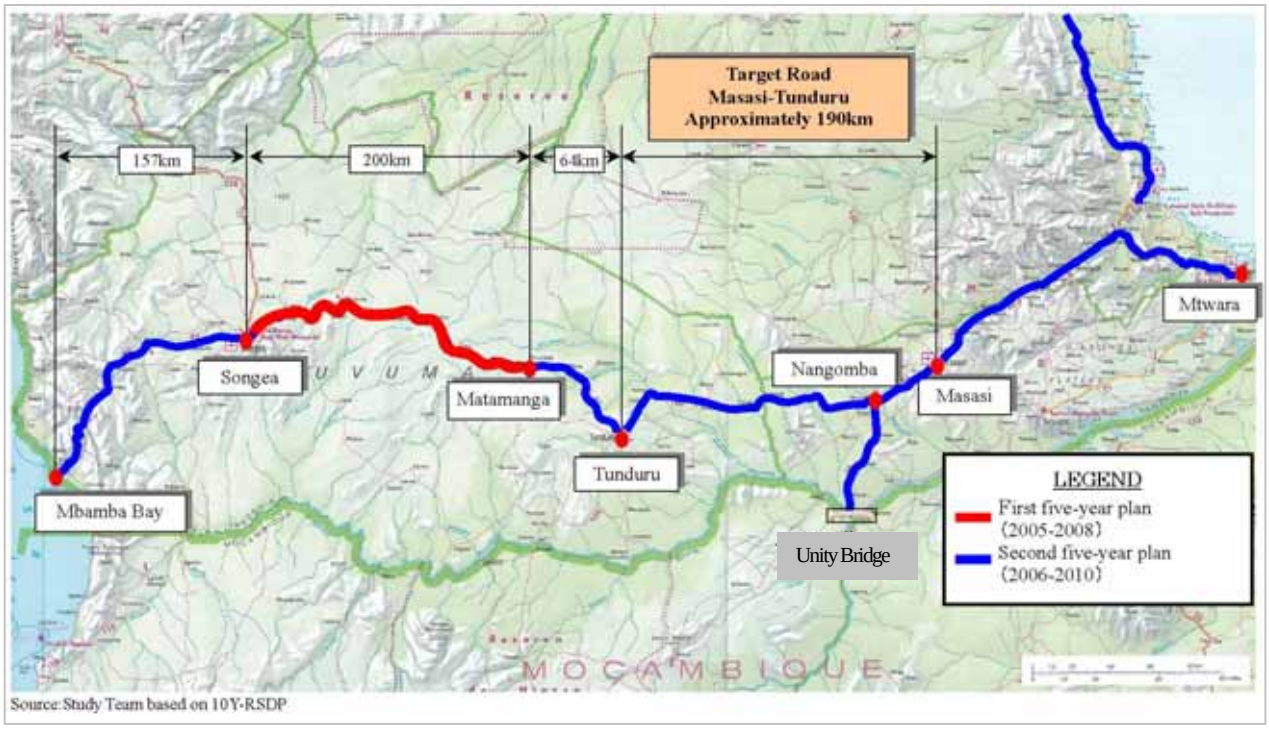


Fig-2 Road Rehabilitation Plan Map based on 10Y-RSDP

- In regards with the 5-year long first phase of planning, the start of activities pertaining to the paving with asphalt of the 200-kilometer long area from Songea to Tunduru arriving up to Matemanga will expand from the second half of this year to be concluded by 2008. Furthermore, in relation with the remaining unpaved area, the planning scheme to be put in place includes the implementation from 2006 of the 5-year long second phase of the paving with asphalt of all trunk roads.

  (See 9 corridors based on 10Y-RSDP in Fig-3)

(2) Mtwara Development Corridor's Summary and Progress

1) Mtwara Development Corridor's Summary

- The Mtwara Development Corridor (MtDC) represents an area included by the South African Development Council (SADC) in its international corridor network development planning activities, and constitutes the fundamental route connecting the harbor of Mtwara with Malawi through the Lake Nyasa. MtDC, by facilitating the trade activities among bordering countries, Malawi, Zambia and Mozambique with the harbor of Mtwara, has as its main purpose the expansion of development activities through all the southern part of Tanzania. In addition to this, along the said development corridor area, and thanks to investments made by the private sector, planning activities pertaining to the exploitation of geo-thermal energy, mineral resources development, as well as agriculture and farming development (cashew nut, etc…) are expected to be

Fig-3 9 corridors based on the 10Y-RSDP

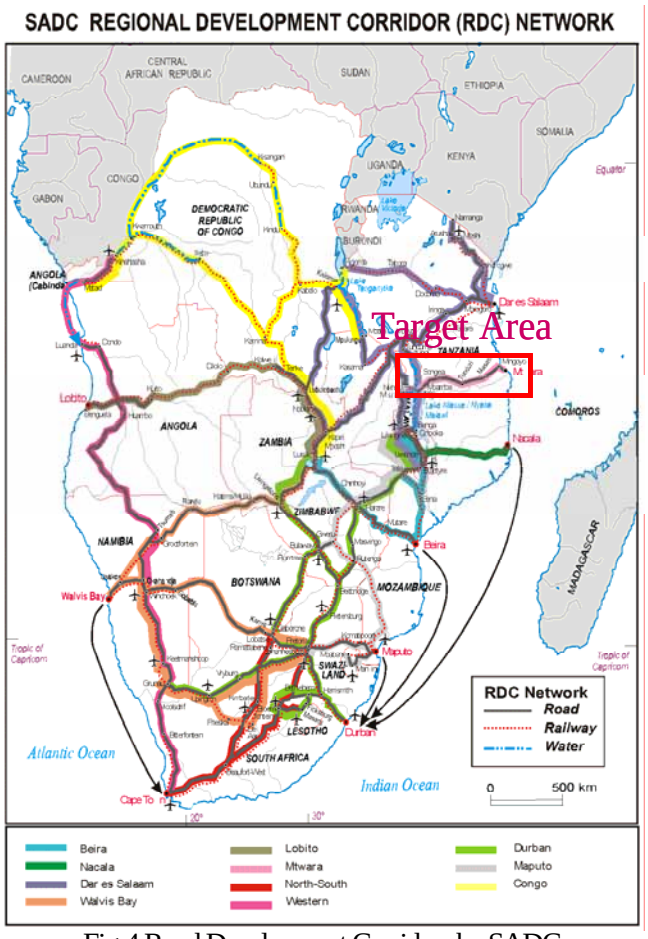


Fig-4 Road Development Corridors by SADC

expanded. Together with this, the new road network is to become a fundamental tool for the distribution of goods through the whole region.

(See Road Development Corridor by SADC in Fig-4)

- In 1997, in comparison with other regions of Tanzania, due to the fact of having been the front-line base during the liberation struggle with South Africa, the region has suffered from a historical under development path. At the same time, as the southern region is blessed with numerous natural resources, its development potential is considerable (in addition to the states located further in the south such as Lindi, Mtwara, Ruvuma, Iringa, Mbeya, or Rukwa, and the southern bank of the Rufiji River, that is to say, Morogoro and the neighboring barrier beach). In relation with its infrastructure development, and thanks to the attraction of investments undertaken by civilians, the four countries member of the SADC, Mozambique, Zambia, Tanzania and Malawi are to cooperate together in implementing a joint development plan for the region. The agreement achieved can be summarized in the following three points:
  ① To link the development of the neighboring areas of the countries mentioned above, together with the intensification of economic exchanges among the common borders.
  ② To take advantage of the Mtwara harbor as the regional export base for all neighboring countries.
  ③ In Tanzania, the implementing agency of MtDC is to be considered the National Development Corporation (NDC).

2) Progress in the Mtwara Development Planning

- The MtDC project is constituted by 16 initiatives related to economic infrastructures (Economic Service Infrastructure Projects), and other 8 economic development programs (Economic Development Generators). Information pertaining to this may be found on the NDC website (http://www.ndctz.com/MtDC.htm) as well as in other documents released by the NDC such as "Project Profiles, 1998" or "Progress and Status, 2005."

  (See 16 economic services infrastructure projects in Fig-5)

- Currently, the main activities implemented by the MtDC can be summarized as follows:
  ① Development of mineral resources (Mchuchuma - Katewaka Coal Mine (Colliery)):
  Siemens, the German private company, in collaboration with government entities, is planning to sponsor the construction until 2007 of an electric power plant with a capacity of 400MW.
  ② Exploitation of other mineral resources:
  In relation to the commercial use of other mineral resources such as gold, gemstones, uranium or base metals, there are already in place different private-related investment activities in place. In total, they amount today for over USD 10 million. Expectations in the development of this sector are also very high.

③ Harbor development (Mtwara port expansion and modernization):

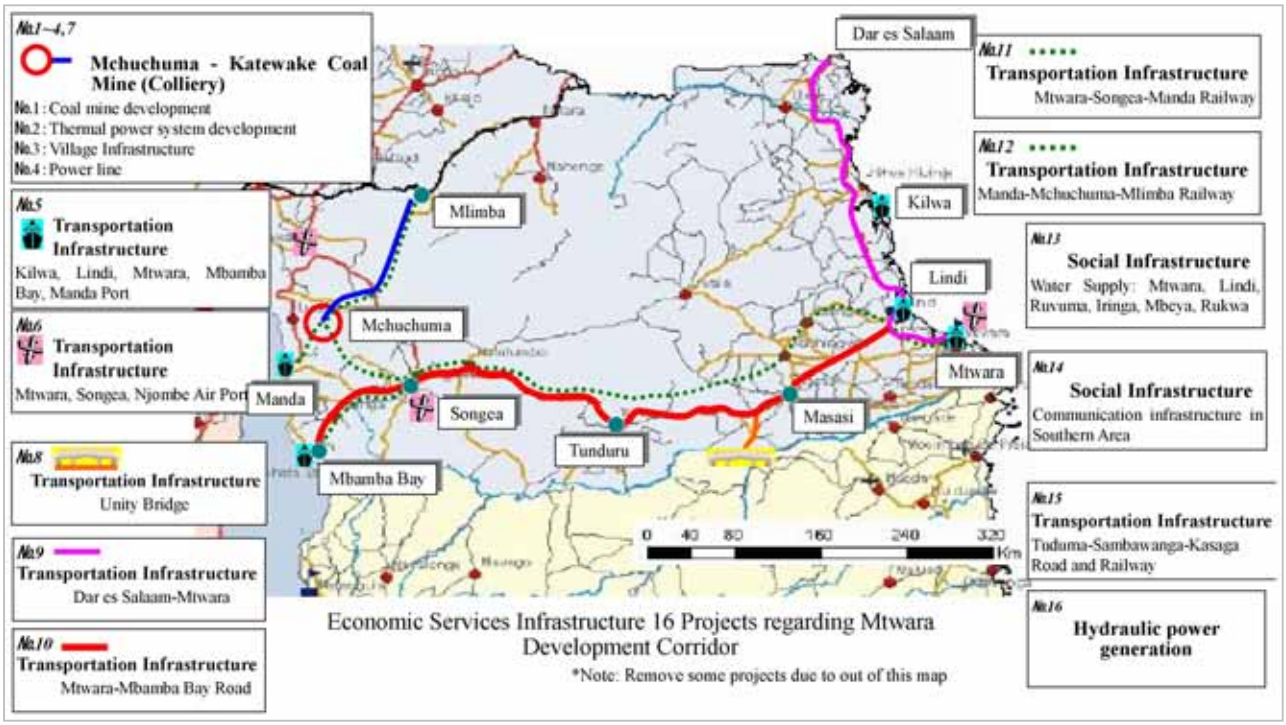
The expansion of the port of Mtwara has been concluded by the NDC in its implementation design phase. Its required F/S totaling USD 290,000 dollar is being currently sought.

④ Road and bridge equipment (Unity Bridge):

In January 2005, the Tanzania and Mozambique governments signed a joint document for the financing with own funds of the required construction activities from this October and during a time-span of 36 months, starting with the selection of contractors and engineers and continuing with the implementation of actual works from 2006. These activities are developing at a good path.

⑤ Equipment of actual service at Lake Nyasa (Heavy Capacity Ferry Linking Nkhata Bay and Mbamba bay):

In relation to the required F/S for implementation of the said service, the corresponding request has been formulated to the Arab Bank for Economic Development in Africa (DBSA).



Information Source: NDC

Fig-5 16 Economic Services Infrastructure Projects regarding MtDC

3) Current status in the development partnership for the Mtwara Development Corridor Road network:

- The planning pertaining to the trunk network roads includes the paving with asphalt of the southern corridor integrating the mainline Road Number 6. Its second phase is to be started from 2006 and it will have a time-span of 5 years. The current situation in relation to the partnership development in each section may be presented as below. With the exception of this project, all other situations such as

implementing entities, costs and expenses and operational schedule have been mentioned as follows.

①Peramiho - Mbamba bay

In relation with the asphalt paving of the whole route of 137 kilometers comprising the mainline road, the construction planning will represent a cost of 520.6 billion shillings, with a gross unit cost of 40 million yen per kilometer, from 2008 to 2011. The entity acting as donor is the African Development Bank (AfDB). The corresponding request to the AfDB has already been formulated in December 2004. Upon the required approval by the AfDB in September 2005, detailed design tasks and bid tendering activities will expand likely during 2006 to 2007.

②Songea－Matamanga

In relation with the asphalt paving of the whole route of 200 km comprising the mainline road, the construction planning will represent a gross unit cost of 20 million yen per kilometer, with a cost of 348.2 billion shillings, from 2006 to 2008. The entity acting as donor is the OPEC and the Kuwait Fund. The required negotiations on financial issues are already taking place in December 2004, and the detailed design-related activities are expected within this year.

The proposed composition of the required cost of the project consists ;

Kuwait Fund	(20 million US$)
OPEC	(8 million US$)
BADEA	(10 million US$)
Saudi Fund	(7 million US$)
Tanzania Government	(5 million US$)

The corresponding request to BADEA and Saudi Fund was already formulated in March 2005 and the Tanzania side is expecting to be received the official reply in September or October in 2005.

In addition a part of this area is already partially integrated into the unpaved road to be already considered within the planning of the previous operation for the two-lane road, the implementation costs related to this project are comparatively inferior to the one required for other regions.

③Matamanga－Tunduru

In relation with the asphalt paving of the whole route of 64 kilometers comprising the mainline road, the construction planning will represent a gross investment of 40 million yen per kilometer, with a cost of 243.3 billion shillings from 2009 to 2011. The entity acting as donor is the Arab Bank for Economic Development in Africa (BADEA). The corresponding request was formulated in March this year. In case that implementation of this project by BADEA might be frustrated, other alternatives such as other international agency's or governmental funds could also be considered.

④Unity Bridge

In January 2005, Tanzania and Mozambique governments agreed on the construction of the "Unity

Bridge," which is a 600 meter-long and 11 meter-width bridge, as well as the 5 kilometer-long adjacent access road connecting the two sides of the bridge in order to overcome the Ruvuma river separating both countries. In August this year, the international bid tendering was commenced for the design-related activities. The said bid tendering is likely to take place also during September. The corresponding contract drafts should be ready by October, and from November, and for a total period of 36 months, the whole construction work is expected to be concluded. The total costs up to 33 million dollars of these activities are to be paid by both, the Tanzanian and Mozambican governments.

⑤Unity Bridge Access Road

The construction of the access road linking the 60 kilometers of the road expanding from the Unity Bridge, along to the Masasi - Tunduru Road through Masasi, and the 40 kilometers approximately up to Nangomba, is currently under planning. Implementation operations integrated in the said planning will take place through 2006 at government's expenses. Although planning contents are still to be further specified, asphalt paving of the mainline roads is under study.

(See Current Situation of Mtwara – Mbamba Bay Road in Fig-6)

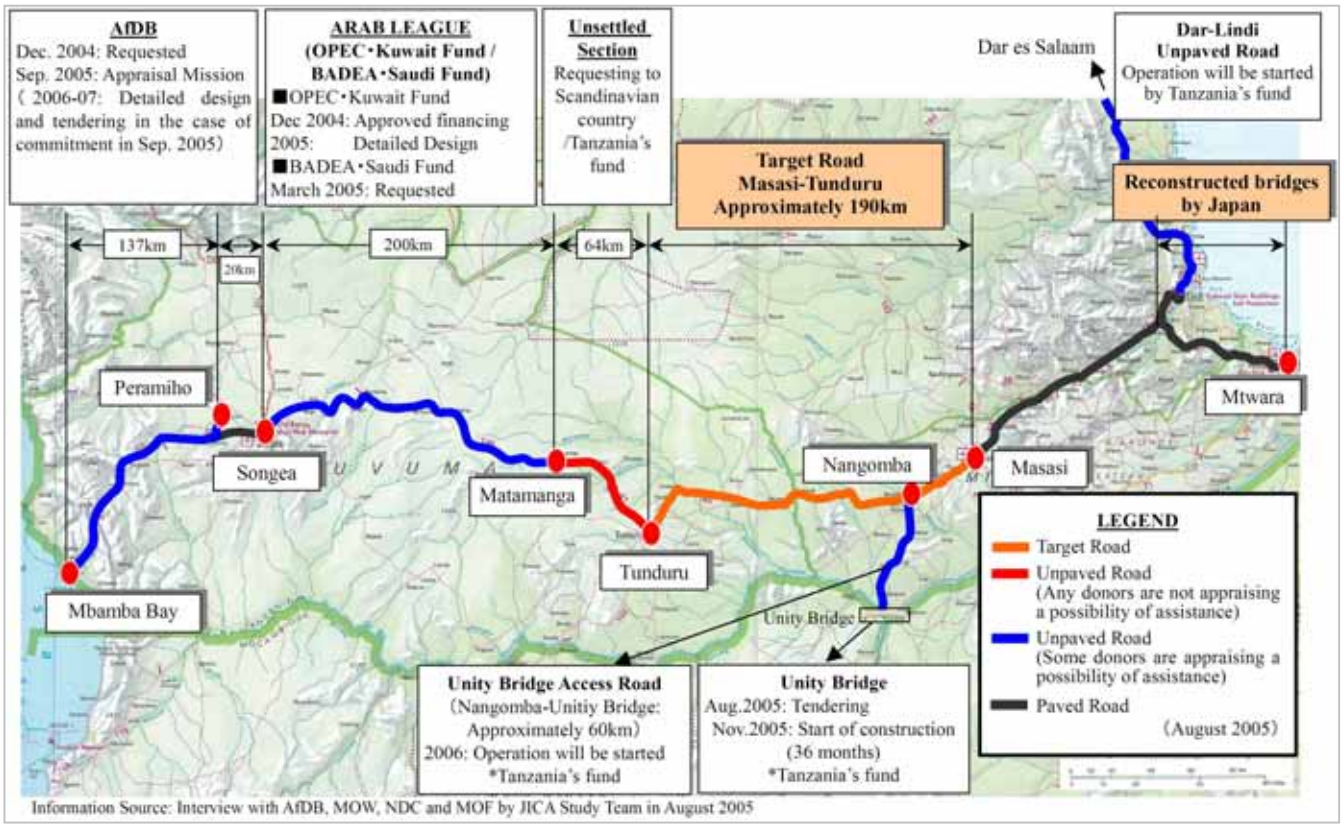


Fig-6 Current Situation of Mtwara – Mbamba Bay Road

(3) Mtwara-Mbamba bay Road F/S Review Results

According to this feasibility study, the internal rate of return (IRR) of this project shows, in economic terms, a

very high practicability on an average of 15.8 %. However, the IRR in question needs some reformulation due to the following two reasons:

First, the construction unit price estimated in the study is of 15 million yen per kilometer, which is a significantly low figure. For this occasion, the estimated cost unit price requested by the Tanzanian Government to the Japanese authorities was higher than double of such an amount.

And second, the current road traffic volume experienced in 2005 is already 2.49 times bigger than the volume estimated in the feasibility study. Furthermore, the increase rate in traffic volume is developing at much higher speed than in the past.

2-2 Project implementation agency and current status of targetted road route

(1) Considerations on the project implementation agency

1) National Development Corporation (NDC)

The NDC is the agency under the legal umbrella of the Ministry of Trade and Industry that was set up in 1962 as a government corporation for the development of Tanganyika. In 1964, apart from taking over the resources of the Tanganyika public farming and agricultural corporation, it restructured itself as a unified agency under its current name. Operations related to investment and refund initiatives take place through the Industry and Trade Ministry. The Secretary of State (or President of the Government) acts as Chairman, while the Finance Minister acts as Vice-Chairman of the committee dealing with joint operations involving the Industry and Trade Ministry, the Ministry of Food and Agriculture and the Ministry of Natural Resources and Tourism, which is managed by a representative appointed by the President. Operations are financed through government loan payables. Their legal limit is up to 2.5 billion shilling.

In relation to the MtDC, first, in 1996, financial contributions were provided in order to set up the Muchuchuma coal-mining region and its electric power generation planning design, as well as the Riganda-Panajyumu-Chitan titanium and iron and steel-related project. Afterwards, in compliance with the development concepts proper of the MtDC, in 2000, the implementation powers for all MtDC matters were granted through a Letter of Authorization (LoA). Through the said LoA, the government avoided intervening directly in such issues, and through the so-called “Private Finance Initiative” (PDF) aimed at strengthening the MtDC. The governmental role in relation to particular infrastructure works, when required, is to structure and procure the initiatives pertaining to the construction, operation and maintenance of public work investment programs.

2) Ministry of Works (MOW) and Tanzania Road Society (TANROADS)

- The implementation organization of this project is TANROADS. On top of it, the MOW manages and supervises the planning design of the project, as well as the monitoring of the works.

TANROADS started its intervention in January 2000, and is in charge of the development and operation and maintenance, including rehabilitation and new construction works, of the trunk road and regional roads in all the country. TANROADS has achieved an outstanding result on rehabilitation and operation and maintenance programs related to regional roads and the trunk road. Thanks to its intervention, the current condition of the mainline road and regional roads continues to be improved. Furthermore, the expectations of the implementation agency TANROADS lead to think that the national budget for roads will continue to increase year by year. The work undertaken by TANROADS can be qualified as one of great efficiency. Complementarily, JICA technical collaboration in this project will make it possible to shorten the preparation time for the project and make procurement-related activities more efficient.

- This project is particularly focused on the road related to Mtwara River and Ruvuma River. Operation and maintenance works for this road are supervised by TANROADS, and every year after the rainy season one-time grading is performed through the Mtwara River. Because of this operation and maintenance work, several months after the rainy season the passage of vehicles through the road is considerably facilitated. The works pertaining to the said operation and maintenance are performed in an efficient way involving concerned local communities. Every year, although thanks to such operation and maintenance initiatives, several months after the rainy season the passage of vehicles through the road is considerably facilitated, in different areas the passage of motor vehicles and bicycles is made difficult and numerous accidents happen during rain falls after all, as the road in question is a one-lane earthen road.

3) Issues related to operation, maintenance and improvement of roads

- The implementation organization of this project, TANROADS, and its superior organization, the MOW, counts on enough skills and know-how to perform a correct work. Pertaining to road development and operation and maintenance, as their results to date show. The organizational structure and collaboration between the two organizations is very highly evaluated. Furthermore, it is considered that the problems to which the implementation of this project may be faced in terms of technical requirements, TANROADS-MOW inter-agency collaboration, and budget available in Tanzania and operation and maintenance activities after conclusion are not so considerable.

(2) Current status of road subject to research

1) Current status of the road

- In relation to the road between Mtwara and Mbamba bay, it can be said that the plan consists of a two-lane road paved with asphalt from Mtwara through Mingoyo until Masasi, and a two-lane earthen road partially paved with gravel for one lane from Masasito Tunduru, Songea and Mbamba bay.
- The targeted area between Masasi and Tunduru includes an earthen road covered with gravel and late rite.

The width of the road is from 5.5 meters to 7 meters, with a roadway of 3.5 to 4 meters. Its inclination is around 20 degrees, from 1to 1.5 meters, on both sides of the road. Its right of way covers 22.5 meters on each side, with a total of 45 meters.

- The level of the road under study differs considerably. From its starting point in Masasi to the spot point located in the kilometer 26 is certainly low. From its kilometer 26 to kilometer 28, the area is mountainous. From kilometer 28 to kilometer 94, the area is comprised by different hilly spaces. From kilometer 94 to kilometer 100, a rocky mountainous area is found. Afterwards, from kilometer 101, and after the bridge on the Lumesure River bordering the Mtwara river and the Ruvuma River, again a rocky mountainous area is found between kilometer 102 and kilometer 119. Later, new hilly areas are to be faced. From kilometer 160 to kilometer 165, and covering the passage of the bridge on the Muhuwesi River, again, hilly areas are to be crossed. This is also the situation from kilometer 190 to kilometer, final spot point at Tunduru.
- Based on the current road line shape, road pavement could imply positive results. At the current time (dry season), with the current pavement, the traveling speed of vehicles is limited to 60 kilometers per hour. However, upon implementation of the project, from 3 hours and 20 minutes, a reduction of traveling time up to 32%, that is to say, to 2 hours and 16 minutes (a difference of 1 hour and 5 minutes) could be considered as possible.

2) Current status of traffic volume

- The daily traffic volume of the road under observation (ADT), according to the research results obtained, from Masasi around the point spot located in kilometer 5, a total number of 142 vehicles were counted (during 12 hours of daily traffic). This represents an annual increase of 6% from 1990, when 59 vehicles were counted. Furthermore, the research results near Tunduru indicated a total number of 132 vehicles (during 12 hours). This represents an annual increase of 7% from 1990, when 48 vehicles were counted. Traffic volume is structured by large heavy trucks (25-32%), buses (13-16%), while small vehicles represented between 54-59%of the traffic. Other types of different vehicles do not represent a considerable percentage.
- In terms of total traffic volume on the road between Mtwara and Mbamba bay, from the export harbor of Mtwara to internal regions, the daily traffic volume is between 341 to 115 vehicles. However, in the vicinity of Songea near the Ruvuma River, 218 passing vehicles were counted. The annual average increase in traffic volume is thus considerable from the maritime to internal areas, as population also increases.

  (See Traffic survey points in Fig-7, Traffic Volume in Table-2 and Fig-8, Rate of Vehicle Type in Fig-9)

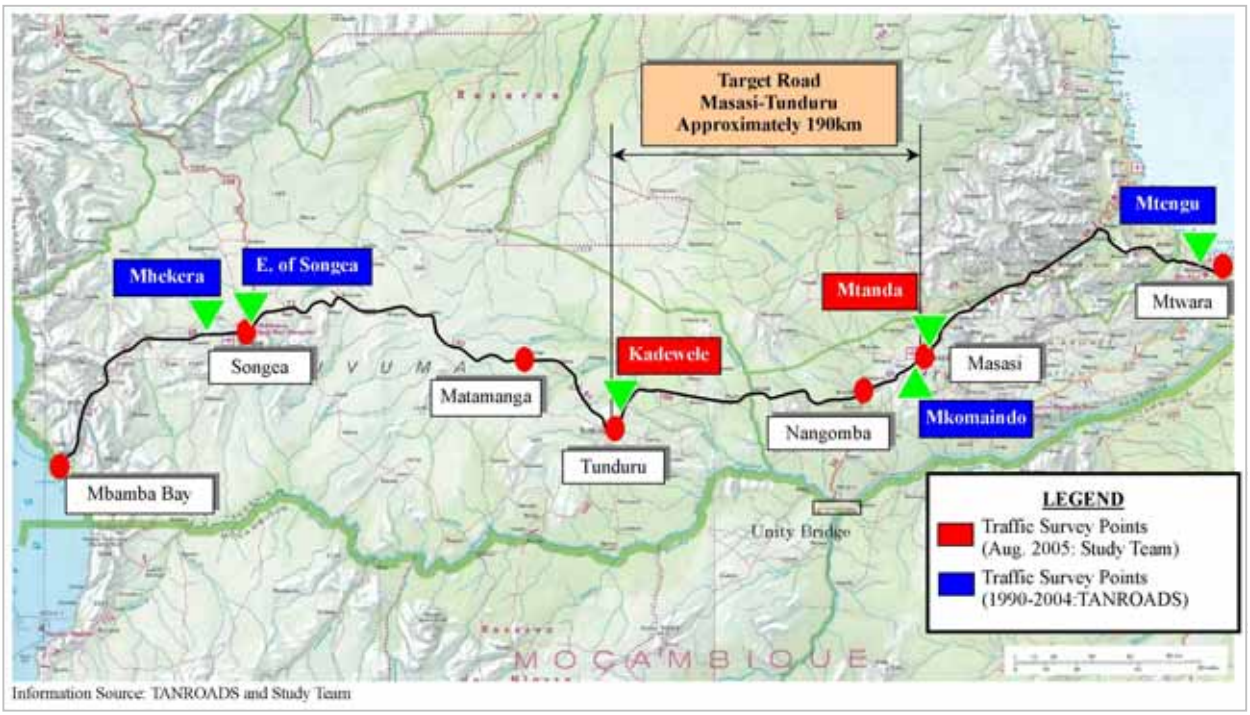


Fig-7 Traffic Survey Points

Table-2 Traffic Volume in the Mtwara Development Corridor

Road Secsion	Location	ADT							Growth Rate
		1990	1993	1999	2002	2003	2004	2005	
Mtwara-Mingoyo	Mtengu	164	136	264	152		341		5.3%
Mingoyo-Masasi	Mtanda		150	182	162		238		4.3%
Masasi-Tunduru	Mkomaindo	59	111	48			134	142	6.0%
Masasi-Tunduru	Kadewele	48	162	31	43			132	7.0%
Tunduru-Songea	E. of Songea	61		117			218		9.5%
Songea-Mbamba Bay	Mhekela	33					115		9.2%

Information Source: TANROADS and Study Team

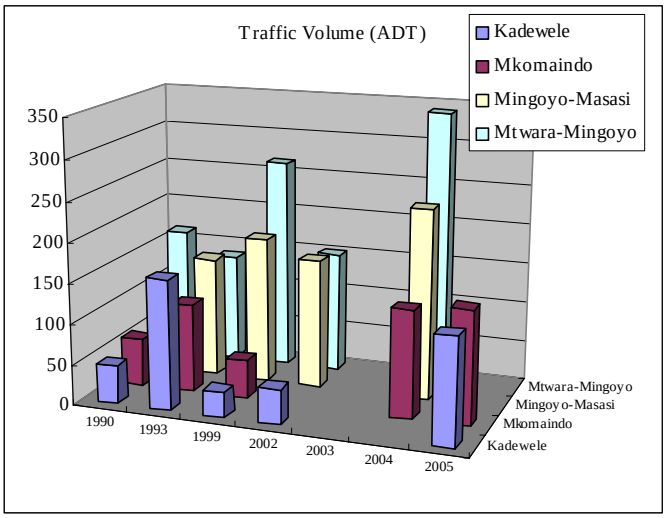


Fig-8 Traffic Volume in MtDC

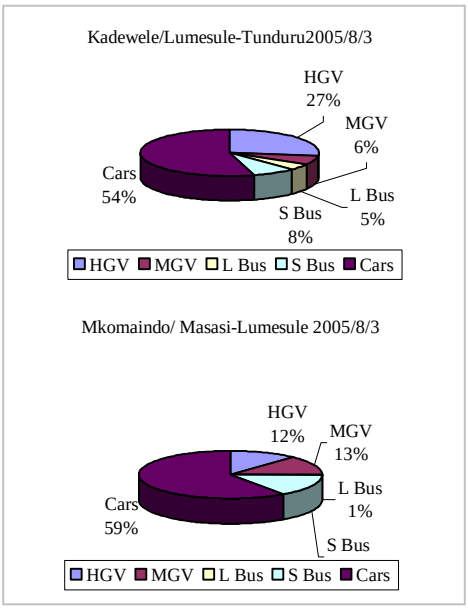


Fig-9 Rate of Vehicle Types

3) Current status of road facilities

- There are 42 bridges built along the road under study here, according to the research implemented. A large part of the construction work was implemented in 1960, 45 years ago. Within the said 42 bridges, 11 bridges are over 6 meter long and less than 10 meter long (around a two-lane road space) made of concrete. The rest is mainly composed of bridges less than 6 meters (around 3.5 meters) with a one-lane road width.
- Generally speaking, load limits are around 20 tons. However; current trailers overpass such weight. If this circumstance was bearable in the past, it is not so any longer. Current traffic levels are affecting the condition of all bridges in a serious way. The condition of those bridges not longer than 20 meters is not so dramatic comparatively though, and could eventually bear the traffic volume required for engineering works. However, those bridges over 20 meters long are being affected in a dramatic way.
- However, in the future, in addition to the expected vehicles to be found in the area in charge of engineering works in relation to the development of the Mtwara Development Corridor, as well as the transit of other heavy vehicles for transportation of different goods, and other vehicles charged with different construction works between Masasi and Tunduru, and between Songea and Tunduru and Masasi roads, and due to the particular difficulties added by the 20-ton limit of the current bridges, the feasibility study recommends the construction of at least 22 new bridges.

Table-3 Current status of Road Facilities in Masasi – Tunduru Road

Width	Type of Structure	Length of Structures					
		<5m	<10m	<15m	<20m	>20m	Total
<6m	R,C,	4	1				5
	Steel Truss					4	4
	Steel/Concreate		2	4		8	14
	Steel.Timber Deck		3	2	3		8
	Sub-total	4	6	6	3	12	31
>6m	R,C,	4	6				10
	Steel Truss						0
	Steel/Concreate		1				1
	Steel.Timber Deck						0
	Sub-total	4	7	0	0	0	11
Total	R,C,	8	7	0	0	0	15
	Steel Truss	0	0	0	0	4	4
	Steel/Concreate	0	3	4	0	8	15
	Steel.Timber Deck	0	3	2	3	0	8
	Total No.	8	13	6	3	12	42

4) Current status of pavement and roadbed

- According to the grading results obtained by TANROADS in April and May after the rainy season, the average passage speed in flat and hilly areas is of 60 kilometers per hour. However, regardless of maintenance works after the rainy season, such a figure is contradicted by the results obtained through this research performed at the beginning of August showing that, through the one-lane road, numerous circumstances, such as the high danger of fallings over the road, make such a speed difficult to achieve.

Furthermore, it was found that the possibilities of accidents for vehicles and bicycles transiting on very soft grounds and intersection areas were high. In addition to this, when raining, slipping constitutes a serious dangers for drivers. An additional problem to be solved here is the different surface level found in such roads with different levels, some of them are particularly low, which prevents a safe driving during the whole rainy season.

5) Future road improvement plans

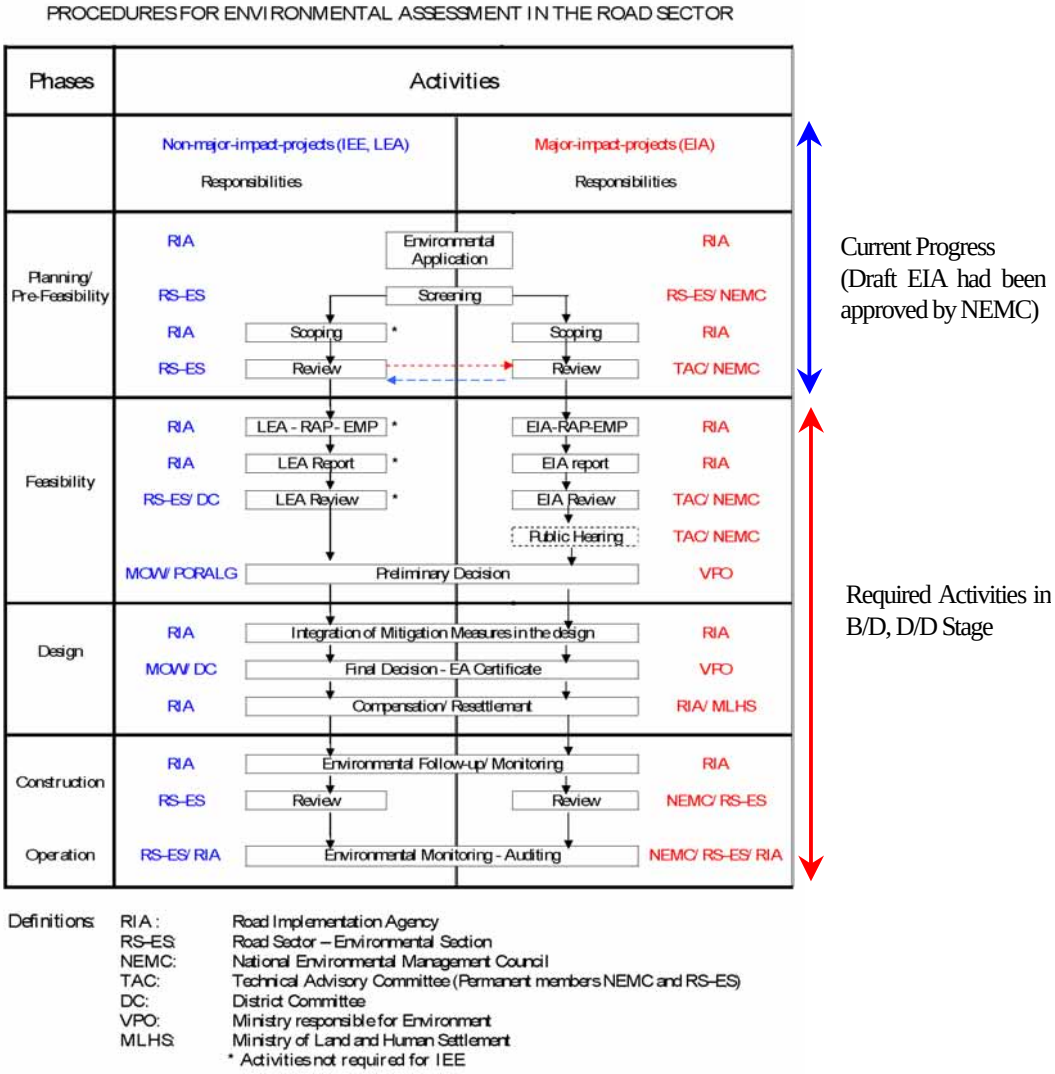
- Traffic volume: According to the study performed by the research group during August 2005 (dry season), the daily traffic volume (in the vicinity of Masasi, 142 vehicles, near Tunduru, 132 vehicles) represented an increase of 2 to 3 times in comparison with the traffic volume observed and noted in the feasibility study of 2003 (near Masasi, 69 vehicles, in the vicinity of Tunduru, 41 vehicles). In addition to this, as from 1990 to 2005, the annual average increase in traffic volume has been between 6% to 7%, the current feasibility study also estimates that the future annual average increase in terms of traffic volume will be also between 6% and 7.7%. Therefore, the future traffic volume is not correctly reflected in the Mtwara corridor planning. Having said this, the future expectations pertaining to road planning, at least concerning the current NDC Mtwara development planning are to be reconsidered. The number of tracks transporting import products from Malawi, Zambia and Mozambique that use the Mtwara harbor are also to be analyzed.
- Based on the traffic volume figures obtained during the 134-142 days of 2005, the increase of the current annual average traffic volume is easily forecasted. The daily traffic volume after 10 years and after 20 years is likely to be 250 vehicles and 500 vehicles; respectively. This level would surpass the capacity of the current paved road between Mtwara and Masasi, and it represents a higher level than the current traffic volume of the national mainline road network by average. For this, as it has been formulated in the respective written request, the standard width of the national mainline road of two-lane road of 6.5 meters and 1.5 meters should be adjusted to satisfy the required future national road design standard in terms of traffic volume.
- The line shape of the road object of this research is, generally speaking, in good condition. Within its 192 kilometers, the space where the line shape's design speed is 80 kilometers per hour or more covers 85% of the said distance. The remaining 15% is covered by hilly and rocky mountainous areas where the design speed is less than 40 kilometers per hour. From Masasi, between the 41-43 kilometer spot point and the 95-100 kilometer spot points are covered by hilly and mountainous areas and a wild life corridor. For speed limitation purposes, the current line shape is preferred.
- Concerning the pavement design, the railroad bed intensity trial samplings available for making the feasibility study were just a few,. Research for at least one additional kilometer is to be undertaken.

According to the results obtained through observation on the ground, although significant swelling soil is not likely to be found, the possibility of finding black cotton soil in different areas is very high. Therefore, further trials to evaluate properly the quality of the soil are required. In addition to this, if an evaluation is performed on the standards of traffic volume and easiness of operation and maintenance works, the surface course is to be treated to make it permeable with two layers of asphalt (light pavement). In relation to roadbed materials, as proper rock mountains are rare, application of stabilization of CBR30 materials with cement or lime for the road are likely favored. This corresponds to the contents of the request formulated.

2-3 Environmental and social considerations

(1) Current status of the EIA related to this project and applicable Tanzanian EIA ordinances

- For this project, the corresponding environmental impact assessment (EIA) required the analysis and consideration of the different environment-related ordinances pertaining to the Environmental Management ACT (promulgated in November 2004) and the Environmental Assessment Guidelines (NEMC revised in 2002), among others.
- The fundamental procedures for environmental impact assessment in Tanzania includes the following: ① project registration, ② screening performed by the evaluation agency, ③ scoping, ④ draft EIA report composition, ⑤ publication of comments and TOR for the corresponding review and required amendments by the evaluation agency NEMC, ⑥ EIA amendments based on the said comments and TOR, ⑦ public hearings, ⑧ review and approval by the evaluation agency NEMC, ⑨ approval of disclosure, and ⑩ implementation of environmental monitoring at the time of construction.
- Continuation of the EIA pertaining to the road between Masasi and Tunduru, as a part of the road between Mtwara and Mbamba bay, is already in place and to be continued until concluded as specified in the corresponding draft. Generally, finalization of the said EIA by the authorized consulting team is to take place for the detailed design plan which entrusted by the project executing agency, such as Ministry of Works. (See EIA Procedure regarding Road Sector in Fig-10)



Information Source: Environmental Assessment (EA) and Management Guidelines for Road Sector (December 2004, Ministry of Works)

Fig-10 EIA Procedures regarding Road Sector Project

(2) Scoping based on initial environmental examination (IEE Level)

- The IEE served to analyze and understand, from a social environment point of view, all families and joint facility centers located within the area on which a right of way exists. From a natural environment point of view, the required hearings were set up with 11 agencies including GTZ, UNDP, WWF, the University of Dar es Salaam or MNRT, among others. Thanks to such an initiative, valuable opinions and ideas in relation to the degree of influence of this project on the current status of the Selous-Niassa wild life corridor (east side part of the said corridor), as well as eventual mitigation measures, were obtained.
- In relation to civilian relocation, a fundamental issue in the area of social environment, according to the field survey obtained, the existence of 603 families in total, as well as religious centers located within the right of way (within 22.5 meters on both sides from the central section of the existing road) were confirmed. This

project, implying road construction-related works, is to be put in practice in compliance with the Tanzania Road Law (The Road Ordinance of 1967) that deals with issues such as the expropriation of land within areas on which a right of way exists. In relation to families and farming centers located outside of areas on which a right of way exists, the law to be observed is The Land Act of 2001 dealing with expropriation of land in general areas. In addition to this, this research confirmed that the setback of almost all backland is possible in relation to homes located within areas on which a right of way exists. The possibility of civilian relocation initiatives (migration to other areas differing in terms of community, environment and life style) coming into existence is very low.

- Different meetings with concerned parties and other stakeholders took place in the towns of Masasi and Tunduru in order to increase the general understanding pertaining to how the improvement of the road could exert an influence on the life style of local communities (including profitable and negative points of the existing road). In each town, opinions such as the following ones were obtained: "We would like to see a quick continuation in the improvement of the road." "Civilians living along the road should be employed as workers for the construction of the new road." "People being affected should be duly informed in advance."
- In relation to the east side wild life corridor, a relevant issue concerning the regional natural environment, detailed research has not been undertaken. The only available research results on this are those obtained individually by the Rukwika Lumesure / Msanjesi Game Reserve administrator, depending on the Ministry of Natural Resources and Tourism. As there are no complete graphs available, this research fully depends on this issue on the consultations with the said representative. The focus was then to design a distinct map of the passage route and the specific intersection route, by having hearings with civilians along the road under consideration.

(See Fig-11 Routes of elephant migration in the eastern wildlife corridor)

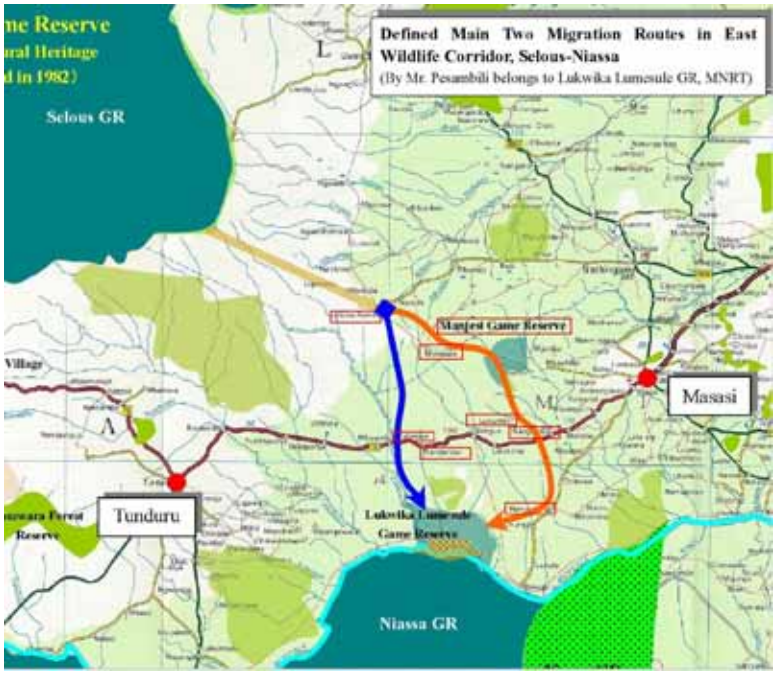


Fig-11 Routes of Elephant Migration Corridor in the East Wildlife

- Comments indicating that this project would not affect seriously the Eastern wild life corridor were obtained from all the agencies interviewed. Nevertheless, there is a particular need to implement measures (road constitution and "road kill" prevention measures, etc…) to mitigate any direct effect as a result of road works. In relation to indirect influences, comments were obtained in the sense that appropriate advice (measures to prevent the expansion of urban and farming centres in not planned areas, the illegal cutting of trees, as well as poaching) should be offered to the Tanzanian government through the corresponding agents.
- At the scoping, implementation of the measures for the civilian relocation, and research on flora and fauna, including elephant corridors, continues. It was decided that support was required to finalize the EIA based on the Tanzanian EIA method. However, while the current draft EIA targets the whole Mtwara-Mbamba bay area, this project deals exclusively with the area between Masasi and Tunduru. Therefore, the distribution of costs to be assumed by Tanzania and Japan need to be specified. In particular, following the TOR of NEMC, the Japanese support was focused exclusively on the Masasi-Tunduru area. As a result of it, supplementary research and EIA-finalized advice are to be put in practice. In relation to other areas (supplementary research and complete reporting activities between Mtwara-Masasi, and Tunduru-Mbamba bay), the distribution of responsibilities and activities between TANROADS and MOW remains an issue to be clarified.

(3) Issues and consideration on natural and social environment

- Particular care is to be taken when dealing with any eventual intervention affecting civilian relocations and the east side wild life corridor, as expressed above. In relation with civilian relocation measures, the required activities, as well as the pertinent notifications in advance to the affected families and communities are to be undertaken at a smooth path through the implementation agency (TANROADS), the local government and Village Executive Officers (VEO). Such notices in advance are to cover; at the stage of the Basic Design, the families to be affected by the decision pertaining to the basic line shape, and at the stage of the Detailed Design; the roads to be targeted for engineering works, as well as engineering works yards, etc…
- In relation with the wild life corridor, at the stage of the Basic Design, there is a fundamental need to focus on the implementation of detailed hearings with civilians pertaining to issues connected with the east side wild life corridor, road intersection routes and other areas of both; private and community use. In addition to this, there is a need to perform fauna and flora research (whether or not precious species of flora and fauna are under consideration) in collaboration with TOR of NEMC. Furthermore, and based on a similar research, there is a need for an environmental education program dealing as well with the corresponding mitigation measures pertaining to road constitution and "road kill" prevention initiatives. Complementarily, in order to achieve consensus with wild life corridor administrators, it would be preferable to exchange available information with GTZ, WWF, MNRT and other. Particularly; in relation with the road redesign of the northern part of Tanzania (Makuyuni-Ngorongoro road rehabilitation project) performed by Japan, valuable

comments were obtained from the Tanzanian government and other donors. Thanks to the experience and know-how obtained this way, correct mitigation measures could be planned accordingly.

3 Conclusion: Proposal for Grant Aid (Basic Design)

3-1 Direct and indirect effects of this project, solutions to current needs and expectations:

- This project, as a transportation project targeting a fundamental part of the "Mtwara Development Corridor" planning scheme, does not only contribute to the international economic development in the region, but also leads to the improvement of the economic and social development standards of the civilians living in the region. For this reason, and in relation to its business-oriented effects, this project is to be evaluated on three different levels: ① in consideration with the four countries neighboring the Mtwara corridor, ② the domestic economic level, and ③ the economic level of the Southern area in relation with the regional railroad network.
- In addition to this, together with the different direct needs to which this project aims to answer, this project is, indirectly, a starting point for the equipment of the Mtwara – Mbamba bay road network. There is also a need for enough consideration in relation to the increasing of traffic volume to be expected as a result of the economic development and the new investments in place.
- Therefore, this project, with its direct and indirect benefits aiming at answering the demands structured in terms of economic and social development, is likely assumed to be one from which considerable expectations are derived due to the evaluation by following impacts list.

Table-4 Impact list for Masasi -Tunduru Road

No	***ITEMS***	***No***	***ITEMS***
Economical Impact		**Social Impact**	
1	Employment Opportunity	1	Community Development
2	Water Resource Development	2	Poverty Reduction
3	Mine Development	3	Gender
4	Power Development	4	Education
5	Agricultural Development	5	Cultural Heritage
6	Fishery Development	6	Regional Inequity
7	Industry Development	7	Healthy/Hygienic
8	Transportation		
9	Telecommunications		
10	Urban/Rural Development		
11	Tourism		

- The table above provides 18 impact items likely to be reviewed by the indispensable impacts found while analyzing the search results obtained from hearings, materials review and existing contributions starting by the "Mtwara-Mbamba bay Road construction project" study report. Even though narrative approaches, it also underlines the value of both, the existing needs representing the direct effects, and the expectations representing the indirect effects. Accordingly, in the above chart, the categories where effects with high needs exist are seven: employment origination, natural resources development, farming and agricultural development, transportation facilities equipment, poverty reduction, correction of regional differences and public health. Such effects, by starting with this project at a micro-level, on a regional basis, are of considerable value and, going on, are likely to develop into a macro-level, taking into consideration the neighboring countries around the Mtwara corridor.

3-2 Grant Aid Relevance

3-1 The benefits resulting from the implementation of this project in relation with the satisfaction of the objectives for increasing the quality of people's livelihood and support to the reduction of poverty, which are considered as fundamental for the evaluation of the relevance of the grant aid at stake, might be considered as follows:

(1) Economic impact categories (economic benefits)

① Work creation and increase and improvement in revenues

② Regional improvement in terms of farming and agricultural development (natural resources, farming development, electrical development, fisheries, engineering and tourism, among others)

③ Improvement in transportation and traffic instruments related to the equipment of road networks, migration, and transportation time reduction, transportation cost reduction and other similar categories)

(2) Social impact categories (social benefits)

① Improvement in revenue, poverty reduction through social environment equipment provision

② Correction of regional differences

③ Public health improvement and water access improvement

In this research, upon taking into close evaluation and review all the pertinent data, as well as consultations with related agencies and interviews, the corresponding design of the above-mentioned categories was made. In function of this, it is clear that direct business effects are discovered with a result of social benefits for reducing the transportation distance for farmers and improving the access to purchase points, hospitals, elementary and basic schools, and access to water-related facilities. In other words, the direct business effects are not exclusively limited to economic benefits such as the creation of employment with the introduction and implementation of the contents of this project in the regions that are object of this research and that do not count on enough water and electricity-related facilities, among other, in the south of Tanzania, an area where regional disparities are considerable. In addition to this, by implementing the contents of this project, indirect benefits and effects such as improvement of each business area, furthermore, correction of regional disparities, etc. are likely expected. In this sense, availability of the grant aid

for this project would be existed.

3-3 Points for special attention in consideration of grant aid implementation

(1) Points for special attention in consideration of Road and bridge planning

In relation to the points for special attention concerning road and bridge planning activities, particularly, the following points are to be mentioned:

- Traffic volume

  On this occasion, based on the research results pertaining to the traffic volume analyzed through a relatively short period of time, if traffic volume obtained at the F/S of 2003 is compared with the one obtained in 2005, the figures have increased by a ration of 2.6. In addition to this, the increase ratio is expected to be raised further. Therefore, during the next forecasted research, and in consideration of the current traffic volume research available today, the re is a need for a detailed research on traffic volume induced in Tanzania and the neighboring countries along the Mtwara Development Corridor planning.

- Route structure

  The line shape of the targeted road, in general terms, is to be considered in quite positive terms. However, the area covering 15% of the whole line is one of high mountains, which affects seriously the speed with which design planning can be performed. Nevertheless, because in two of these areas, animal corridors can be found, traffic speed limits as well as the speed at which the required works may be implemented are considerably to be reduced. For these reasons; maintenance of the current line shape is desired. In addition to this, settlement and human passage areas are easily found on other mountainous areas. Therefore, for construction cost reduction and traffic security, the planning construction following approximately the current line shape is recommended without improving or modifying drastically the current route shape. Furthermore, in order to minimize the impact on houses along the road, and taking into consideration the current right of way crossing all regions, as having an already decided width of 45 meters, the route shape design underlined by the current line scheme is strongly preferred.

- Pavement design

  As railroad bed intensity trial sampling in this F/S is not considerable, further research is required. In addition to this, special attention and care is to be provided for areas that may suffer from the adverse effects related to black cotton soil. Additionally, there is a need to solve the issues pertaining to traffic volume and design in mid-term phases.

  Additionally, operation and maintenance after completion are services to be provided with ease. As first stage investments are scarce, surface forms are preferable. In relation to the design of high and low-level road base, local resources are to be maximized on the ground in order to reduce construction costs.

- Bridge design

  In relation with the design in the construction of the new bridge proposed at this F/S, based on the analysis

pertaining to induced traffic volume, flooding study methods and design methods in Tanzania, the emphasis is to be put on the building of secure and cheap bridges.

(2) Points for special attention concerning procurement, construction and other similar costs

Concerning the project areas that currently count or may count on facilities for the provision of electricity, telephone both fixed line and mobile, as well as water-related services, only Masasi and Tunduru can be named. In addition to this, other public social services are in a similar situation. Therefore, for the service place in relation to engineering works of this project, a link from Mtwara to Masasi connected through paved road should be placed. Furthermore, in relation of engineering works planning, the following considerations are to be mentioned.

- Although borrow pits that can be used on ground of good quality on this road are largely distributed, the mountainous areas with aggregate concrete and asphalt, exception made of the point spot located approximately 100 kilometer away from Masasi, cannot be found. Therefore, production of crushing plant is required. The borrow pit place, after completing the corresponding engineering works, is formed and expected to be used as a cistern for water consumption in the region.
- As there is no equipment in the project area to work with asphalt or concrete plant, or other similar component, procurement in Tanzania or from overseas is required.
- Concerning procurement-related bidding for vehicles for engineering works and other required resources, basically, procurement in Tanzania is much desired. Carrying it into the ground area to Masasi, by land or sea, is expected to be done through Mtwara. The water in the Mtwara harbor may be found down to 9 meters or more.. Due to this reason, ships and boats are limited to those no longer than 200 meters. Container lift limits require that no one larger than 20 feet may be used..
- Within the current road engineering works, and for transportation and transit of heavy-weight vehicles for engineering works purposes, the construction of an indirect route paved of gravel is required. After completing the pertinent engineering works, the indirect route would be constructed with a right of way, sidewalks, and a bicycle section, which would make life along the road possible. However, certainly; direct access of each family to the mainline roads would have to be limited. As it would contribute to a safer transportation outcome, special consideration is to be put on engineering works planning.

The objective is to reduce construction costs when adopting each of the measures underlined above. Different costs are to be considered given the length, 192 kilometers, of the whole route. However, at the same time, as financial restraints are obvious, the following measures might be considered:

- As a component of the first priority of the engineering works, the precedence at stake is the construction of the road going from Masasi to Mangaka, 54 kilometers away. Planning activities in relation with the construction of the Unity Bridge and its road are to be completed after 3 years of the implementation start from

either the end of 2005 or beginning of 2006. It is an issue of importance to construct the road in this area first. In the said areas, apart from other general road construction works at the route targeted at the F/S, particular relevance is to be paid to the 22 bridges of new construction, of which four bridges are of over 30-meters long and 8 are of a length inferior to 15 meters. The CBR3 represents an earth fill space still to be constructed of no less than 7 kilometers. The access road leading to the Unity Bridge has two columns. The road linking Masasi and Nangomba, with a distance of 38 kilometers, possesses land features proper of a precipitous area, which would exert a negative influence in the total construction cost required. For this reason, the access route to Mangaka, with a comparatively better line shape is likely to be used as a more favorable alternative. In addition to this, in Mangaka, where many settlements are concentrated along the road at a density bigger than in other regions, the side effects are likely to be relevant also in relation with road construction activities.

- Concerning the second priority of the engineering works, this would cover the construction of the route of 71 kilometers going from Mangaka to the Nakapanya area, where numerous settlements can be found around a linear space of 125 kilometers that includes the bridge in Mtwara on the border of the Lumesure river. At this area, the general road construction to be implemented covers the construction of a new bridge over an extension of 30 meters. The current bridges include four of 24 meters, and other 16 bridges inferior to 12 meters. The CBR3 represents an earth fill space still to be constructed of 15 meters.
- During the third proprity, from Nakapanya to Tunduru, through a distance of around 192 kilometers, there is a road already constructed along a distance of 67 kilometers. Apart from a new construction of only two bridges with a length not superior to 12 meters, a bridge of 44 meters and another bridge on the waters of the Muhuwesi River, with a length of approximately 70 meters, can be found. The CBR3 constitutes an earth fill road of 15 meters.

(See priority road map in Fig-11)

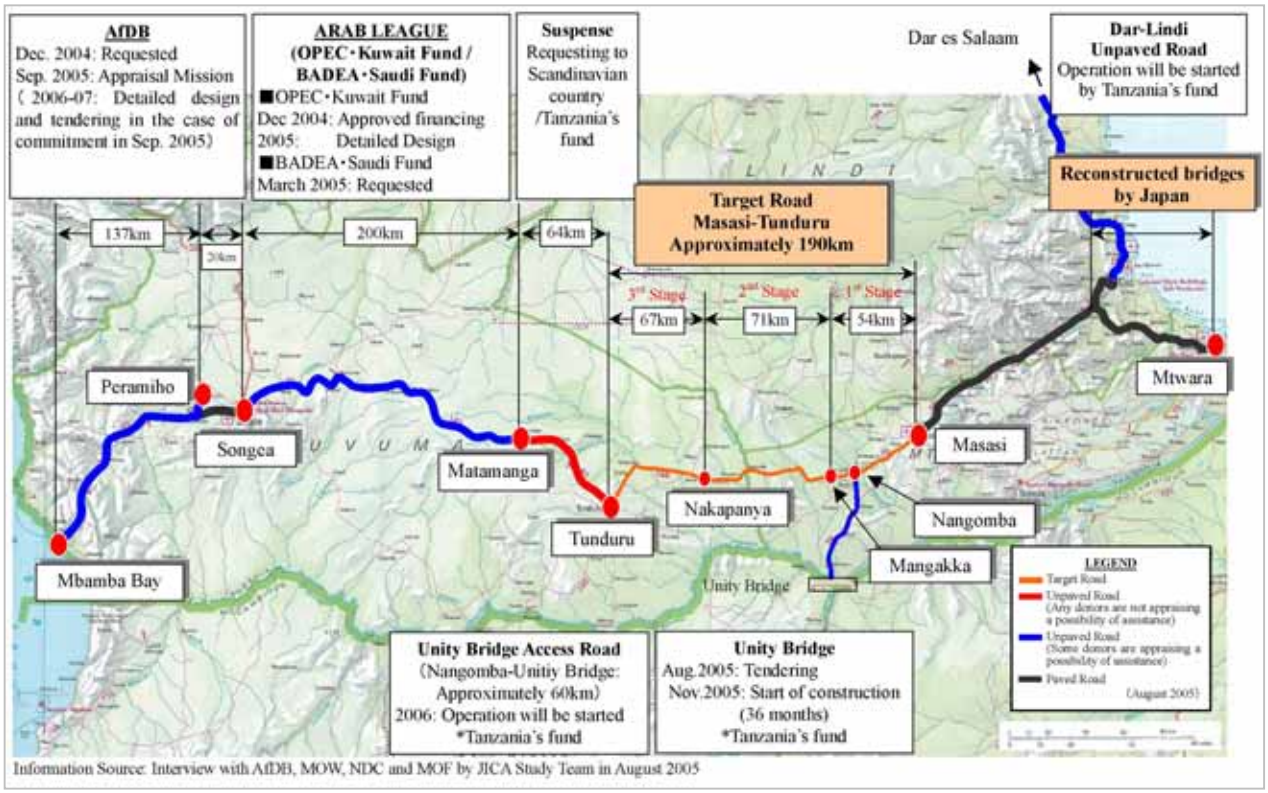


Fig-12 Proposed Priority Road Map

(3) Environmental and social considerations

- In relation with the point's object of such guidelines, during the next stages of this research, when the IEE results are to be put in practice, they should be reflected in the corresponding design. More specifically, the mitigation methods and research specified in the scooping table are to be implemented.
- Particularly, in relation to the migration of civilians, in collaboration with the implementation agency (TANROADS), and the design of proper civilian migration procedures planning, which are to be considered as procedures within the EIA, comprehensive consultations are to take place with regional and municipal governments. Furthermore, in connection with the wild fauna and flora corridor in the eastern region, international research agencies such GTZ, UNDP, WWF and other similar entities are paying attention to all required details. The research in collaboration with the administration office of the MNRT that controls this region's game reserve should be continued., and when required, information exchanges with the said agency should be also are required.
- Furthermore, in relation to procedures pertaining to the EIA in Tanzania, as it is essential to finalize the EIA report, there is a need to count on the support of the Tanzanian project implementation agency (MOW and TANROADS) implementing the said EIA. In relation to the implementation of the said EIA, and together with the TOR presented by the National Environment Management Council (NEMC), a field survey, and further support for the drafting of required documents shall take place. There is also a need to assure the

consecution of the required environment-related licenses before the start of the detailed design (D/D). Additionally, in relation to the contents that should be supported by the Japanese counterpart, comprehensive consultations should take place through the advance meeting.

< APPENDICES >

Appendix-1 Application Form

THE UNITED REPUBLIC OF TANZANIA

NATIONAL DEVELOPMENT CORPORATION
DAR ES SALAAM

MTWARA DEVELOPMENT CORRIDOR

MTWARA – MBAMBA BAY ROAD

PROPOSAL FOR

JAPANESE GRANT AID

FOR

THE DETAILED DESIGN AND UPGRADING TO BITUMEN STANDARD OF THE 190KM MASASI – TUNDURU ROAD SECTION

National Develoment Corporation
P.O. Box 2669
Dar es Salaam, TANZANIA
Tel: 255-22-2112893, 2115492
Email: simba@cats.com
ndc@ndctz.com

November 2004

Table of Content

APPLICATION FORM FOR JAPAN'S GRANT AID

1. Date : November 2004

2. Applicant : The Government of the United Republic of Tanzania

3. Project title : Detailed Design and Upgrading to Bitumen Standard of the 190km Masasi – Tunduru road section of the Mtwara – Mbamba Bay Road

4. Sector : Roads Transport Infrastructure

5. Project type : Facilities Construction (Road Construction)

6. Target site

(province/country name) : Mtwara and Ruvuma regions in southern Tanzania

(city/town/village name) : Masasi and Tunduru districts

(from the metropolis) : about 700km south of Dar es Salaam

The Masasi – Tunduru road is shown on the map showing the Mtwara – Mbamba Bay road, Figure 1 and Figure 2.

7. Requested amount : US$ 65,048,628

8. Desired fiscal year of implementation:

Detailed Design : FY 2005

Implementation : FY 2006 – FY 2007 (2 years)

9. Implementation Agency:

Ministry/Agency : National Development Corporation / Ministry of Works

Person in charge : **(full name)** Col. Joseph Leon Simbakalia

(Affiliation) Managing Director

Address : P.O. Box 2669, Dar es Salaam

Telephone No. : +255-22-2112893, Fax +255-22-2113618

Figure 1: Location Map of Mtwara – Mbamba Bay Road

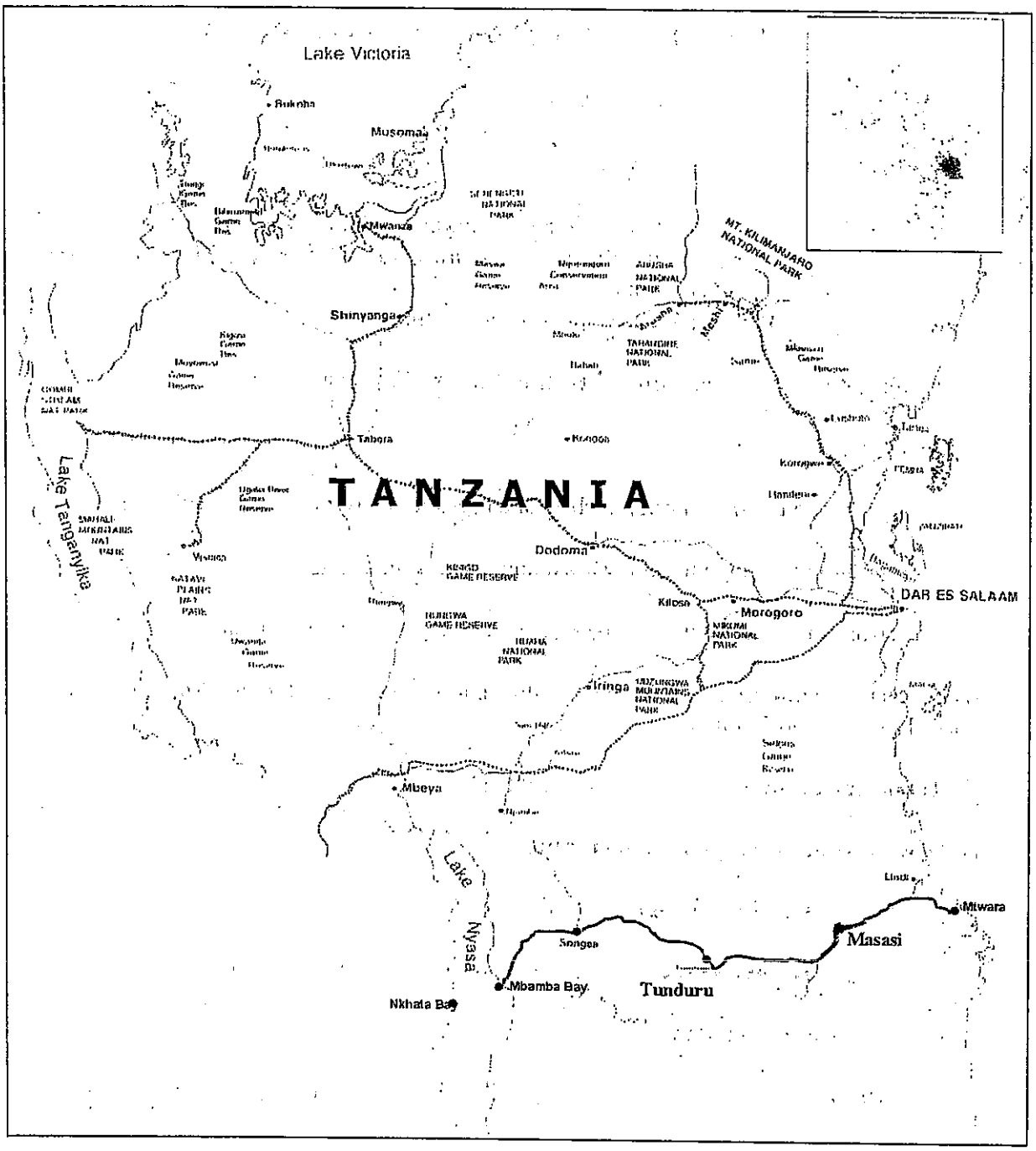
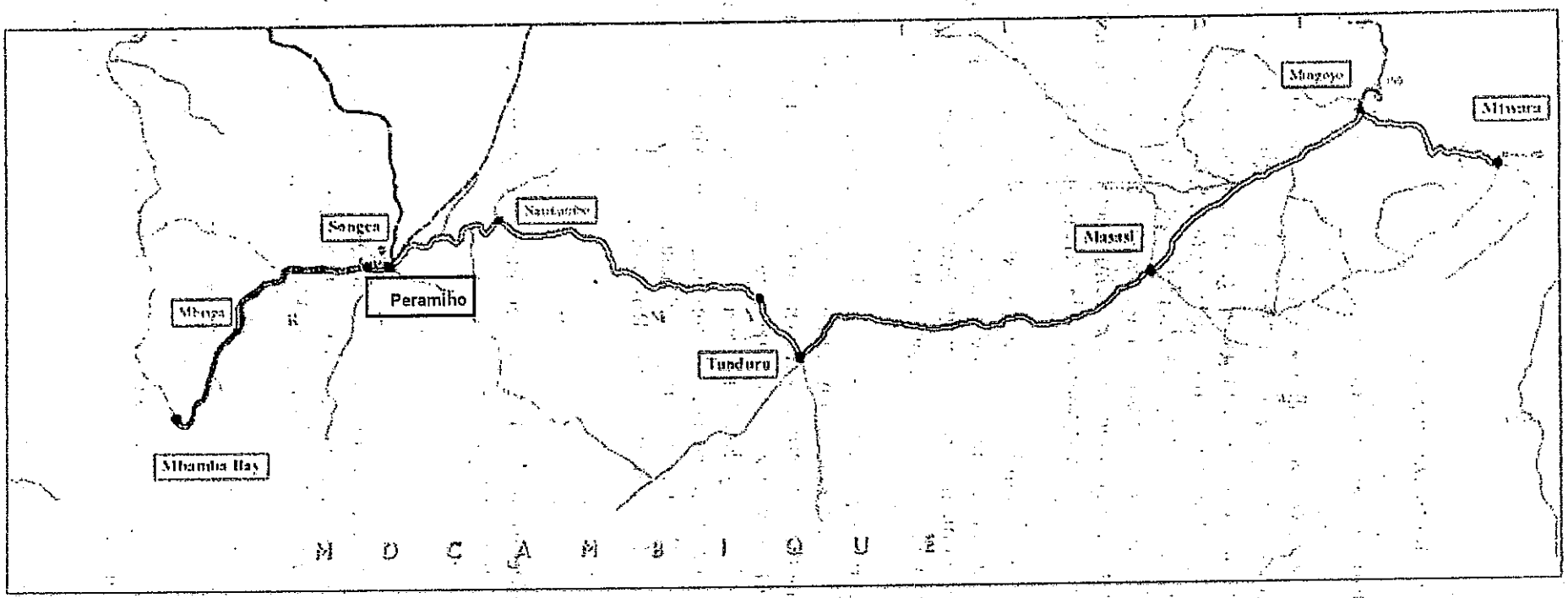


Figure 2: Mtwara – Mbamba Bay Road showing sections of the road



Legend:		
Section 1: Mtwara to Masasi	L = 201 km	
Section 2: Masasi to Tunduru	L = 192 km	
Section 3: Tunduru to Songea	L = 264 km	
Section 4: Songea to Mbamba Bay	L = 165 km	
Total Length of All Sections:	L = 822 km	

10. Outlines of the implementing agency.

(1) The position in the Government

The **National Development Corporation** (NDC) was established as a statutory corporation by an Act of Parliament in 1st January 1965. The current role of the NDC is to initiate, develop and guide the implementation of economically and environmentally sustainable industrial development projects in all sectors of the economy, which add value to the output of, or support the primary production activities. NDC also supports and participates in the development and implementation of economic services infrastructure and economic development generators projects in partnership with the private sector.

The National Development Corporation (NDC) of Tanzania has been given the mandate by the Government of the United Republic of Tanzania to develop, coordinate and implement projects in the Mtwara Development Corridor (MtDC), in partnership with the private sector, (Annexture 1).

Mtwara Development Corridor is a SADC Regional Spatial Development Initiatives (SDI), founded on strategic initiative by Malawi, Mozambique, Tanzania and Zambia to create a multimodal transport corridor which would end at the sea port of Mtwara as the gateway to international trade. The proposed Mtwara-Mbamba Bay Road is intended to provide the backbone transport infrastructure, with cross-border linkages into Malawi and Mozambique respectively via the Mbamba Bay - Nkhata Bay Heavy Capacity Ferry across Lake Nyasa, and Unity Bridge across Ruvuma River.

Mission

To initiate, develop and guide implementation of economically viable projects in partnership with the private sector.

Vision

To harness modern technology and use it to tap the rich endowment of the human, mineral, agriculture and natural reserves of Tanzania for the purpose of creating wealth which will improve the quality of life of Tanzanians and humanity.

(2) Budget

The budget for the Road Maintenance for the current year and the last three years is provided in the Table below:

S.No.	FINANCIAL YEAR	AMOUNT ALLOCATED (TSHS.)
1.	2001/2002	35,000,000,000/=
2.	2002/2003	45,038,000,000/=
3.	2003/2004	45,150,000,000/=
4.	2004/2005	50,000,000,000/=

(3) Staff Members

National Development Corporation (NDC) has a number of engineers, economists, financial analysts, lawyers, etc. working on various development projects. NDC works in close collaboration with the Ministry of Works and TANROADS. Arrangements of staff are also made from TANROADS, Trunk Road department of the Ministry of Works and engagement of required professionals from outside, if needed. Overall supervision will be provided by the Ministry of Works.

11. Background of the request

(1) Background

The Government of the United Republic of Tanzania, through the National Development Corporation (NDC) intends to carry out detailed engineering design for the Masasi – Tunduru road section which is approximately 190km. This road section is part of the Mtwara – Mbamba Bay road which is approximately 817km. The NDC completed a feasibility study of the Mtwara – Mbamba Bay road in April 2004. This study which covers 800km was financed by Kuwait Fund for Arab Economic Development (KFAED) and was done by the TAEP – DIWI JV in association with the Co-architecture, a Tanzanian consulting firm. The proposed Mtwara-Mbamba Bay Road is intended to provide the backbone transport infrastructure, with cross-border linkages into Malawi and Mozambique via the Mbamba Bay - Nkhata Bay Heavy Capacity Ferry across Lake Nyasa, and Unity Bridge across Ruvuma River. The implementation of this project will be carried out under the Mtwara Development Corridor (MtDC) which is a SADC Regional Spatial Development Initiative (SDI) founded on the strategic initiative by Malawi, Mozambique, Tanzania and Zambia to create a multimodel transport corridor which would end at the sea port of Mtwara as the gateway to international trade.

Following the completion of the feasibility study, the next stage is to carry out the detailed design to be followed by construction. Since the road is long, over 800km, it was found that, the detailed design should begin with 190km from Masasi towards Tunduru. Construction of the Masasi – Tunduru road will follow after the detailed design and preparation of the tender documents

have been completed. The road from Mtwara to Masasi (200km) is paved (bitumen) except that there are some road sections (about 7km) including various bridges which were washed away by the torrential rain in April 1990.

Following the presentation of the Mtwara Development Corridor to the Japanese Government officials during their visit to Tanzania in October 2004, the Mtwara – Mbamba Bay road was presented as part of the core infrastructure development project in the corridor. The feasibility study has recommended implementation of the road on a staged basis, based upon priorities of the Government. On this basis, the Government of Tanzania through the NDC requests the JAPANESE GRANT AID to carry out the detailed engineering design and upgrading to bitumen standard of the 190km Masasi – Tunduru road section of the Mtwara – Mbamba Bay road.

The Masasi – Tunduru road section will provide an important link between the two districts of Masasi and Tunduru in the Mtwara and Ruvuma regions respectively.

The three regions (Mtwara, Lindi and Ruvuma), directly served by the project road, are important food and cash crop production areas. The food crops include rice, maize, sorghum, cassava, millet, beans, soyabeans, sweet potatoes, peanuts, tomatoes, etc. The cash crops include cashewnut, coffee, coconut, millet, groundnuts, soyabeans, sun flowers, tobacco, simsim, etc.

The area is also rich in tourism potential which includes the Selous Game Reserve in Tanzania and the Niassa Game Reserve in northern Mozambique, the Nyika and Vwazi – Lundazi Transfrontier Conservation Areas between Malawi and Zambia could be integrated into the adventure trail concept being advanced for the southern highlands of Tanzania. Most of the tourist areas are not reached due to poor infrastructure including road transport. The upgrading to bitumen standard of the Masasi – Tunduru road and ultimately the whole stretch from Mtwara to Mbamba Bay will facilitate transport for the tourists and promote tourism in these potential areas. Detailed informations are provided in the attached proposal.

The area is also rich in mining such as coal, iron ore, titanium and vanadium deposits at Mchuchuma and Liganga, aluminium, gold, graphite, gypsum, hydrocarbons, limestone, marble, mineral sands (ilmenite, rutile and zircon) and uranium.

The road, once upgraded to bitumen standard, will stimulate trade that exits between the MtDC states. Currently, the Informal Cross Border Trade (ICBT) is estimated at approximately US$ 61.8 million amongst MtDC states.

12. **Relation with the government's development plan and other factors.**

(1) Relation with the government's national development plan

Name of the plan : Medium Term Expenditure Framework (MTEF)

Period : from 2003/04 to 2007/08

The position occupied by the requested project/sector in the above – mentioned plan.

In order to have efficient and effective domestic and international transport services, the government priority in allocating its resources will be and have been directed towards the following areas in the MTEF: transport, rural travel and transport, maintenance of improved Trunk and Regional roads.

The project is one of the anchor projects in the Mtwara Development Corridor being promoted by the four SADC countries, namely: Tanzania, Mozambique, Malawi and Zambia.

(2) Relation with the sector comprehensive/overall program.

Name of the plan: Ten Years Road Sector Program

Period **:** from 2000 to 2010

The position occupied by the requested project /sector in the above-mentioned plan.

The Government will implement based on this program, and as a priority the Southern transport to capture SADC integration and regional trade.

13. Objectives (itemize as congrete as possible)

(1) Objectives/ purpose of the project.

The main objective are to provide a reliable transport network, reduce transport costs and travel time which in turn would facilitate economic growth, trade investment, social integration and inter – and intra regional co-operation in Tanzania.

(2) Overall goal/ medium and long-term objectives.

The medium and long term objectives are to stimulate industries in the

Mtwara Development Corridor, an initiative of four SADC countries, namely Tanzania, Mozambique, Malawi and Zambia. Further objectives are to raise the living standard of the people and reduce poverty in the MtDC area which currently is underdeveloped.

14. Outline of the project and request (Itemize as concretely as possible.)

(1) a. Outlines of requested facilities

The site is located between Masasi and Tunduru covering about 190Km. Masasi is a district of Mtwara region and the road project begins at Masasi town which is about 200km from Mtwara port on the Indian Ocean. The road project ends at Tunduru district which is in Ruvuma region

The criteria for selecting the Masasi – Tunduru road for carrying out the detailed design and upgrading to bitumen standard is based on the results of the feasibility study and also on the economical potentials that are available in that area. The road is also a priority road for the Government.

Some of the reasons for recommending the road section are as outlined below:

- The area is very rich in agriculture and upgrading of the road will provide most economical transport route for food and cash crops to the sea port of Mtwara.
- There are beautiful attractions and wildlife for tourism
- The area is rich in mineral resources
- The Masasi – Tunduru road section will facilitate easy connection between the two districts of Masasi and Tunduru.
- The Masasi – Tunduru road section will also provide linkage to Northern Mozambique through the planned Unity Bridge on Ruvuma river.
- The construction of the Dar es Salaam – Mtwara road has gained momentum after commissioning of the Bridge at Rufiji (Mkapa bridge), in August 2003. Commissioning of the Dar es Salaam – Mtwara road is planned by 2006 and by that time, it is expected that the Masasi – Tunduru road section would be undergoing construction.
- It will ultimately provide for regional integration and promote cross border trade.
- The IRR of the Masasi – Tunduru is 15.8% and the NPV is US$ 7.72 million.

b. **Methods to operate, manage and maintain the facilities or equipment, expected number of persons to be secured, together with their technical levels, and prospect to secure necessary budget**

Maintenance of the Trunk road is the responsibility of the TANROADS the road Agency of the Ministry of Works.

c. **Financial sources for management and maintenance after completion of the requested project.**

Fully borne by the government: National Maintenance Budget and Road Fund

2). **Breakdown of total amount of the facilities and equipment and supporting data**

Breakdown of the detailed design cost of the project is shown in Table 1 and the cost breakdown for the construction will be determined after the detailed design is completed. Implementation schedule for the detailed design is shown in Table 2. Implementation schedule for construction work will be worked out after the detailed design work is completed.

(3). **Additional information.**

a. **Existing facilities: Current situations of the existing facilities plans, specification, supporting photographs, materials used, etc.**

The proposed 190km Masasi – Tunduru road section for the detailed design and upgrading to bitumen standard is covered under the link 3.1 of the Mtwara – Mbamba Bay road which has been divided into 15 links based on various factors such as existing traffic, existing surface, etc. Details of the existing links covering the entire road are shown in Table 3:

Table 3: Details of the Links for the Mtwara – Mbamba Bay road

Link No.	From	To	Road Length Km	Existing Pavement Type
1.1	0.000	72.000	72.000	Bitumen
1.2	72.000	82.075	10.075	Bitumen
2.1	Mingoyo junction (Km 82.075)	Makonde (Km 137.160)	55.085	Bitumen
2.2.1	Makonde (Km 137.160)	Makonde (Km 142.340)	5.180	Earth
2.2.2	Makonde Km 42.340)	153.500	11.160	Bitumen
2.2.3	153.500	154.740	1.240	Earth
2.3	154.74	200.293 (Masasi)	45.553	Bitumen
3.1	Masasi	Tunduru	190.000	Earth
4.1	Tunduru	Namtumbo	196.000	Earth
4.2	Namtumbo	Start of By Pass	60.800	Gravel

Table 1

MASASI - TUNDURU ROAD PROJECT

COST ESTIMATES FOR CONSULTANCY SERVICES FOR DETAILED DESIGN

FOR UPGRADING OF MASASI - TUNDURU (190 KM) ROAD TO BITUMEN STANDARD

S/N	ITEM	UNIT	QTY	RATE	AMOUNT US$
	A: PROFESSIONAL INPUTS				
	Project Manager	mm	2	8,000	16,000.00
	Team Leader/ Highway Engineer	mm	6	13,800	82,800.00
	Hydrologist/Drainage Engineer	mm	4	12,600	50,400.00
	Soil/Material engineer	mm	5	12,600	63,000.00
	Bridge/Structural Engineer	mm	4	20,000	80,000.00
	Contracts Expert	mm	2	8,000	16,000.00
	Land Surveyor	mm	4	9,000	36,000.00
	Sub Total	mm	**27**		**344,200.00**
	Support Staff	L.S			58,390.00
					402,590.00
	Perdiem	days	840	150	126,000.00
	Sub Total				**528,590.00**
	OTHER COSTS				
	Air Tickets -International	RT	14	1,600	22,400.00
	Local Transport	Months	12	4,000	48,000.00
	Communication costs; telephone, fax,e-mail etc.	Months	6	1000	6,000.00
	Office Accomodation / Rent of Equipments	Months	6	3000	18,000.00
	Production of Reports -(Draft and Final)	LS			10,000.00
	Sub Total				**104,400.00**
	Topographic Survey	LS			45,000.00
	Material Investigation	LS			228,000.00
	EIA Studies/Ressettlement Action Plan	LS			54,200.00
	Counterpart Staff Training				18,500.00
	Project Implementation Unit				20,000.00
	Sub Total				**365,700.00**
	TOTAL				**998,690.00**
	Contingency 5%				**49,934.50**
	GRAND TOTAL				**1,048,624.50**

Appendix-2 Public Consultation and Social Environment

MASASI District Pre-hearing Attendance List

NO	NAME	POSITION	ORGANISATION
1	ALI RUFUNGA	District commissioner(DC)	Masasi District
2	NOEL N. MAHYENGA	District Executive Director (DED)	Masasi District council
3	MBWAMBO J.	District Natular Resource officer	Masasi District council
4	RODNEY E. NGALAMBA	District game Reserve Officer	Masasi District council
5	PESAMBILI A. ANTONY	Project Manager	Lukwika – Lumesule Game Reserve
6	RICHARD BWIRE	Assistant project manager	Lukwika – Lumesule Game Reserve
7	MR HAVE	District Engineer-works	Masasi District council
8	JOSEPH PENEZA	TANROAD-manager – Masasi –Tunduru	TANROAD
9	MS MALYA	Landuse planning officer	Masasi Town ship Authority
10	AWAZ KISAVO	Administrative secretary	Masasi District
11	MR . SHIGELA	District Land Development officer	Masasi Distric Council
12	KWITIMBA MKULIA	Division officer	Nanyumbu
13	ISSA I. MBAYA	Division officer	Lisekese
14	JOSEPH KAZIBURE	Ward Executive	Likokona
15	HILLARY N. LEMULA	Ward Executive officer	Lisekese
16	HAMIS NAMPALAMALA	Ward Executive officer	Mikangaula
17	ANDREA KASAWALA	Ward Executive officer	Masasi
18	CHIPUTULA R. CHIWAU	Ward Executive officer	Nangomba
19	PETER L. MPEMBU	Ward Executive	Lumesule
20	FRANSIS T. MKUTI	Division officer	Nakopi

21	NDUMBA M. MILLANZI	Village chair person	Kilimanihewa - Mangaka
22	AHMAD YAHAYA	Village chair person	Nangomba
23	ABUNUAS B. AHMAD	Village Executive	Kilimani hewa
24	WALLE P. MLAPONI	Village Executive	Nangomba
25	HASHIMU Y. CHIPANGULA	Village Executive	Mangaka
26	ALFANI M. CHIKWENEMBE	Village Executive	Ndwika II
27	LAIDA H. MILLANZI	Village Executive	Mkapunda
28	MAYASA A. MEMBE	Village Executive	Lumesule
29	RASHID SIMONJE	Village Executive	Chigweje
30	JUMA U. LUDUVA	Village Executive	Msinyasi
31	KASIMU A. MINAPO	Village Executive	Nandembo
32	RASHID NGWANGA	Village Executive	Nangaramo
33	HAMIS ANTONY	Village Executive	Nachihura
34	JOSEPH M.OMARI	Village Executive	Michiga
35	DICKSON P. MWICHAHA	Village Executive	Likokona
36	DESTERIA R. YONASI	Village Executive	Mkomaindo
37	SELEMANI R .EKONI	Village Executive	m/mtapika
38	IMANI AJALIWAYE	Village Executive	kilosa
39	AMOUR A. MASHARUTI	Village Executive	Namatumbusi
40	SELEMANI S. OMARI	Village Executive	Mikangaula

TUNDURU District Pre-hearing Attendance List

NO.	NAME	POSITION	ORGANIZATION
1	A .S MSHAMU	District Executive Director	Tunduru District Council
2	SIGNIFRELD MLOWE	District Adimn Security	Tunduru District
3	D. A KOISHWA	District Game reserve	Tunduru District Council
4	TANTAO A . S TANTAO	Mines Officer	Tunduru District
5	S. A LEOKAMWA	District security Officer	Tunduru District
6	S . Y . MREMA	District Engineers – Works	Tunduru District Council
7	M.M MACHAGGA	District Agriculture and Livestock Development Officer	Tunduru District Council
8	SALEHE HEMEDI	District Land Development Officer	Tunduru District
9	NDAKI STEPHANI	Administrate Officer	Tunduru District
10	HENRY J. MHELELA	District Natural Officer	Tunduru District Council
11	A . SHENDOLWA	District planning Officer	Tunduru District Council
12	MR. NDOMONDO	Game reserve Officer	Tunduru District
13	MAPENDANO R. KASAMBULA	Village Executive Officer (VEO)	Songambele Mtonya
14	CHIWALO M. CHIWALO		Mtonya
15	MOHAMED S. SENJELE	Word Executive Officer (WEO)	Mindu
16	SAIDI ABDALLA	VEO	Namiungo
17	SHAABANI H. OMARI	VEO	Namakambale
18	EDWARD E. MBOCHO	WEO	Nakapanya
19	FADHILI MOHAMEDI	VEO	Mkomela
20	RASHIDI Y. MKULILE	VEO	Nakapanya
21	SHAMSHIA R. TIBEHIKIBWA	VEO	Sauti Moja
22	JOHN G. MWINGIRA	Division Officer	Nakapanya
23	MAISALA KAZEMBE	WEO	East Mlingoti

24	BIBIE I. MANDINYO	VEO	Muhuwesi
25	HAMISI S. NASORO	VEO	Msagula
26	ALI KASISI	VEO	Sisi kwa sisi
27	RASHIDI MAKAJULA	VEO	Muhuwesi
28	MUSTAFA MCHOCHO	VEO	Majimaji
29	JOHNSON J. MATOLA	VEO	Chingulungulu

Project formulation study for Masasi – Tunduru Road upgrading project in the United Republic of Tanzania

Tunduru District pre-hearing meeting 05/August/2005

Answers from participants attended pre hearing meeting at Tunduru are following.

Basic information for project site

1. Organization

- Administration Organization

  Government- United Republic of Tanzania
  Region - Ruvuma
  District - Tunduru
  Ward - Mindu, Nakapanya, East Mlinoti and Muhuwesi.
  Villages - Songambele, Mkowela, Mtonya , Namiungo, Namakambale, Nakapanya, Sauti moja, Msagula, Sisi kwa sisi, Muhuwesi, Maji maji and Chingulungulu

- Community organization along the road includes;
  Mosques warehouses and police post at Nakapanya village office at Sauti moja and Muhuwezi village.

2. Population

- Total population for wards: 52,014 (people along the road)

3. Community/Culture

- Muslim and Christian
- There are cements along the road at Songambele and Mtinya village.
- Tribes – Yao, Makuwa,Ngoni, Makonde.
- Yao and Makuwa are many compared with other tribes.

4. Transport system

- By vehcle (Buses and lorries) price is high. For example from Majimaji (35km) Tunduru the price is Tshs 2000/= instead.
- Historical natural Disaster;
  Flood along the rivers during rain seasons. (Lumesule, Muhuwesi, Namihungo, Majimaji)

5. Agriculture products

- Cassava, vice, maize, cashew nut groundnuts, simsim and regime
- Liver stocks;
  Cattle, sheep goat and chicken
- Major activity is faming

6. Wildlife

- Species which can be seen of ten Mkowela village is Elephant.
  No elephant corridor between Mkowela and Tunduru town.

Other opinions:

1. When the project is started people along the Masasi – Tunduru road should be given priority for employment.

2. Participatory methods should be used in solving any criticism that will occur during the implementation of the project.

3. These should be clear explanation / understanding about the houses and other building that will be affected by the project. (Weather compensation or not).

Project formulation study for Masasi - Tunduru Road upgrading project in united Republic of Tanzania

Masasi District pre hearing meeting 10/8/2005

1. **List of Attendance – Attached.**
A total of 35 participants from Masasi District attended. These includes 18 village executive officers (VEO), 7 Ward Executive officer (WEO),and 3 division officers 2 village chairperson . Other participants were District game reserve project manager and Lukwika- Msanjesi game reserve assistant project. Manager Masasi District Commissioner and Masasi District Administrative secretary were also participated.

2. **Opening of the meeting**
The District Commissioner Mr. Ali Nasoro Fufunga opened the pre hearing meeting at 10:40 am by expressing his appreciation to the Government of JAPAN JICA and JAPAN Engineering consultant Co. Ltd. For their kind support on the Masasi-Tunduru road upgrading project formulation study .

The participants were also given the questionnaire and they were supposed to fill in their opinions and other relevant data to the project (Questionnaire attached .)

3. **Objective of the pre hearing meeting**
To gather the opinion of local stakeholders and avoid any subsequent main criticism based on environmental and social reasons ,

4. **Participants opinion :-**

(i) Participants (VEO from Michiga suggested that the construction should start as soon as possible .This road is very economical to the people of Masasi . Awareness should be created to the people living along Masasi - Tunduru road .

Social Environmental specialist from Japan Engineering Consultant Co. Ltd. Mr Tokunaga and local interpreter Mr. Shaibu explained to the participants that JEC is doing a study to understand analysis and confirmation of current status of the road from Masasi Tunduru following the F/S already undertaken .Detailed design of Masasi – Tunduru road will be formulated .Based on this, the report will be completed and submitted to JICA for further action . We hope that the road construction will begin after the two Governments: JAPAN and United Republic of Tanzania agreed with respect to the reports from JEC on this careful study of the project positioning analysis awareness

to the people living along Masasi – Tunduru road is to be created by village leaders, District leaders and politician .

(ii) **District Land Development Officer** wanted to know on the land acquisition,
Social environmental specialist together and road development specialist from JEC ensured the participants that clear arrangements will be made early through the respective ministries and other responsible bodies in the United Republic of Tanzania to avoid any criticism based on environmental reasons. Various policies will be considered in this study .

(iii) District Commissioner on behalf of the people of Masasi expessed his appreciation to the Government of JAPAN , JICA, and JEC for their willingness to support the upgrading of Masasi - Tunduru road . People of Masasi are hopeful waiting for this project. We beleve that this road will accelerate the economy of our people and hance improve their livelihood .

The participants ensured the JEC social Environmental specialist that people of Masasi will provide any kind of support needed to facilitate the project

(i) **Other opinion and suggestions**
Participants , suggest that people along the Masasi – Tunduru road should be given priority for employment during the road construction

(ii) Participatory methods should be used in solving any problem/criticism that will occur during the implementation of the project .

(iii) Nanyumbu division officer suggested that trustful people should be employed by the company that will be constructing the road . This to avoid any thief of properties of the Company .

Appendix-3 References and Collected Data

31st August 2005

Director	Accession Date in Library

List of References

		Project ID		Study Team ID	- - -		
Region	Africa	Project Name	Project Formulation Study for Masasi – Tunduru Road Upgrading Project in the United Republic of Tanzania	Category of Project	Project Formulation Study	Organization in Charge	East Africa Team
Country Name	Tanzania	Counter Part Organization	TANROADS, Ministry of Works(MOW), National Development Corporation(NDC)	Study Period	16th July, 2005 - 29th August, 2005	Personnel in Charge	Eita NARITA

No.	Name of Documents	Orig. / Copy	Type	Organization of Publication	Published
Project Application Form, Mtwara Development Corridor					
R-1	Proposal for Japanese Grant Aid for The Detailed Design and Upgrading to Bitumen Standard of the 190km Masasi- Tundul Road Section	Copy	With Letter	National Development Corporation (NDC)	2004. Nov.
R-2	SDI Concept			Embassy of Japan	
R-3	Summary of discussions between the president's office, planning and privatization (POPP)(NEPAD CO-ORDINATORS in Tanzania) and the development bank of southern Africa – partnership unit (DBSA-APU)	Copy	Record	NEPAD	
R-4	Proposal for Feasibility Study for Heavy Capacity Ferry Linking Nkhata Bay and Mbamba Bay(Feasibility Study)	Copy		NDC	2004. Dec.
R-5	Mtwara Development Corridor Feasibility Study of the Proposed Unity Bridge on the Ruvuma River（Ruvuma River Unity Bridge Feasibility Study）	Copy		NDC	2004. Nov.
R-6	Mtwara Development Corridor Progress and Status Report	Copy		NDC	2005. Feb.
R-7	Summary of Project for Promotion under NEPAD			President's office Planning and Privatization	2004. May
R-8	MTWARA-MBAMBA BAY ROAD (F/S: September 2003 Structural Condition Survey Report）	Copy		NDC	2003.Sep
R-9	MTWARA-MBAMBA BAY ROAD (F/S: September 2003 Structural Condition Survey Report-Appendix A）	Copy		NDC	2003.Sep
R-10	MTWARA-MBAMBA BAY ROAD (F/S: September 2003 Structural Condition Survey Report-Appendix B）	Copy		NDC	2003.Sep
R-11	MTWARA-MBAMBA BAY ROAD (F/S: September 2003 Volume1-Materials Investigation Report and Appendix '1' to'4'）	Copy		NDC	2003.Sep
R-12	MTWARA-MBAMBA BAY ROAD (F/S: September 2003 Volume2-Materials Investigation Report and Appendix '5.1' to'5.3'）	Copy		NDC	2003.Sep
R-13	MTWARA-MBAMBA BAY ROAD (F/S: September 2003 Volume3-Materials Investigation Report and Appendix '5.4' to'5.7'）	Copy		NDC	2003.Sep
R-14	MTWARA-MBAMBA BAY ROAD (F/S: March 2003 Final Environmental Impact Assessment Report）	Copy		NDC	2004.Feb
R-15	MTWARA-MBAMBA BAY ROAD (F/S: March 2003 Final Feasibility	Copy		NDC	2004. March

No.	Name of Documents	Orig. / Copy	Type	Organization of Publication	Published
	Report Volume1-Main Report）				
R-16	MTWARA-MBAMBA BAY ROAD (F/S: March 2003 Final Feasibility Report Volume2-Annexes）	Copy		NDC	2004. March
R-17	MTWARA-MBAMBA BAY ROAD (F/S: March 2003 Final Feasibility Report Executive Summary）	Copy		NDC	2004. March
R-18	MTWARA REGION INVESTORS' FORUM Investment Opportunities in Mtwara Region	Copy		NDC	2004.
R-19	Profiles of Investment Opportunities, Projects and Development Programmers in t he MTWARA Development Corridor in TANZANIA	Copy		NDC	2005. March
R-20	Project Profiles	Copy		NDC	1998. June
R-21	Status Report of LIGANGA Vanadium, Titanium and Iron Ore Mine Project	Copy		NDC	2003. Nov
R-22	Profiles of Investment Opportunities, Projects and Development Programmes in the MTWARA Development Corridor in TANZANIA Economic Development Generators	Copy		NDC	2005. March
R-23	MCHUCHUMA Coal to Electricity Project Preliminary Project Information Memorandum	Copy		NDC	2005. March
R-24	Brief Profile of MCHUCHUMA Coal to Electricity Project	Copy		NDC	-
R-25	A Conceptual Overview of the “Anchor Projects” Supporting the “Business Case” for the Development of the MTWARA Development Corridor	Copy		NDC	2005
R-26	Consultancy Services for the Pre-design and Supervision of the Unity-Bridge Across Rovuma River at Mtambaswala / Negomane Environmental and Social Impact Assessment Report	Copy		Norconsult	2005 July
R-27	Consultancy Services for the Pre-design and Supervision of the Unity-Bridge Across Rovuma River at Mtambaswala / Negomane Engineering Investigations Report	Copy		Norconsult	2005 July
R-28	The Republic of Mozambique and the United Republic of TANZANIA the Unity Bridge Across Rovuma River	Copy		Norconsult	2005 August
R-29	SELOUS Africa's largest & widest game reserve	Orig		Selous Conservation Programme GTZ/East African Movies, Dar es Salaam, Tanzania	1999 July
R-30	Creating New Wealth in Southern Africa	Orig		Regional SDI Support Programme	2003.Dec
R-31	TANZANIA HARBOURS AUTHORITY Ports Handbook	Orig		TANZANIA HARBOURS AUTHORITY	2004.May
R-32	Review of the ROADS FUND BOARD: Performance in Rords Maintenance Financing (2000-2005)	Copy		THE RORDS FUND BOARD	2005.June
R-33	The Updated Ten Year Road Sector Development Programme (2001/02-2010/11) Proposed Programme for Seond Phase (2006/07-2010/11)	Copy		MOW (The United Republic of TANZANIA Ministry of Works)	2005.June
R-34	TANRORDS Strategic Plan for 2003/04 to 2007/08	Copy		TANROADS (Tanzania National Roads Agency)	-
R-35	Project Proposal Submitted to the Government of the United Republic of TANZANIA for the Development of a 400MW Coal-Fired Power Station	Copy		-	2000.June

No.	Name of Documents	Orig. / Copy	Type	Organization of Publication	Published
	at MCHUCHUMA, the MCHUCHUMA-KATEWAKA Coal Mine, the Power Transmission System and the Associated Township Allied Infrastructure and Access Roads-Executive Summary				
R-36	Agreement Between the Republic of MALAWI, the Republic of MOZANBIQUE, the United Republic of TANZANIA and the Republic of ZAMBIA on the MTWARA Development Corridor	Copy		MALAWI, MOZANBIQUE, TANZANIA, ZAMBIA	2004.Dec
R-37	AGREEMENT OF INTENT Between THE GOVERNMENT OF TANZANIA and THE NATIONAL DEVELOPMENT CORPORATION and SIEMENS LIMITED and CINERGY GLOBAL POWER INC. and GRINAKER-LTA LIMITED for the Development of a 400MW Coal-Fired Power Station at MCHUCHUMA, the MUCHUCHUMA-KATEWAKA Coal Mine, the Power Transmission System, and the Associated Township Allied Infrastructure and Access Rords	Copy		The Government of TANZANIA	2001.July
R-38	Mtwara Development Corridor Fact Finding Study Report	Copy		JICA Tanzania Office	2005 May
R-39	Southern Area of Tanzania Report	Copy		Embassy of Japan	2004 July
Other					
A-1	National Strategy for Growth and Reduction of Poverty (NSGRP)				2005.April
A-2	Profiles of Investment Opportunities, Project and Development Programs in the MTWARA Development Corridor in Tanzania – Economic Service Infrastructure Project – 2004 March			NDC	2004, March
A-3	District Profile	Copy		Tunduru District Council	-
A-4	PROJECT FPRMULATION STUDY MISSION ON MASAI-TUNDURU ROAD UPGRADING PROJECT　QUESTIONAIRE RESPONSES	Copy		TRUNK ROADS	August, 2005
Environmental and Social Consideration					
E-1	－Proposal for Japan Grant Aid for The Detailed Design and Upgrading to Bitumen Standard of the 190km Masashi- Tunduru Road Section (Screening Form with Application Form for Grant Aid) －Technical Review Committee comments on the draft environment impact assessment report for Mtwara – Mbamba Bay Road（NEMC's Comments for EIA, and TOR for EIA Finalization）		Screening form Letter	National Development Corporation	2004. Nov.
E-2	Selous – Niassa Transboundary wildlife corridor	Copy		Prepared NDC	After 2003
E-3	The Environmental Management Act, 2004	Copy			2004.Nov.
E-4	Environmental Assessment and Management Guidelines for Road Sector	Copy		MOW in association with DANIDA	2004.Dec.
E-5	Tanzania Environmental Impact Assessment Procedure and Guidelines Revised March	Copy		NEMC	2002. March
E-6	The Development and Management of the Selous-Niassa Wildlife Corridor in Tanzania			Ministry of Natural Resources and Tourism, Wildlife Department, GTZ,UNDP, GEF	
E-7	The Selous-Niassa Wildlife Corridor（2003）			GTZ	2003
E-8	Employment and Earnings Survey2001	Copy		National Bureau of Statistics TANZANIA	2001
E-9	National Strategy for Growth and Reduction of Poverty (NSGRP)	Copy		Vice President's Office	2005.June

No.	Name of Documents	Orig. / Copy	Type	Organization of Publication	Published
E-10	Visitor's Map of the SELOUS GAME RESERVE North of the Rufiji	Original			
E-1 1	The Socio-Economic Profile and Potentials in MTWARA Region	Copy		Regional Commissioner's Office	2004.Oct
E-12	The Economic Survey 2004	Copy		The President's Office-Planning and Preparation	2005.June
E-13	<Tables> Table:17: Regional GDP at Current Prices Table:18: Regional GDP at Current Prices Table:19: Regional Per Capita GDP at Current Prices	Copy		MOW	-
E-14	Literature Survey for Environmental Consideration on the MASASI-TUNDURU Road Upgrading Project in the United Republic of TANZANIA	Copy		J. KABIGUMILA Department of Zoology and Wildlife Conservation University of Dar Es Salaam	2005.August
E-15	The United Republic of TANZANIA, President's Office, Region Administration and Local Government, MASASI District Council, District Profile	Copy		MASASI District Council	2004
E-16	Distribution and Movements of Elephants and Other Wildlife in the Selous-Niassa Wilslife Corridor, Tanzania	Orig		Deutsche Gesellschaft fur Technische Zusammenarbeit (GTZ)GmbH	2004
Regulation, Law and Legislation					
L-1	The Land Acquisition Act,1967 Act No.47 of 1967	Copy		The United Republic of TANZANIA	1967
L-2	The Highways Ordinance-6th January,1967	Copy		The United Republic of TANZANIA	1966.Dec
L-3	The Value Added Tax Act	Copy		MOW	-
L-4	The Village Land Act, 1999	Copy		-	-
L-5	The Land Act, 1999	Copy		-	-

Appendix-4　Questionnaire from Japan to Tanzania

Appendix 1. Required Issues and Questionnaire

Please provide us with the following information on the road or environmental sector in written form and with supporting materials by middle of August.

1. Administration and Policy

Category	Item
Central Government	Organization chart (All Ministries and relevant organizations)
	Current budget and past expenditure for 3years
	Mtwara Development Corridor Plan (MtDC) and its related plan - Other F/S Report related Mtwara Development Corridor
	10 Years Road Development Plan
	Recipient organization of foreign aid
Ministry of Industry and Trade, National Development Corporation, Ministry of Works,	Organization chart and number of personnel by category and department
	Present budget and past 5 years expenditures by category
	Functional demarcation on the project implementation

2. Transport Sector

Category	Item
Road Network	National road map by category
	National road map by surface condition
	Project target road map
Public Transport	Main bus terminals on the Project Target Road
	Bus route map on the Project Target Road
	Statistic data of public transport on the Project Target Road
Water Transport at Mtwara and Mamba bay	Main ports
	Route map of vessel and ferry (Mbamba Bay in the Lake Niassa)
	Statistic data of water transport
Air Transport along the Mtwara	Main airport and air strip map
	Airline route map
	Statistic data of air transport
Railway	Map of rail road network
	Statistic data of rail road

3. Road Traffic

Category	Item
Vehicle Ownership	Number of vehicles registered by category for the last 10 years in 2 regions (Mtwara and Ruvuma) and all nation
Traffic Data	Traffic volume by category on trunk road for the last 5 years, especially on the Project Target Road
	Result of origin-destination survey on the Project Target Road
Law	Law and regulation on traffic
Traffic Accident	Traffic accident data on the Project Target Road

4. Road and Bridge

Category	Item
National/Regional Road Development Plan	10 years Road Development Plan (10YRDP)
	Integrated Road Program II (IRP2)
Existing Bridges (refer to attached "Bridge Inventory")	***Detailed road map in scale of 1:50,000***
	List of all bridges along the Project Target Road with station number
	List of all rivers and creeks along the Project Target Road
	As-built drawings and related design reports of the Project Target Bridges
	Topographic data, including air photograph or satellite photograph
	Bench mark network (Control survey data)
	Geotechnical data
	Hydraulic data
	River improvement plans or studies
	Records of damages of bridges due to natural disaster such as flood
Maintenance	Records of bridge repairs or rehabilitations
	Organization chart, number of staff and budget for the maintenance of roads and bridges
Design Criteria	Design criteria, standard and guidelines of road and bridge of the related projects under AfDB, Kwait Bank
Construction Ability and Unit Cost	List of available equipments, facilities and materials for construction of roads and bridges
	Unit construction cost analysis of roads and bridges on existed/on-going road development projects

5. Environmental and Social Considerations

Category	Item
Environmental Impact Assessment	National Environmental Action Plan
	Environmental guidelines (MOW) by Digital data
	Environmental report concerning Project Target Road
Land or Forest Law	Land acquisition law
	Is there any reserve forest around the project area?
	Is there any area of fisheries rights around the project area?
	Is there any area with Water Rights around the project target area
Environmental Data	Endangered species list made by the Tanzania government
	What lists do you adopt to consider endangered species for EIA? (☐ Red data list by IUCN*1, ☐ CITES – listed species*2) *1 IUCN : International Union for Conservation of Nature and Natural Resources *2 CITES : Convention on International Trade on Endangered Species of Wild Fauna and Flora Listed Species
	National park, Game reserve area and forest reserve map
	Vegetation map
	Land use map
	Environmental survey report in the project area (fauna, flora, water quality or Environmental state report) ***Especially documents and reports regarding Selous GR, Niassa GR and Selous – Niassa Wildlife Corridor by GTZ or WWF***

Category	Item
	Rain fall data in the project area Monthly rain fall for the past 5 years and annual rain fall for the past 10 years
	Stream flow data of rivers in the Project Target Area
	Cultural heritage map
	Latest "Tanzania's national atlas"

6. General information

Please provide the following information on general issues in written form and with supporting materials.

Category	Item
Socio Economic Data	Gross domestic product by region
	Amount of import and export by product and gate by region
	Main agricultural, mineral and industrial production by region
	Inflation rate
	Employment data by region
	Result of household survey by region
	Data on tourism by region/game reserve
Other	Tax, duty and custom
	Forest, mining development, water laws
	Land ownership and land acquisition plan on the Project Target Road

These are all our questions.

We would like to undertake a next step analysis based on your answers to this questionnaire. We would appreciate very sincerely your collaboration in replying to us as soon as possible.

*Especially documents or maps with **bold font** are required for site-survey, please collect before first meeting in 18th July.*

We sincerely thank you for your kindest and most generous cooperation and support.

JICA STUDY TEAM of Masasi-Tundul Road Upgrading Project

Consultant Team Leader Hisashi MUTO / Japan Engineering Consultants CO., LTD.

Appendix-5 TOR regarding EIA Finalization

NATIONAL ENVIRONMENT MANAGEMENT COUNCIL (NEMC)

BARAZA LA TAIFA LA HIFADHI NA USIMAMIZI WA MAZINGIRA

Telegrams: MAZINGIRA DAR ES SALAAM
E-Mail address: nemc@simbanet.net
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Phone:255 (022) 2134603
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Tancot House (3rd floor),
Sokoine Drive,
P.O Box 63154,
DAR ES SALAAM,
TANZANIA.

NATIONAL DEVELOPMENT CORPORATION
RECEIVED
27 JAN 2004
P. O. Box 2669
DAR-ES-SALAAM

In reply please quote:

Ref.....NEMC/329/1/Vol. II

Date.....24/1/2004...

Managing Director
National Development Corporation
P. O. Box 2669
Dar es Salaam

RE: TRC COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR MTWARA – MBAMBA BAY ROAD

It is our pleasure to inform you that, the council coordinated a cross-sectoral Technical Review Committee (TRC) meeting that reviewed the above report on 19th December 2003. The review committee congratulates your good office and the consultant for the work done.

The fact that the report was written in the absence of a Detailed Road Design, made the EIA document contain information that need to be actuated and focused.

We are therefore pleased to advise your office to observe the following.

- Incorporate all the attached comments during the finalization of Detailed Road Design.
- The contractor should prepare his own Environmental Management Plan that will be reviewed and approved by NEMC before starting the construction work. The cost of implementing his management plan should be part of the contractor's budget.
- Kindly please submit to NEMC 15 copies of final EIA report, 2 copies of Feasibility Study, 5 copies of contractor's Environmental Management Plan and 2 copies of Detailed Road Design.

Please contact us if you need more information or help.

Thank you for corporation;

G. U.J. Mwamsojo
For Director General

COMMENTS OF THE TECHNICAL REVIEW COMMITTEE ON THE DRAFT EIA REPORT FOR THE PROPOSED CONSTRUCTION OF MTWARA - MBAMBABAY ROAD

1.0 Introduction:

The Government of Tanzania through National Development Corporation (NDC), is proposing to construct an 840km long all-weather road in Southern Tanzania from Mtwara port to Mbamba Bay port along the existing route. The road is an integral part of the Mtwara Development Corridor (MtDC).

The proposed road will provide a link between Tanzania, Malawi and Mozambique and will facilitate traffic movement within the corridor and external markets to trade, tourism and other development activities.

During the construction phase of the road, the major site activities will include: bush clearing, haulage of material, embankment formation, construction of both lateral and longitudinal drainage facilities; culverts/bridges and other structures, the construction of layer works and bituminous surfacing.

The area is a mountainous region, sloping down to Mtwara on the coast. The existing road is surfaced with bituminous from Mtwara to Masasi. From Masasi to Mbamba Bay the road is earth dressed and in variable conditions as it traverses the mountains. Some sections are heavily affected by the weather, sometimes becoming impassable during the wet season.

The National Development Cooperation (NDC) commissioned the Resource Planning and Management (pty) Ltd firm of Botswana to conduct full Environmental Impact Assessment for the proposed road project.

During impact assessment the road was subdivided into four portions as shown below

(i)	Mtwara	-	Masasi	- 203 km
(ii)	Masasi	-	Tunduru	- 197 km
(iii)	Tunduru	-	Songea	- 272 km
(iv)	Songea	-	Mbamba Bay	- 168 km.

On 10th November 2003 NDC submitted 15 copies of the draft EIA report to NEMC for review by a Multi-sectoral Technical Review Committee (TRC) and provide comments for improving the report. The TRC reviewed the document on 19th December 2003 and made the following remarks:

2.0 General Observations

The report sets a very good general framework for detailed and more focused EIA study and highlights on the necessary requirements for comprehensive EIA. It is well presented and is easily readable. However it is missing some of the information that would be useful in decision-making. The following are remarks of the technical Review Committee on the current document.

O Relevant Items
Masasi:-Tunduru
(By JEC)

- The identified impacts are too general and do not focus on specific activities of the project
- The document does not provide baseline information on environmental characteristics (Physical, Biological, Socio-economic and social-cultural) of areas earmarked for re-alignment and diversions away from Tunduru and Songea towns.
- Reasons for the suggested diversion of the road away from Tunduru and Songea are not provided. This creates many questions among the local communities who would like to see the road passing closer to them.
- The document does not provide comprehensive information on the hydrology of the area. This information is very important in road projects.
- The document does not provide comprehensive information on the hydrology of the area. This information is very important in road projects.
- The report lacks a comprehensive environmental monitoring plan.
- Information on the current status (Bench mark) of parameters that need future monitoring is not adequate.
- The EMP is very short and does not provide enough guidance for implementation.
- The review of institutional arrangement, roles, legislative and policy framework related to the proposed project is lacking.
  - The provided list is not correct and some of the institutions do not exist in Tanzania.
  - Names of some of the Ministries and Acts are wrongly presented.
  - Some of the policies and Acts have no relevance to the proposed road project.
- The institutional arrangement for future management of the proposed road is not indicated in the document.
- Although the EIA report indicates that consultation was limited to District officials along the proposed route, the report lacks supporting evidence.
- Local communities along the route, Lindi Secretariat, Mtwara District officials, Department of Antiquities, Department of Culture and other affected and interested parties were not consulted.
- The road design, compensation lot, resettlement and project disclosure plans are missing in the document.
- The Executive Summary is unnecessarily too long and does not highlight the major findings of the EIA, mitigation measures and monitoring plan.
- The Terms of Reference (ToR) used to prepare this EIA report (appendix 1) do not match with generic guidance provided in vol. 3 of National EIA Guide: *Note that these are different from those provided by NDC.*
- Types and amount of materials (products and by products including liquids and solid wastes) that will be used and generated during construction or operation and related impacts are not explained in the report.
- The report is not clear on the real impacts associated with the expansion of the proposed road at Mikindani cultural site.
- The report is silent on the potential impacts associated with relocation of grave yards
- The location of the wildlife migratory corridor between Selous, Msanjesi, Lukwika and Lumesule Game Reserves is not marked.

- The document is silent about the failure of urban/town planners to interpret road width according to TANROAD standards especially in urban and other surveyed areas.
- The document is silent about the presence of utilities like water pipes, drinking water well pumping station at Ngomba and survey benchmarks (STPs) within the road reserve area in urban centers and the potential impacts that might be associated with expansion of the road.
- Fear of potential increase in the exploitation of Natural Resources mainly forestry products and pressure on existing social services has not been highlighted in the document
- The document is silent on issues related to unregulated mining by artisanal miners along the route of the proposed road
- The concern of Mbamba Bay residents that pressure and demand for more land may have serious social impact has not been analyzed in the document.

3.0 General Recommendations

- The report should be focused and specific to real impacts associated with the planed activities
- Provide reasons for the suggested diversion of the road away from Tunduru and Songea to support the idea
- Provide baseline information on environmental characteristics (Physical, Biological, Soci-economic and Social-cultural) and potential social and environmental advantages and impacts associated with road diversion away from Tunduru and Songea towns.
- Provide comprehensive information on the hydrology of the area where the road passes (especially Chipite and other areas that are prone to floods). This information is very important in road projects to avoid damming.
- Provide a comprehensive environmental monitoring plan including budget, monitoring parameters, monitoring frequency, responsible institutions and information on current status of parameters that need future monitoring along the entire route.
- Address problems that are likely to occur as a result of unregulated mining activities along the proposed road
- Provided a detailed Environmental Management Plan with enough guidance indicating management issues and institutional arrangement for implementation.
- Conduct a review of exiting institutional arrangement, roles, legislative and policy framework related to the proposed project.
  - Make sure that all the listed institutions are relevant and exist in Tanzania.
  - Names of Ministries and Acts should be correctly presented.
  - Only policies and Acts that are relevant to the proposed road project should be reviewed.
- Conduct consultation with local communities along the route, Lindi Secretariat, Mtwara District officials, Department of Antiquities, Department of Culture and other affected and interested parties and attach signed list of consulted individuals.
- Prepare project disclosure indicating compensation lot and resettlement plan
- Refine the Executive Summary to highlight major findings of the EIA

- Consult vol. 3 of the National EIA Guidelines and procedures for generic guidance on Terms of Reference (ToR) for EIA.
- Explain types and amount of materials (products and by-products including liquids and solid wastes) that will be used and generated during construction or operation of the proposed road and the associated environmental impacts.
- Clarify on the real impacts that are likely to be associated with the expansion of the proposed road at Mikindani cultural site and suggest mitigation measures (Consult Departments of Antiquities and Culture in Dar es Salaam for more help).
- Identify potential impacts associated with relocation of graveyards and provide mitigation measures (Consultation with local leadership and early awareness program may help).
- Demarcate the actual location of wildlife migratory route from/to Selous, Msanjesi, Lukwika and Lumesule Game Reserves (Consultation with Wildlife Division, GTZ, Local Authority of Masasi District and WWF will be helpful)
- Address consequences of failure of urban/town planners to interpret road width according to TANROAD standards especially in urban and other surveyed areas and identify potential conflicts that may arise during resettlement.
- Conduct an assessment of impacts that are likely to occur as a result of presence of utilities like water pipes, drinking water well pumping station at Ngomba and survey benchmarks (STPs) within the road reserve in urban centers of Mtwara, Mingoyo, Ndanda, Masasi, Mbinga, Namtumbo, Mbamba Bay and others.
- Consider potential increase in the exploitation of Natural Resources mainly forestry products as a result of road improvement.
- Consider potential increase in pressures on existing social services including port services at Mtwara and Mbamba Bay.
- Consider increase in pressure and demand for more land at Mbamba Bay as an important concern of Mbamba Bay residents.

4.0 Specific Observations

The following observations are not exhaustive. Only few are provided with a hope that the consultant will rectify even those not shown in this list.

- Unfortunately the Map of Tanzania is wrongly done; it shows that the boundary between Malawi and Tanzania is on the shores of Lake Nyasa.
- The consultant adopted the name Lake Malawi instead of Lake Nyasa which is used in Tanzania
- Impacts are not arranged according to phases at which they are likely to happen
- The document is missing acknowledgement
- List of tables and figures is missing
- A number of abbreviations is missing in the list
- NEBA – National Environmental Policy Act does not exist in Tanzania.
- Last sentence Section ES. 1.5.1; shows that at the time of preparing the document environmental legislation had been passed in Tanzania
- Pg 76 – the GN 375/89 is wrong, should read GN 176 of 1992.
- The cover page does not clearly show the ownership of the document

5.0 Specific Recommendations

- Re-design the cover page to show that the project document is owned by United Republic of Tanzania and NDC co-ordinated the EIA study
- Correct the map of Tanzania to show that the boundary between Malawi and Tanzania is at the middle of Lake Nyasa. This is very important and has political repercussions.
- Use the name Lake Nyasa which is used in Tanzania and not Lake Malawi
- Categorize Impacts according to phases at which they are likely to happen
- Provide acknowledgement
- Provide list of tables and figures
- Correct list of abbreviations to include the missing ones
- Remove NEBA – National Environmental Policy Act this does not exist in Tanzania.
- Recast last sentence of section ES. 1.5.1 to indicate that environmental legislation in Tanzania is still under preparation.
- Pg 76 – the N 375/89 should read GN 176 of 1992.
- Some of the references are not cited in the text
- Carefully write scientific names and italicize

6.0 Additional Suggestions

- The Town and District Authorities should prepare maps showing the network of water pipes and surveys plans and make them available to the road designer and the contractor.
- The Ministry of Transport and Communication should plan for expansion of services at Mtwara and Mbamba Bay ports.
- The compensation for properties should be accompanied by resettlement plan. Town, District and village authorities should set aside land for the affected people.
- Proper conservation program of Makonde plateau should be initiated to control effects of flooding and mudflow at Chipite flood plain
- Masasi Authority suggested that if borrow pits will be located in strategic points will be helpful as water storage pans. Education on problems and advantages of borrow pits and its management should be given to Masasi community if borrow pits will be left to serve as water storage pans
- Masasi Township authority also suggested that compensation for houses should be done in terms of material instead of money. If the government will accept to provide building material instead of money (for demolished house), then the district authorities in collaboration with house owners should work out the appropriate logistics.
- Contractors and local authorities should harmoniously introduce health education to workers and local communities respectively.
- Information and knowledge on all issues associated with the planned road construction should be communicated to the people early to enable the community get prepared and solve much of the problems locally and in advance.
- Natural resources management plans should be prepared by respective District or village authorities to regulate exploitation and avoid destruction including poaching of animals in the migratory corridors (District Authorities in collaboration with Wildlife division may prepare appropriate mechanism of doing it).
- The Local authorities should start working out plans of expanding the existing social services to accommodate the anticipated increase in pressure.

- The village authority of Mbamba Bay should set aside land for future demand. Land use plan should be prepared to accommodate new challenges like expansion of settlement and demand for office-space and cargo storage facilities.
- A jetty and mooring buoy should be constructed at Mbamba Bay port to facilitate boat anchorage, embankment and dis-embankment of passengers and cargo from ships
- Construct erosion protective structures along the edges of the road in the Livingstone escarpment (rim of rift valley on the edge of Lake Nyasa)
- Consult MoW for draft EIA Guidelines for Road Sector in Tanzania
- Consult World Bank and USAID Environmental Safeguard Principles for additional help. Note: where the specification of USAID/World Bank guides differs from those of Tanzania, please use Tanzania standards.

DETAILED DESIGN FOR THE MASASI – TUNDURU ROAD SECTION

TERMS OF REFERENCE (TOR) FOR EIA

1.0 OBJECTIVE

The objective of commissioning the consultancy is to carry out a detailed EIA, including detailed Environmental Management Plan and Monitoring Plan of the proposed road section. The ultimate aim is to incorporate all environmental concerns in the road design so as to ensure environmental sustainability during construction and operation.

2.0 EIA REQUIREMENT

In carrying out the EIA, the consultant shall follow guidelines of the National Environment Management Council (NEMC) of Tanzania and guidelines of financing agency/World Bank. Where guidelines of the financing agency/World Bank differ from NEMC guidelines, the consultant shall use NEMC guidelines.

3.0 SCOPE OF WORK

3.1 Description of the Project

The consultant shall specify the boundaries of the study area, including the length of the road section and width of the road corridor for the impact assessment. The consultant shall provide a brief description of the project, using maps at appropriate scale and including the following information: technical description of the road works, sources of materials to be used during the proposed road works, generation and disposal of waste, indication of need of any resettlement and/or compensation, expected traffic volume; pre-construction, construction and operation activities; work schedule; staffing facilities and services; life span, local STD and HIV/AIDS facilities and capacity, National HIV/AIDS programme, and any other relevant information.

3.2 Policy, Legal and Administrative Framework

The consultant shall review the pertinent policies, regulations, standards and administrative relevant to the proposed project. The following and any other relevant legislation shall be reviewed:

- National Environmental Policy
- Environmental Impact Assessment Guidelines and Procedures 1997
- Local Government Reform Programme
- Tanzania Wildlife Policy
- Land Act 1999
- Village Land Act 1999
- National Water Policy 2001
- Highway Ordinance, Cap. 1967
- National Forests Policy

- Mining Act

3.3 Description of the Environmental Setting (Baseline Environmental Data and Information)

The consultant shall review existing baseline data and information and shall assess adequacy of the existing data and information and collect more data to fill the gap, if any, on the following environmental elements:

3.3.1 Physical Elements

Location, Geology, topography, soils, climate, air quality, drainage patterns, surface water, ground water, water quality, soil erosion.

3.3.2 Biological Elements

Flora and fauna, habitats, rare and endangered species, protected areas that may exist in the area of influence of the road, trends in flora and fauna, including aquatic ecosystem.

3.3.3 Socio-economic Elements

- Geographical area of influence of the road project;
- The socio-economic profile of the Project Affected People;
- Administrative structures in the area of influence;
- Road network and usage;
- Existing land uses and future land plans;
- Land tenure regimes;
- STD and HIV/AIDS area status, existing HIV/AIDS programme, if any, etc;
- Any other relevant data/information.

3.3.4 Cultural Elements

Archaeological, historical, spiritual and cultural features.

3.4 Consultation and Community Involvement

Experience shows that if communities and other project affected people are not adequately consulted and sensitized motivated, there is a tendency of not providing enough cooperation during project implementation.

In this connection, the consultant shall, identify different groups of stakeholders, including: Regional Secretariats, District Management Teams, Village Governments, NGOs, disadvantaged groups (eg. elderly, children, women, disabled, etc.) and use the most appropriate method to establish their views regarding the proposed road project.

Minutes of the meetings, with names and signatures, should be recorded for submission as part of the project report.

3.5 Identification, Analysis and Assessment of Potential Impacts

The consultant shall identify, analyse and assess environmental impacts of the proposed road works on the following:

3.5.1 Impacts on the Biophysical Environment

- Soil degradation and erosion
- Vegetation loss
- Streams and river sedimentation
- Noise nuisance and air pollution
- Changes to drainage patterns
- Pollution of soil and waterways
- Hydrology
- Determine types and amount of materials (product and by product including liquids and solid wastes) that will be used and generated during construction and operation and related environmental impacts;

3.5.2 Impacts on Human Environment

- Loss of agricultural and residential lands
- Identify all names and physical addresses of people to be compensated and relocated. This shall be done in consultation with the concerned District and Village Authorities
- Destruction of utilities like water pipes, drinking water wells and survey benchmarks within the road reserve in urban areas
- Unplanned involuntary settlements
- Social disruption
- Interference with movement of livestock and local residents
- Traffic accidents
- Noise and dust nuisance
- Cultural and historical sites, graveyards, spiritual places
- Potential increase in exploitation of natural resources mainly forestry products as a result of road improvement
- Increase in pressure on existing services
- Demographic changes
- Health effects (including STD, HIV/AIDS)

The environmental impacts shall be analysed in terms of the following characteristics

- Positive (beneficial) and negative (adverse)
- Direct, indirect, cumulative
- Magnitude
- Spatial coverage
- Stages of the project at which they occur
- Duration intermittent, continuous, short term and long term)
- Reversibility, irreversibility
- Likelihood of occurrence

Wherever possible, the impacts shall be quantified in monetary terms. The consultant shall use existing by-laws, national and international environmental standards, legislation, treaties and conventions that may affect the significance of identified

impacts. The consultant shall use the most up to date methods of analysing the impacts and all uncertainties concerning the impacts shall be indicated.

3.5.3 Analysis of Alternatives

The consultant shall analyse alternative road alignments and compare their impacts. In comparing the impacts of scenarios, the consultant shall include aspects such as:

- Capital and operating costs
- Costs of mitigation measures for adverse impacts
- Suitability under local conditions
- Institutional and training requirements
- Methods used

3.5.4 Mitigation Measures and Detailed Environmental Management Plan

The consultant shall recommend feasible and cost-effective mitigation measures to prevent or reduce all identified significant socio-economic and bio-physical negative impacts during construction and operational phases to acceptable levels and enhance positive impacts.

The consultant shall also prepare a Resettlement Action Plan (RAP). In preparing the RAP, the consultant should make reference to the existing Resettlement Policy Framework within the Guidelines for Environmental Management, Design and Implementation of Transport Projects (December 2000), Land Acquisition Act 2000, Village Land Act 1999, Highway Ordinance 1967, and other relevant laws, regulations. The Consultants shall work out total compensation lot of the Project Affected People, including its breakdown by name. On HIV/AIDS, the consultant shall prepare HIV/AIDS awareness programme, which should fit into the existing HIV/AIDS programme in the project area, if any.

Based on the recommended Mitigation Measures, the Consultant shall prepare a detailed EMP, to implement the Mitigation Measures.

3.5.5 Detailed Monitoring Plan

The consultant shall prepare a detailed monitoring plan to monitor the implementation of mitigation measures during construction and operation phases. Include in the plan an estimate of capital and operating costs and any other required input to effectively implement the monitoring plan. In the monitoring programme, the consultant shall include what factors need to be monitored during the construction and operation phases, parameters, frequency of checks, duration of monitoring, costs involved and assign responsibility to various stakeholders.

3.5.6 Institutional Requirements to Implement EMP

The consultant shall review existing institutional set-up and recommend a framework for institutional arrangement to effectively implement the EMP. The consultant shall assign responsibilities to various concerned agencies in implementing the EMP.

3.5.7 Outline management clauses to be included in the contract document regarding the implementation of the mitigation measures

The consultant shall propose relevant clause(s) to be included in the construction contract document in order to ensure that all mitigation measures are

accommodated. All technical drawings of the preliminary road design shall be reviewed to accommodate the proposed mitigation measures.

4.0 COMPOSITION OF THE CONSULTING TEAM

The consulting team shall include highly experienced experts in the following specialities: an Environmentalist, Socio-economist, Land Economist/Valuer, an Ecologist (flora and fauna) and a Highway Engineer.

5.0 REPORTING SCHEDULE

The consultant shall submit the following reports in English language and shall provide a separate environmental report that is concise and limited to significant environmental issues. The main text should focus on study findings, conclusions and recommended actions, supported by summaries of those data collected and citations for any references used in interpreting those data.

Unpublished documents used in the EIA may not be readily available and should be assembled in an appendix and organize the environmental assessment report according to the outline below:

- Executive Summary
- Introduction
- Objective
- Policy, Legal and Administrative Framework
- Description of the Project
- Description of the Environmental Setting (Baseline data/information)
- Methodology
- Potential Environmental Impacts
- Analysis of the Alternatives, if any
- Consultation and Community Involvement
- Mitigation Measures
- Environmental Management Plan (EMP)
- Environmental Monitoring Plan
- Conclusions
- Recommendations
- Acknowledgments
- List of References
- Appendices:
  - List of EIA experts involved
  - Records of inter-agency and public/NGOs communications
  - Data and unpublished reference documents

NB: The Executive Summary should highlight the Identified Impacts, Mitigation Measures, Conclusions and Recommendations.

The report shall be submitted in the following sequence: -

(i) **Inception report:** 10 copies to be submitted to NDC and 2 copies to the financing agency within 1 month from the date of signing the contract. The

report shall be comprised of study findings, detailed work plan, approach, methodology and other remarks as deemed appropriate for the conduct of the task. Comments from the client will be available within two (2) weeks after submission.

(ii) **Draft Report:** 20 copies of Draft EIA Report shall be submitted to NDC and 2 copies to the financing agency. NDC will submit 15 copies to NEMC for review and comments by the Technical Review Committee (TRC) of NEMC.

(iii) **Final report:** 10 copies of final EIA Report shall be submitted to NDC and 2 copies to the financing agency. The Final EIA Report shall incorporate all comments raised by TRC of NEMC and other stakeholders.