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**CHAPTER 1**  
**INTRODUCTION**

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# **1. INTRODUCTION**

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## **1.1 Background of the Study**

The Republic of Uganda is a landlocked country which is surrounded by Kenya, Tanzania, Sudan, the Democratic Republic of Congo and Rwanda. Various mode of transports are available to/from Uganda, including roads, railways and ferry on Lake Victoria have been developed, although the existing railway network and ferry are not properly functioning/operating to cater for the international transport market. Hence, cargo transport is heavily dependent on road transport, accounting to 95% of the total cargo traffic.

Kampala, the capital city of Uganda, is the generating source of cargo traffic and the centre for goods distribution. Kampala is therefore the hub of the national road network.

The Northern Corridor route runs parallel to the northern coast of Lake Victoria. This route constitutes a major strategic link from Uganda and other inland neighbouring countries (including Rwanda, Burundi and the eastern part of the Democratic Republic of Congo) to the Port of Mombasa in Kenya.

The Northern Corridor route crosses the River Nile through the existing Nalubaale Dam Bridge at Jinja, located at about 80 km to the east of Kampala. The bridge has currently become a bottleneck for the transport of goods and passenger due to its narrow width, plate deck deterioration and exfoliation of the concrete surface of the bridge piers. Also, the increasing traffic volume coupled with overloaded heavy vehicles has increasingly caused the deterioration of the bridge structure.

To cope with the situation, the Government of the Republic of Uganda conducted a Pre-Investment Study, with World Bank assistance, for the determination of appropriate bridge locations at Jinja. However, the Pre-Investment Study that has been conducted have not assessed the feasibility of the development on full-scale and therefore has not provided the detailed construction costs for the New Nile Bridge. The World Bank has given higher priority to other road improvement projects and for this reason further investigations and preparation of detailed cost estimates have not been conducted to pursue the proposed Project for actual implementation.

In light of the foregoing, in order to cope with the situation, the Government of Uganda requested the Government of Japan to carry out the Feasibility Study on the Construction of A New Bridge across River Nile at Jinja. In response to the official request of the Ugandan Government, the Japanese Government through Japan International Cooperation Agency (JICA) deployed a Study Team in November 2008.

## 1.2 Objectives of the Study

The objectives of the Study are summarized as follows:

- To conduct the Feasibility Study on the Construction of A New Bridge across River Nile at Jinja including the approach roads on both sides of the river banks (hereafter referred to as the Project).
- To Transfer relevant skills and expertise to Ugandan Staffs involved with the Study efforts.

The primary objective of the Project is to provide safe and smooth traffic flow for the Northern Corridor of Africa, a strategic link from Uganda and other inland neighbouring countries (including Rwanda, Burundi and the eastern part of the Democratic Republic of Congo) to the Port of Mombasa, Kenya.

## 1.3 Study Area

The Study covers the area directly affected by the proposed bridge construction project, as shown in Figure 1.3.1.

The Study also needs to address the whole Uganda and the surrounding countries, including Kenya, Tanzania, Rwanda, Burundi, the eastern part of the Democratic Republic of Congo and the southern part of Sudan.



Figure 1.3.1 Study Area

## 1.4 Milestone of the Study

The Study commenced with the preparation of an Inception Report in November 2008 followed by the submission of a Draft Final Report in August 2009, presentation to the Steering Committee in early September 2009.

One month for the review and comments of the Report by the Steering Committee was allocated, prior to finalizing and submitting the Report to JICA in October 2009.

Table 1.4.1 shows the major tasks in the study schedule showing the milestones for report submissions and Steering Committee meetings as well Public Consultation meetings.

**Table 1.4.1 Major Tasks Schedule**

Year	2008		2009											
Month	11	12	1	2	3	4	5	6	7	8	9	10	11	12
<b>◆ Project Activities</b>														
Selection of Representative Alignment of Each Route	■													
Selection of Optimum Solution (Optimum Alignment & Bridge Type)			■											
Preliminary Design & Cost Estimation					■									
Economic & Financial Analysis								■						
Implementation Plan / EIA								■						
<b>◆ Report</b>	△			△	△		△		△		△	△		
	ICR			PR1	SPR		ITR		PR2		DFR	FR		
<b>◆ EIA Activity by COWI</b>											△			△
											DFR			APPR
<b>◆ Public Consultation</b>		△			△	△						△		
		1st			FGD	2nd						3rd		

Note: ICR: Inception Report, PR1: Progress Report 1, SPR: Special Report, ITR: Interim Report, PR2: Progress Report 2, DFR: Draft Final Report, FR: Final Report

Summary of the major tasks carried out during the study period are listed as follows.

(1) Collection of Data and Analysis for the Existing Conditions

Previous study reports, Pre-Investment Study by WB and Study for the construction of Jinja Bridge by IDI, recommended various alternative routes, including Routes A, B and C for the New Nile Bridge at Jinja.

The Study commenced with the analysis of available data, the review of the foregoing study reports and the generation of complementary data through field investigations including traffic survey, topographic survey, river survey, geological survey and environmental survey. On the basis of the study of the reports and data supplemented by field investigations, the most appropriate and conceivable alignment was identified for the locations of the bridge and approach roads for Routes A, B and C in early February 2009.

(2) Selection of the Optimum Bridge Solution (to Cross the River Nile at Jinja)

Alternative bridge types for the selection of representative alignments for Routes A, B and C were based on the evaluation criteria with respect to: "Contribution to Local Development", "Social and Natural Environment Impacts", "Construction Risk and Cost", "Impact to the Airport Expansion Plan", "Maintenance Work", "Bridge Type Aesthetics" and "Economic Impacts to traffic for the Northern Corridor of Africa and its neighbouring Region".

Comments and opinions from various stakeholders were also reflected in the selection process of the optimum solution. The chosen optimum alignment and the bridge type to be adopted were discussed with the Steering Committee and were subjected to Public Consultation Meetings for consensus building in early April 2009.

(3) Preliminary Engineering Design and Project Cost Estimates

The preliminary engineering design was undertaken for the chosen optimum alignment option and bridge type, and discussions were made on the bases for selecting the basic bridge configuration including the types of pylon shape and stay cable.

(4) Economic and Financial Evaluation

Economic and financial evaluations were carried out based on the estimated construction cost of the project, operation and maintenance costs, and economic benefits derived from savings in Vehicle Operating Cost and Travel Time Cost and the implementation plan.

(5) Environmental and Social Impact Assessment / Resettlement Action Plan (EIA/RAP)

The ESIA/RAP was conducted by Local Consultants contracted by UNRA and the Draft Final Report for this ESIA/RAP studies were submitted to UNRA for review and comments in the mid of September 2009. Thereafter, the official examination of submitted reports will be initiated by NEMA, and the environmental permit for the construction of the proposed project is expected to be approved in late November 2009.

(6) Adoption of Tolling System for the Project

Problems and issues with respect to the application of a tolling system for the project were discussed with concerned officials and relevant agencies and the results of the discussions were compiled for further deliberations.

(7) Public Consultation

The 1st PC presented the study components and schedule of activities, the 2nd PC presented the chosen optimum solution to be adopted for crossing the River Nile at Jinja, the objective of which is to achieve stakeholders' consensus. The 3rd PC presented the results of the preliminary engineering studies, preliminary estimated costs, implementation plan and results of the economic and financial evaluation studies.

Prior to the 2nd PC, Focus Group Discussions a meeting was held at Jinja with the participation of Jinja and Njeru stakeholders. In that meeting questionnaire survey was undertaken to gather information from the stakeholders regarding the level of significance (evaluation weight) of the proposed project based on established evaluation criteria for the selection of the optimum solution to be adopted for the project.

(8) Technical Transfer

Workshops and lectures were held intermittently during the course of implementation of the studies. Five sessions were prepared for bridge planning, three sessions for field practices and lectures were made on environmental impact assessment. Technical transfer for the use of GIS and CAD were carried out by on-the-job training supplemented with lectures in the project office.

The ultimate goal of the Study effort is to provide a scheme that would ensure the viability of the project for which all efforts were exerted to pursue the implementation of the project through possible loan arrangements and preparation of the Detailed Design.

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**CHAPTER 2**

**OVERVIEW OF SOCIAL, ECONOMIC AND**

**TRANSPORT DEVELOPMENT**

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## 2. OVERVIEW OF SOCIAL, ECONOMIC AND TRANSPORT DEVELOPMENT

### 2.1 Current National Conditions

#### 2.1.1 Social and Economic Conditions

##### (1) Population

The Table 2.1.1 shows the Ugandan census statistics from 1992 to 2002 with the projected growth rates for 2008 at 2.8% per annum. As can be seen, the annual growth rate on average from 1991 to 2002 was 3.5% and 3.2% from 2002 to 2008. Eastern and Northern Regions show relatively higher growth rate than the average. Moreover, population distribution at 7.5-7.8 million among the respective regions appears balanced but the Northern Region is relatively lower, at 6.3 million.

**Table 2.1.1 Population Trend**

Unit: 1000 persons

Region	1991	2002	Growth Rate 1991/2002 (% p.a)	2008*	Growth Rate 2002/2008 (% p.a)
Central	4,843.6	6,575.4	2.8	7,750.6	2.8
Eastern	4,128.5	6,204.9	3.8	7,692.5	3.6
Northern	3,152.0	5,148.9	4.6	6,252.3	3.3
Western	4,547.7	6,298.1	3.0	7,497.3	2.9
Total	16,671.8	24,227.3	3.5	29,192.7	3.2

Source: Statistical Abstract 2008

Note: \* is projection

##### (2) GDP and GDP Growth Rate

Annual GDP growth is 7.7% on average between 2000 and 2007, while annual per capita GDP growth is 4.3% on average in the same period as shown in Table 2.1.2. Considering that population is growing at more than 3% per annum, a higher GDP growth rate, say over 7% will have to be maintained so that the per capita GDP in the future will keep improving.

**Table 2.1.2 GDP Growth**

Year	GDP (Bn. Ushs.)		Growth Rate (%)	Per Capita (Ushs.)		Growth Rate (%)
	Current Price	Constant 2002 Price	Constant 2002 Price	Current Price	Constant 2002 Price	Constant 2002 Price
2000	10,030	10,297	-	437,252	448,860	-
2001	11,132	11,199	8.8	469,977	472,817	5.3
2002	11,990	11,990	7.1	490,190	490,190	3.7
2003	13,843	12,728	6.2	548,137	530,980	2.8
2004	15,271	13,467	5.8	585,622	516,420	2.5
2005	17,878	14,814	10.0	663,971	550,193	6.5
2006	20,166	15,859	7.0	725,342	570,410	3.7
2007	23,009	17,282	9.0	801,515	602,003	5.5
Average	Growth rate 2000/2007		7.7	Growth rate 2000/2007		4.3

Source: Statistical Abstract 2008

(3) Businesses and Employment Opportunities

The registered number of business enterprises and employees are shown in Table 2.1.3 although certain differences on definitions exist between 2001/02 and 2006/07.

**Table 2.1.3 Businesses and Employment Opportunities**

Unit: Companies and employees

Industry	No. of Business		Employment
	2001/02	2006/07	2006/07
Agriculture & Forestry	359	382	28,407
Fishing	90	120	1,012
Mining & Quarrying	21	33	1,493
Other Manufacturing	2425	3018	32,456
Utilities	16	26	2,738
Construction	155	220	8,993
Trade	3025	4083	46,776
Hotels & Restaurant	1971	3231	32,796
Transport and Communications	332	532	17,665
Finance & Insurance	245	638	13,537
Business & Services	553	1029	27,540
Education	228	1569	20,675
Health & Social Works	672	1402	31,071
Community, Social & Personal Services	477	801	13,003
Total	10,569	17,084	278,162

Source: Statistical Abstract 2008

Note: Data for 2006/07 excludes business enterprises with employees of less than 5 staffs.

Data of employment in 2006/07 excludes food processing industry of 39,633.

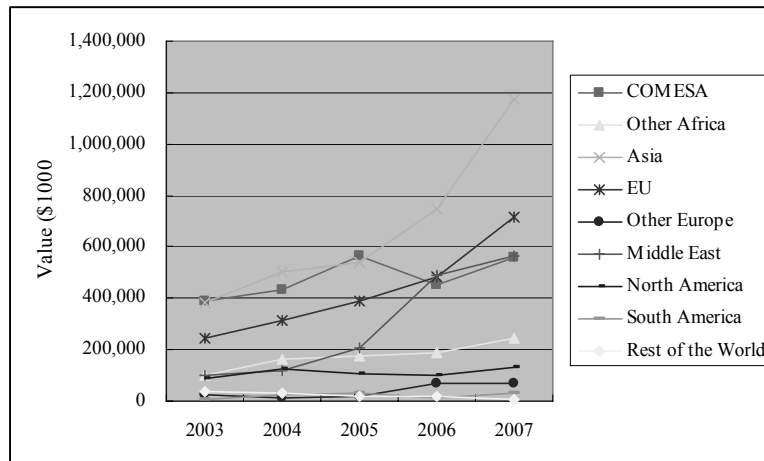
Remarkable increase in business activities can be observed from 2001/02 to 2006/07. Major components of employment in 2006/2007 are "Trade" (at 16.8%) which is the highest followed by "Hotels and Restaurant" (at 11.8%), "Other Manufacturing" (at 11.7%), "Health & Social Works" (at 11.2%) and "Agriculture & Forestry" (at 10.2%), for a total account of



61.7%. If the employment for food processing industry at 39,633 is added, as noted in the bottom of Table 2.1.3, the employment of “Other Manufacturing” occupies 22.7% of the total employment and becomes the highest among the industrial sectors.

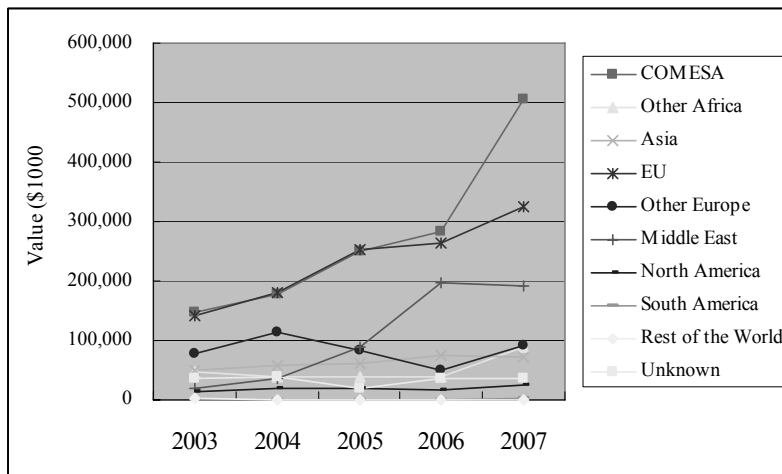
(4) Foreign trade

Value based foreign trade is tabulated in Figure 2.1.1. Import growth from Asia has been remarkable while COMESA (Common Market for Eastern and Southern Africa) shows high increase in exports in 2007 as shown in Figure 2.1.2.



Source: Statistical Abstract 2008

**Figure 2.1.1 Foreign Trade (Import)**



Source: Statistical Abstract 2008

**Figure 2.1.2 Foreign Trade (Export)**

(5) Registered No. of vehicles

The total number of registered motorized vehicles in Uganda is 274,000 in 2005 as shown by vehicle type in Table 2.1.4. An average annual growth of registered vehicles is 13.5% in total. Motorcycle shows the highest growth rate at 24.3% per annum, while bus and truck show moderate growth at 8.1% p.a. and 6.4% p.a., respectively.

**Table 2.1.4 Registered No. of Vehicles by Type**

Type	1993	1998	2000	2003	2005	Unit: Vehicles
						% Growth 1993/2005
Motorcycle	7,646	61,044	64,305	80,088	103,525	24.3
Car	20,464	46,930	49,016	56,837	69,807	10.8
Utility	15,035	37,199	42,443	48,528	60,130	12.2
Bus	401	686	800	846	1,021	8.1
Minibus	6,489	15,143	15,523	19,726	23,833	11.5
Truck	7,554	11,451	13,240	16,122	15,858	6.4
Others	2,411	3,711	3,778	4,044	-	-
Total	60,000	176,164	189,105	226,191	274,174	13.5

Source: UNRA

## 2.1.2 Road Network

### (1) Network

The road network in Uganda is classified into four categories as shown in Table 2.1.5, according to jurisdiction.

**Table 2.1.5 Road Classification in Uganda**

Category	Length (km)	Of which paved (km)	Jurisdiction
National roads	10,953	2,700	UNRA
District roads	27,500	-	District (local government)
Urban roads	4,300	-	Urban councils (local government)
Community access roads	30,000	-	Village(local government)

Source: National Transport Sector Master Plan

Figure 2.1.3 shows the trunk road network. Major roads are distributed in a radial pattern connecting district centres in the country. The paved trunk roads cover most of the central and west regions from Kampala except for the northeast region.

Ferry crossings are part of the road infrastructure. Six of the system is under the jurisdiction of the Ministry of Works and Transport, while others are privately owned.



### 2.1.3 Road Maintenance

#### (1) Policy

Road Maintenance policy in Uganda is based on the RMI (“Road Maintenance Initiative”, that later became the “Road Management Initiative”) which was developed by the World Bank, Economic Commission for Africa and other development institutions. The objectives of the RMI are listed as follows:

- Sustain and deepen dialogue on the need for policy reform and on the available reform options;
- Develop and disseminate knowledge on sustainable road management and financing practices;
- Systematically assess results of the reform and disseminate lessons learnt and best practices; and
- Build capacity to carry out policy analysis, strategy formulation, reform monitoring and post-evaluation.

The RMI philosophy was based on commercializing the management and financing of roads. This involved bringing roads into the market place, put them on a fee-for-service basis, and manage them like a business enterprise.

Commercialization required complementary reforms in four areas or building blocks as shown in Table 2.1.6.

**Table 2.1.6 Required Reforms for Commercialization**

Ownership	To empower and encourage the public to play an active role in the management of roads and, in so doing, win their support for road funding.
Financing	To develop a financing mechanism for securing an adequate and stable flow of funds based on explicit and appropriate road user charges.
Responsibility	To clearly establish who is responsible for what in the road sector by assigning roles in a definitive manner with matching authority and performance targets.
Management	To ensure the adoption of sound business practices and managerial accountability through effective use of systems and procedures.

Source: UNRA

Hence, UNRA was established as exclusive maintenance agency in Uganda in July, 2008 after a transition period of the Road Authority Formulation Unit (RAFU) and the Road Fund was also established in July, 2007; which are meant to ensure stable and regular systems in both engineering and financial operation that resulted to the accomplishment of institutional road maintenance management mechanism.

#### (2) Responsibility

Responsibility for road maintenance in Uganda is demarcated by road category as presented in Table 2.1.7.

**Table 2.1.7 Demarcations of Maintenance Responsibility**

Kinds of Road	Responsible Agency	Work Method	External Assistance
National Road	UNRA	Contract-out ( Out-sourcing)	WB, EU, AfDB
District Road	Local Government	Direct operation	PAF, DANIDA, EU, AfDB
Urban Road	Local Council	Direct operation	PAF, JICA
Community Access Road	Local Council	Direct operation	

Source: MOWT

(3) Category

Maintenance work, generally, is divided into 23 categories and each category has an annual program which states annually such targets as quantities and budgets. Table 2.1.8 shows the maintenance categories, quantities and budget for the annual program in FY2008/09.

**Table 2.1.8 Road Maintenance Work Category**

Category No.	Road Maintenance Operations	Qty	Budget (Bil. Ushs)
1	Manual Routine Maintenance	10,970 km	8.00
2	Mechanical Routine Maintenance	-	-
2A	Light/Medium Grading –Unpaved (x3)	18,000 km	21.39
2B	Heavy Grading – Unpaved (x1)	3,000 km	9.00
2C	Spot Graveling – Unpaved	45,500 m <sup>3</sup>	3.00
2D	Spot Graveling – Unsealed Shoulders of Paved Roads	850 km	1.00
2E	Patching	2,700 km	2.77
3	Term Maintenance	165 km	2.50
4	Periodic Maintenance- Paved		
4A	Rehabilitation	100 km	14.00
4B	Reseal	220 km	20.50
5	Periodic Maintenance – Unpaved		
5A	Re-graveling	1,400 km	27.13
6	Recycling Technology	4 km	1.00
7	Low Cost Surfacing	15 km	1.00
8	Supervision Consultancy Service for Periodic Maintenance		6.00
9	Bridge Maintenance		4.40
10	Manual Routine Maintenance of District Roads to be upgraded to National Roads	7,000	-
11	Mechanized Maintenance of Critical Road Links	2,000	-
12	National Road Network Assessment	-	0.20
13	Road Safety Measures	-	3.00
14	Demarcation of Road Reserves	-	1.20
15	Minor Improvement Works		
		Total	127.29

Source: Ministerial Budget Policy Statement, June 2008; MOWT

(4) Work Method for National Roads

Physical field works for maintenance including routine maintenance works are consigned to the private sector. Types of the contracts are diversified such as time base, fixed amount base and quantity- and unit-price-base. Particularly for Manual Routine Maintenance, only the so-called Group Contract is applied, wherein a contract with the local community is made. Contractors in Uganda are classified into 5 groups as shown in Table 2.1.9. The magnitude of work to be contracted will depend on the extent of capital and work experiences, etc, which are reviewed and determined by MOWT.

Although MOWT initiated the classification of contractor, the Government prepared a Procurement Regulation stating that all activity with project budgets above Ushs 100 Million shall be carried out by Open Tender. Based on this regulation the classification of contractors is not applicable for pre-qualification purposes.

**Table 2.1.9 Classification of Contractor**

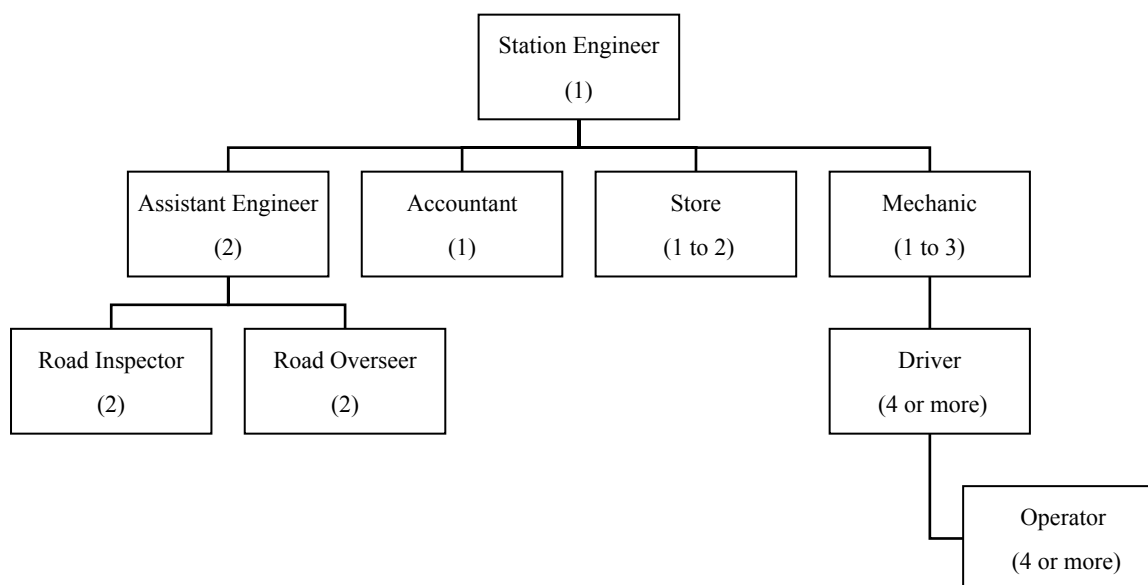
Class	Limitation of Contract Amount (Mil. Ushs)	No. of Registered Firms	Available works to be consigned
A+	No Limitation	11	All Works
A	No Limitation	22	All Works
B	300	24	Mechanical Routine Works (e.g. Pothole Patching)
C	200	54	Mechanical Routine Works (e.g. Gravel Road Grading)
D	150	52	Minor Works

Source: Contracts Committee Decision on Submission of Bids, MOWT

(5) Organizations

As mentioned earlier, maintenance of Uganda's 10,800 km of paved and unpaved national roads is presently under the responsibility of UNRA. The task is facilitated by 22 field Stations with authority to implement the maintenance program by contract and force account.

The field Station is an extensive maintenance office headed by a Station Engineer. Figure 2.1.4 shows the typical organizational composition of a field Station.



Source: UNRA

Note: Numbers in ( ) show no. of personnel

**Figure 2.1.4 Typical Organizational Composition of Field Station**

(6) Inventory

MOWT has established a computerized road inventory system namely "ROMAP" (Road Management Planning System). The system was created using Microsoft Access. Data collection at the sites and computerization are still in progress as of December 2008. The system will be made available for use by both MOWT and UNRA upon its completion.

Simultaneously, the IRI survey being conducted by a British consulting firm, WSP, is expected to be used for the road management program.

(7) Machinery

MOWT possessed 190 road maintenance machineries as of March 2007. All machineries are rated based on their operating conditions as shown in Table 2.1.10.

**Table 2.1.10 Rating for Machines**

Rating	Description
5	New/ Very good
4	Good – Requires light repair
3	Fair – Major overhaul required
2	Bad – Operates intermittently
1	Poor – Beyond repair
0	Unserviceable

Source: MOWT Road Equipment Review

A total of 168 units of machineries or 88.4% of the total equipments are rated at 3 and above.

Most of the equipments were turned over to UNRA after July, 2008.

(8) Current Issues

For O&M of National Roads (Operation and Maintenance), the institutional and financial set up has been set up with the establishment of both UNRA and the Road Fund aimed at working out the following problems:

- Unstable and insufficient budget arrangement
- Unclear extent of responsibility
- Ineffective management structure
- Insufficient economic sense of road administrators
- Inadequate incentive system.

In order to achieve a well-functioning O&M road system, the following issues remain to be improved:

- Improvement of performance level of the private sector
- Improvement of the evaluation skill and methodology of UNRA to enhance the performance of the private sector
- In-depth monitoring of contractual requirements by both UNRA and the private sector
- Utilization of advance technologies to improve efficiency in O&M of roads.

There are few multi-span bridges in Uganda so that design and maintenance expertise for long bridges are not yet developed by either MOWT or UNRA. These sorts of expertise needs to be developed urgently together with the preparation of needed engineering documents and tools including design standards, and inventory and maintenance manuals.

On the other hand, district roads and community access roads are currently administered by the local governments/councils in response to the decentralization policy of the Government, and as such road maintenance is directly being implemented at the local level. Under these conditions, there still exist many institutional and financial issues which need to be addressed including the following:

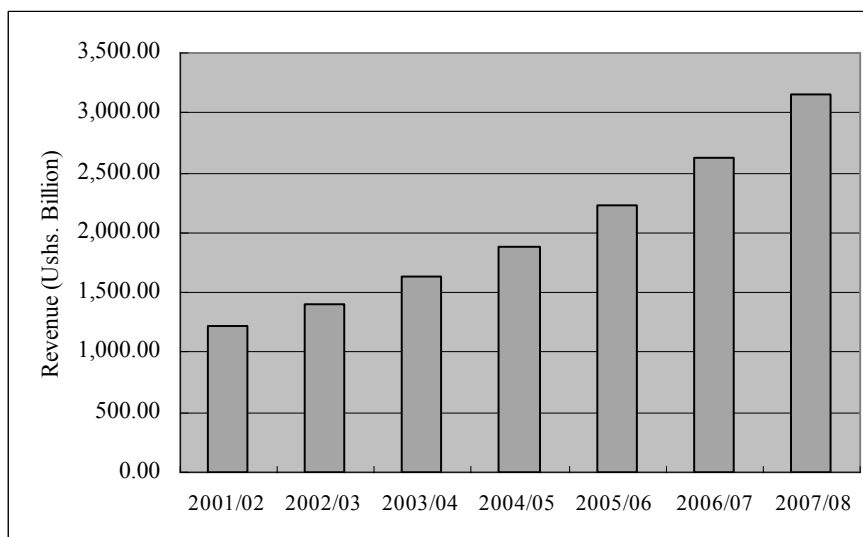
- Lack of policy on O&M activity
- Insufficient personnel and materials for the O&M of roads
- Insufficient engineering expertise of the O&M staffs

- Unclear and unstable budget allocation from the Central Government
- No available private sector firms to carry out O&M of roads in the field.

## 2.1.4 Road Budget and Fund

### (1) Tax Revenue

Tax revenue in Uganda has been satisfactory with constant growth in the last several years as shown in Figure 2.1.5.



Source: "Ministerial Budget Policy Statement, 2007/08"

**Figure 2.1.5 Tax Revenue Trend**

### (2) National Budget

The total national budget at Ushs 4,185.6 billion in 2007/08 comprised of tax revenue at Ushs 3,076.1 billion and other revenues at Ushs 1,109.5 billion. The total budget for 2008/09 indicated considerable growth of as high as Ushs 6,142.9 billion or an increase by 46 %.

### (3) Budget for the Ministry of Works and Transport

Table 2.1.11 shows the budget for the Ministry of Works and Transport in 2007/08 accounting about 15.7% of the national budget.

**Table 2.1.11 Budget of MOWT in 2007/08**

(Unit: Ushs Million)

Recurrent		Development		GoU Total*2	Grand Total*2
Wage	Non-wage	GoU	Donor*1		
3,656	205,042	113,554	355,684	322,252	657,936

Source: Annual Budget Performance Report FY 2007/08

Note:\*1 Donor release and expenditure data unavailable

\*2 This does not include allocations and expenditures from Non Tax Revenues retained and spent by vote

The budget in 2008/09 for the road sector accounted to around Ushs 1.1 trillion including the development partner project assistance of Ushs 347 billion.



(4) Budget for National Roads (UNRA)

As previously mentioned, UNRA is the responsible agency for national road management and their budget is categorized into recurrent and development. Table 2.1.12 shows the annual budget of UNRA in 2007/08 which accounts for around 78% of the budget of MOWT.

**Table 2.1.12 Budget of UNRA in 2007/08**

(Unit: Ushs Million)

Recurrent		Development		GoU Total*2	Grand Total*2
Wage	Non-wage	GoU	Donor*1		
2,321	145,827	65,354	298,316	215,503	511,819

Source: Annual Budget Performance Report FY 2007/08

Note:\*1 Donor releases and expenditure data unavailable

\*2 Does not include allocations and expenditures from Non Tax Revenues retained and spent by vote

The establishment of Uganda National Road Authority (UNRA) in July 2008 as an exclusive road maintenance remarkably increased the budget for road maintenance from Ushs 511,819 million for 2007/2008 to Ushs 948,630 million for 2008/2009 as shown in Table 2.1.13 hereunder.

**Table 2.1.13 Budget Allocated for UNRA in 2008/09**

(Unit: Ushs Million)

No.	Category	Budget		Growth (%)
		2007/08	2008/09*1	
01	Administration	12,326	7,258	59%
02	National Road Maintenance	158,587	165,939	105%
03	National Road Construction	340,906	775,433	227%
Total		511,819	948,630	185%

Source: Annual Budget Performance Report FY 2007/08

Note: \*1 Draft estimates

Item 02 “National Roads Maintenance” includes the following works:

- Routine manual maintenance
- Routine mechanized maintenance
- Rehabilitation and resealing of paved roads
- Re-gravelling of unpaved roads
- Maintenance of national bridges
- Enforcement of Axle load control for national road network
- Ferry service improvement
- Carrying out road maintenance studies

Item 03 “National Roads Construction” includes the following works:

- National gravel roads upgraded to bitumen standard
- Rehabilitation of paved national roads
- Design for upgrading national roads to bitumen standard
- Improvement of roads along accident prone sections
- Improvement of ferry service system
- Design and construction of bridges

The draft details of the budgetary estimates for 2008/09 are shown in Table 2.1.14 although some differences could occur between the final and draft budget.

**Table 2.1.14 Detailed Budgetary Estimates in 2008/09**

(Unit: Ushs Million)

Category		Km	GOU	Develop ment partners	Total
A National Road Developm ent	A1 Rehabilitation and upgrading projects	1,546	59,574	282,210	341,784
	A2 Widening, re-gravelling and bridge/drainage works	134	19,999	0	19,999
	A3 Project preparatory studies/designs/tender documents	2,963	2,090	6,987	9,077
	A4 Others	0	0	0	0
	S. Total	4,643	89,663	289,357	379,020
B Northern Transport Corridor	B1 Development Projects	990	234,872	0	234,872
	B2 Project preparatory studies/designs/tender documents	0	10,240	0	10,240
	S. Total	990	245,112	0	245,112
C Manifesto Projects	C1 development projects	221	22,800	0	22,800
	C2 Project preparatory studies/designs/tender documents	1,366	10,800	0	10,800
	S. Total	1,587	33,600	0	33,600
D Bridges	D1 development projects	0	4,100	0	4,100
	D2 Bridge project preparatory studies/designs/tender documents	0	2,100	0	2,100
	D3 Bridge maintenance	0	575	0	575
	S. Total	0	6,775	0	6,775
E National Road Maintenance		10,500	135,840	0	135,840
F UNRA Operation		0	17,490	0	17,490
G Uncommitted Development Partner Contribution		468	0	50,793	50,793
Grand Total		26,188	528,480	340,150	868,630*

Source: UNRA

Note: \* Budgetary allocations between Tables 2.1.13 and 2.1.14 may vary because they are still in the draft stage. .

#### (5) Road Funding

UNRA's operations were initially supposed to be financed directly by the national government. However, ever since the Road Fund was created, maintenance of roads and associated costs are covered by the said Fund.

The Road Fund defined its major revenue sources for road management as follows:

- Fuel levy (Road Fund);
- Transit fee (cross border charges);
- Vehicle licensing fee (abolished);
- Weight distant charges;
- Axle load fines appropriations by Parliament;
- Bridge tolls and road tolls; and
- Funding from development partners.

(6) Strategic investment for the northern corridor development<sup>1</sup>

The road sector budget in 2008/09 includes the construction of the northern corridor into a dual carriageway from Busia/Malaba to Katuna. The total cost for the development is estimated at \$200 million for 2008/09. Additionally, a total of \$600 million over the next three years will be spent for the construction of major highways through Government partnership with the private sector.

## 2.1.5 Truck Loading

(1) Current Situations

Over loading is a perennial headache in the trucking transport industry not only in Uganda but also in the whole of EAC. Roads have been paved with DBST (Double Bituminous Surface Treatment) but even in international trunk roads with a view to reducing the construction costs, have seriously been subjected to damage by over-loaded trucks. The traffic administrator (usually the police department, NNRA and URA) has taken several counter measures to enforce the law. Despite all the efforts, over-loading so far has not been arrested.

(2) Axle Load Survey at Nalubaale Dam Bridge

“Emergency Repairs for Nalubaale Dam Bridge” were carried out by then MOWHC (presently MOWT) in 2005. The agency conducted an axle load survey and the results are shown in Table 2.1.15.

**Table 2.1.15 Axle Load at Nalubaale Dam Bridge (single axle)**

(Unit: kg)

Axle Type	S2	S4	T8
Max axle load	13,800	39,300	25,700
Average axle load	6,026	11,162	8,802
Standard deviation	1,617	4,884	2,779
95% Axle load	8,578	18,193	13,056

Source: Emergency Repairs on Nalubaale Dam Bridge

Note: S2: Single truck with 2 axles. S4: Single truck with 4 axles. T8: Truck trailer with 8 axles.

As shown, the table indicates the maximum single axle weight (not dual) for a single truck with 4 axles at 39.3 tons. It was also reported that the maximum total weight of truck trailer with 8 axles is as high as 109 tons.

(3) Current Regulation

All countries in EAC including Uganda have been and are applying the same gross mass and maximum axle weight regulation at the moment. Based on the regulation, the maximum single weight for the dual type is either 10 tons or 16 tons. With respect to the gross vehicle weight, the law has regulated it to a maximum of 56 tons in the case of the truck trailer while the others are based on the type of trucks with the corresponding number of axles.

(4) Current Countermeasures

Over-loading is a serious problem in Uganda which must be addressed to prolong the service life expectancy of roads. Owing to maintenance budget deficiency, sufficient road maintenance activities have so far been not carried out appropriately. One of the primary

<sup>1</sup> By budget speech in 2008/09

reasons for the speedy degradation of road is over-loading, which is not by gross total weight of vehicles but by over-axle-load of heavy vehicles. The related traffic management offices, i.e. UNRA, the Police Office, and URA (Uganda Revenue Authority) in Uganda have taken countermeasures mainly in enforcing the current regulations to date. However, the increase in traffic on the northern corridor, necessitate more essential countermeasures. The following measures are currently being implemented by officials concerned:

1) Exchange axle load data

Currently URA has generated data on the axle load of trucks passing through the border in Malaba and Busia, which should be disclosed to all officials concerned for the implementation of appropriate regulations.

2) Provision of mobile-type of weigh bridge

A fixed weigh bridge is located at fixed points where the road diverges to Malaba and Busia. A mobile type of weigh bridge is necessary so that travel to ad hoc locations cannot be foreseen by truck drivers.

3) Application of asphalt-concrete pavement

DBST has been used for pavement of roads in Uganda even for international trunk roads including the northern corridor. The increase in heavy trucking on the northern corridor however, necessitates the need for a sustainable long life pavement structure. All the stretches of the northern corridor should be widened into dual carriageway (four (4) lanes) in the near future. In this connection, it is necessary to adopt asphalt-concrete pavement for durability to cope with the heavy truck traffic passing through the border with Kenya.

## 2.1.6 Transit Traffic on the Northern Corridor

(1) Traffic Volume

Traffic volume on the major stretches on the northern corridor is tabulated in Table 2.1.16. The traffic volume between Njeru and Jinja is around 7,300 vehicles daily while Jinja and Kakira is around 11,800 in total per day including motorcycles.

**Table 2.1.16 Traffic Volume on the Northern Corridor**

(Unit: Vehicle/day)

Stretches	Km	Car	Utility	Minibus	Bus	Truck			Truck trailer	Motor cycle	Total
						Light	Med.	Heavy			
Kampala - Bweyogerere	6.5	6055	4611	8381	74	654	327	327	370	974	21773
Bweyogerere - Mukono	10.8	3544	2699	4905	43	383	191	191	217	570	12743
Mukono - Lugazi	24.2	1089	1354	1884	99	160	187	187	306	217	5483
Lugazi - Njeru	29.9	638	544	697	3	42	49	49	6	626	2654
Njeru - Jinja	2.2	1693	2014	2170	63	185	216	216	311	392	7260
Jinja - Kakira	7.8	2446	2270	2687	377	430	502	502	881	1699	11794
Kakira - Iganga	27.3	1374	1257	2484	83	191	223	223	325	460	6620
Nakarlama/Bugili - Namutere	55.6	500	1189	1354	593	133	155	155	449	236	4764
Namutere - Tororo Jct.	28	193	219	255	24	58	68	68	259	119	1263
Tororo Jct. - Malaba	10.8	355	224	382	12	54	63	63	383	195	1731
Namutere Jct. - Busia	15.9	81	115	194	12	33	39	39	122	56	691

Source: Northern Corridor Pre-Feasibility Study, 2007 (traffic count is conducted in 2005)

Note: Jinja bypass 3.5 km and Iganga-Nakalama 4.8 km are excluded.

(2) Customs Clearance at Malaba

Cargoes need to be checked and cleared at Malaba as regards to the vehicles' origins / destinations. From the viewpoint of customs clearance, there are two cases as follows:

1) Origin / Destination is Uganda via Malaba

Every forwarder needs to prepare mandatory clearance documents. If the documents are ready before the cargoes arrive, it will take around 20 minutes to clear the customs. If not, they have to prepare the documents within two hours. All cargoes are checked according to regulations and duty payment is required in compliance with the law. After the verification, the cargoes are able to depart from the customs. In addition, any cargo can be cleared by any officially approved bonded-warehouse located in Uganda, as for instance, in Jinja, Kampala and others.

2) Origin / Destination is beyond Uganda like Rwanda, DRC, Burundi

Transit cargoes are simply checked and duty payment is not required at Malaba. They need to pay duty at the destination countries. Only a transit fee is required at Malaba.

(3) Charges

Transit license fee and weight distant fee is required for transit trucks to pass through Malaba. The former is Ushs 350,000 per year and the latter is around US\$ 0.11 / km, depending on the kind of cargo.

(4) Transport Days

The transport time from Mombasa Port to Kampala by truck is a very essential factor when discussing a level of transport service. There are many conditions affecting this matter and they vary depending on the conditions. From Mombasa Port to Kampala, based on interviews with persons concerned and related reports, it takes around 7 days to off-load cargoes at Mombasa Port and another 5.5 days for other activities or a total of 12.5 days on the average as shown in Table 2.1.17.

**Table 2.1.17 Transport Days between Mombasa Port and Kampala**

	Points	Situations	Days
1	Clearance at Mombasa Port	In terms of transit cargo, scan and duty payment is not required at Mombasa Port. However, the port is always congested and it takes time to off-load the cargo.	7 days
2	Mombasa Port to Malaba	Many weigh bridges are located in Kenya along the way	4 days
3	Clearance at Malaba	In case destination is within Uganda and documents are completed, time loss is not serious.	0.5 day
4	Malaba to Kampala	No obstacle is observed	1 day
	Total		12.5 days

Source: JICA Study Team

(5) Transport Cost

Transport cost varies depending on conditions. For 40-foot container, the transport cost is around US\$ 5,000 on average excluding tax and other direct expenses between Mombasa and Kampala.

## 2.1.7 Railway and Other Transport Modes

### (1) Railway Service

#### 1) Network

When Uganda Railways Corporation was established in 1977, it inherited the assets of the East African Railways Corporation which consisted largely of old tracks, old wagons, and light locomotives with poor repair facilities. The railway network stretches 1,264 km in total which comprise of the following:

- 251 km main line from Kampala to Tororo/Malaba which is part of the international northern corridor between Kampala and Mombasa.
- Spur lines of 15 km to the Jinja and Prot Bell ferry terminals on Lake Victoria ferry routes between Kisumu (Kenya) and Port Bell and between Mwanza (Tanzania), and occasionally Jinja.
- 333 km western line from Kampala to Kasese.
- 502 km northern line from Tororo to Pakwach.
- 163 km Busoga loop line.

Subsequently, the railway is yearly losing its market share due to competitions with road transport. As such the Uganda Government decided to introduce the privatization scheme of the railway and a concession was given to Rift Valley Railway Ltd (RVR) in 2006 including the railway lines in Uganda and Kenya as well. The RVR covers the railway lines between Kampala – Malaba and Kampala – Port Bell, which caters to cargo trains only. Other lines are still connected by railway but currently not in service.

#### 2) Operation Service

In terms of Kampala and Malaba line, the railway operation is divided into three sections:

- Kampala – Jinja
- Jinja – Tororo
- Tororo – Malaba

Table 2.2.18 shows the frequency of services by section including the line between Kampala and Port Bell.

**Table 2.1.18 Frequency of Services**

Section	Distance (km)	Frequency /day (train)	Operation time
Kampala - Jinja	91	6 (Westbound) 5 (Eastbound)	23:00,10:00, 12:00,17:00, 21:00,22:00 (01:10, 04:00, 21:12, 23:00, 15:10)
Jinja - Tororo	144	5 (Eastbound) 5 (Westbound)	04:47, 06:30, 10:30, 15:35, 20:05 (04:47, 06:30, 10:30, 15:35, 20:05)
Tororo - Malaba	16	5 (Eastbound) 5 (Westbound)	07:00, 10:00, 14:00, 18:00, 22:30 (07:00, 10:00, 14:00, 18:00, 22:30)
Kampala – Port Bell	8	3 (Eastbound) 3 (Westbound)	10:00, 14:00, 17:00 (12:00, 16:00, 18:30)

Source: RVR

Note: ( ) in operation time is up direction

### 3) Cargo Volume

Port Bell and Jinja Ports have siding lines to the piers managed by RVR, three routes are operated at this moment, i.e. via Malaba, Kisumu (Kenya) and Mwanza (Tanzania). The cargo via Kisumu and Mwanza are transported by ship through the lake. Out of the three lines, the Malaba line carries the most freight compared to the other routes. Table 2.2.19 shows the railway cargo statistics on the routes and Figure 2.1.6 shows the past trend via Malaba route only.

**Table 2.1.19 Cargo Traffic by Railway (Uganda Only)**

(Unit: 1000 tons)

Kind	Route	2001	2002	2003* <sup>1</sup>	2004	2005	2006	2007* <sup>2</sup>	2008* <sup>3</sup>
Import	Malaba	137.9	229.7	421.5	433.6	462.2	486.0	472.9	422.2
	Kisumu	381.0	322.1	68.8	70.8	48.0	11.6	0.0	-
	Mwanza	201.6	177.8	240.3	247.2	159.9	95.9	36.8	-
	S. Total	720.5	729.6	730.6	751.6	670.1	593.5	509.7	422.2
Export	Malaba	4.9	4.4	7.3	7.5	15.5	27.4	51.5	41.7
	Kisumu	66.7	66.0	16.5	17.0	7.9	0.2	0.0	-
	Mwanza	40.0	70.1	53.0	54.5	42.2	28.5	26.1	-
	S. Total	111.6	140.5	76.8	79.0	65.6	56.1	77.6	41.7
Foreign Trade		832.1	870.1	807.3	830.6	735.7	649.6	587.3	463.9
Domestic		24.2	33.6	46.9	48.2	19.3	25.5	26.4	38.4
G. Total		856.3	903.7	854.2	878.8	755.0	675.1	613.8	502.3

Source: RVR and Northern Corridor Pre-Feasibility Study, 2007

Note: \*1 As only total is known, breakdown is estimation

\*2 Annual volume via Mwanza is estimated from 2 months data

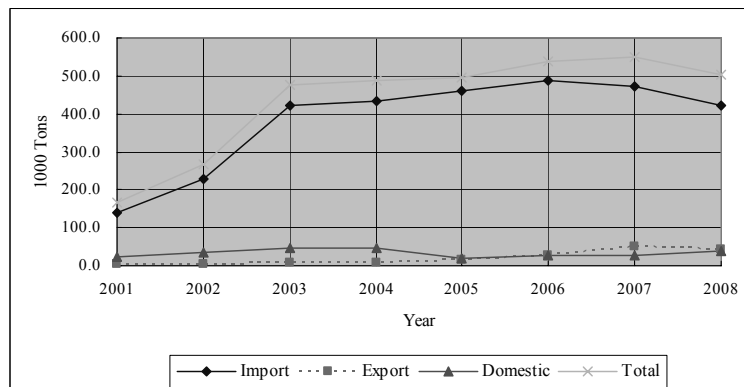
\*3 Figures are estimated from 10 months data.

\*4 - means unknown in 2008

The following features are observed:

- Import via Malaba is dominant
- Cargo via Kisumu disappeared
- Cargo via Mwanza is drastically declining
- The trend in railway cargo has been for a moderate increase.

Based on the railway cargo statistics, domestic cargo represents a small portion of the total, and import cargo traffic via Malaba comprises the majority of the cargo carried.



**Figure 2.1.6 Past Trend of Railway Cargo via Malaba**

#### 4) Accidents

After Uganda Railway Corporation took responsibility from the East African Railway Corporation, railway accidents have been one of the problems due to lack of maintenance over the past years and RVR is currently facing the same problem. Table 2.1.20 shows the statistics on railway accidents. According to the statistics, derailment occupies a dominant position showing more than 80 cases per year.

**Table 2.1.20 Railway Accidents**

Year	Section			Derailment	Overturning	At level crossing
2007	KLA	-	JJS	18	2	8
	JJS	-	TOR	47	3	9
	TOR	-	MLB	19	2	1
	Total			84	7	18
2008(Jan - Oct)	KLA	-	JJS	23	0	7
	JJS	-	TOR	52	3	1
	TOR	-	MLB	8	0	0
	Total			83	3	8

Source: RVR

Note: KLA (Kampala), JJS (Jinja), TOR (TORORO).

#### 5) Container Transport Rate

Table 2.1.21 shows the transport rates for containers.

**Table 2.1.21 Rates for Containers**

From	To	(Unit: USD)				
		2x20' (each)	1x20' (Heavy)	20' (empty)	40'	40' (empty)
MBS	MLB/KSM	9,83	1,663	771	1,663	1,512
	TOR	1,361	2,419		2,419	
	MBL	1,386	2,469		2,469	
	JIS	1,550	2,797		2,797	
	KLA	1,613	2,922		2,922	
NRB	MLB/KSM	756	1,210	514	1,210	1,028
	TOR	1,134	1,965		1,965	
	MBL	1,159	2,016		2,016	
	JIS	1,323	2,343		2,343	
	KLA	1,386	2,469		2,469	

Source: RVR

Note: MLB (Malaba), KSM (Kisumu), TOR (Tororo), MBL (Malaba), JIS (Jinja), KLA (Kampala).

#### (2) Water Transport

Waterways once played an important role in import and export traffic for Uganda. The Ministry of Works and Transport and URC own and manage the ports of Port Bell and Jinja. Uganda Railway Corporation had three wagon ferries, which were acquired in 1983 – 84, to service Kisumu (Kenya), Port Bell and Mwanza (Tanzania) on Lake Victoria. Unfortunately one of the wagon ferries sank a few years ago and at this moment attempts are being made to repair the remaining two ferries but their return to the service is uncertain.



Jinja Pier has a railway siding and specializes in cement product transported by the railway from Tororo to Jinja. The cement is exported to Mwanza (Tanzania) by ship. According to the CPC Freight Services, the estimated total volume is around 800 tons / month.

### (3) Air Transport

Uganda's national air transport system consists of 20 airports and airfields distributed throughout the country. The major part of these assets are owned, managed and run by the Civil Aviation Authority of Uganda (CAA). The airport classification is patterned after the USA's Federal Aviation Authority (FAA) adjusted accordingly to suit the special conditions in Uganda.

- Category 1: Air Carrier/Cargo (AC/C) airport for long haul routes.
- Category 2: Transport/Corporate (T/C) airports intended to serve as a regional entry-exit point to a country with future potential for upgrading to AC/C for short-haul routes.
- Category 3: General utility (G/U) airfields to serve small passenger aircraft.

## **2.2 National Development Plans and Strategies**

A Five-year Development Plan in Uganda is now in the compilation stage and a Poverty Eradication Action Plan (PEAP) is to be created as a national development goal. The transport development plan and strategy are under the National Transport Sector Master Plan, which was issued in March 2005.

### **2.2.1 Poverty Eradication Action Plan**

During the 1990s, the income rose and poverty fell dramatically. However, since 2000, poverty has risen, with the proportion of people below the poverty line rising from 34% in 2000 to 38% in 2003. To improve the situation and attain the national goal, it was proposed to support both the agricultural and industrial sectors from the viewpoint of macroeconomic management associated with moderate population increase.

Four core challenges are conceived for the Poverty Eradication Action Plan (PEAP) and these include: (a) the restoration of security, (b) restoring sustainable growth in the incomes of the poor, (c) human development, (d) using public resources transparently and effectively to eradicate poverty. In order to meet these challenges, the PEAP is grouped under the following five pillars:

- Economic management
- Enhancing production, competitiveness and incomes
- Security, conflict-resolution and disaster-management
- Good governance
- Human development

From the viewpoint of transport infrastructure development, the following are mentioned in the pillars:

- Improvement in transport infrastructure and actions to improve rural access in the "Economic Management Pillar".
- There is a need to increase funding for maintenance and community roads, which have been historically neglected and will receive increased attention in the "Enhancing production, competitiveness and incomes pillar".

- In terms of railways, the Government finalized the joint concession of the operations and explored private sector incentives for rehabilitation of lines and regional links. In addition, there is a need for further investment at Entebbe Airfield in “Enhancing production, competitiveness and incomes pillar”.

In this context, the Study focuses on ensuring international and domestic traffic as well as making it possible to cross the River Nile without causing any disruption in Jinja. Further regional development in the study area is another focal point through improvement of the approach roads of the new bridge route from the surrounding areas to the CBD in Jinja. Area development is expected to meet regional requirements such as integrating a Jinja conurbation that includes Njeru Town and the neighbouring suburban areas, providing well arranged new residential areas and promoting new commercial and industrial development to enhance job opportunities.

## 2.2.2 Future Socio-economic Framework

The objectives and indicators of the Millennium Development Goals are shown in Table 2.2.1.

**Table 2.2.1 Key Indicators**

Item	2000	2003	2005/06	2015
Poverty head count	33.8	37.7	31.1	28.0
Net enrolment ratio in primary education	84.0	90.0	84.0	100
Literacy rate 15-24 year old	78.8	80.0	84.0	
Ratio of literate women to men 15-24 year old	0.84	0.90	0.92	1.00
Share of women in wage employment		39.2	28.2	50.0
Infant mortality rate	88.4		76.0	31.0
Maternal mortality rate (per 100,000)	505		435	131
Proportion of births attended by skilled health personnel	39.0		41.1	90.0
Proportion of population with access to improved water resource (urban)	87.0	84.0		100.0
Proportion of population with access to improved water resource (rural)	57.0	53.5	58.5	62.0

Source: Millennium Development Goals / Poverty Eradication Action Plan

Based on the Long Term Expenditure Framework prepared for PEAP that was issued by the Ministry of Finance, Planning and Economic Development, the future socio-economic framework is shown in Table 2.2.2.

**Table 2.2.2 Future Framework**

Items	2002/03	2013/14	Period Avg.
Population* <sup>1</sup> (1000 persons)	24,324	33,087	2.6%
Annual GDP Growth	5.20%	6.50%	6.00%
Annual inflation	5.70%	3.50%	3.80%
Real exchange rate depreciation	3.0%	2.0%	2.40%
Private investment (% GDP)	15.60%	22.40%	-
Domestic saving (% GDP)	6.60%	13.60%	-
Private sector credit (% GDP)	7.10%	17.50%	-
Exports (% GDP)	12.30%	15.40%	-
Export (\$m)	774	1699	-
Trade deficit (% GDP)	-14.00%	-15.00%	-
NPV Debt/Export	305%	187%	-
Domestic revenue (% GDP)	12.10%	15.80%	-
Fiscal deficit (% GDP)	-11.20%	-6.50%	-
Donor aid (% GDP)	12.10%	8.50%	-
Government Expenditure (% GDP)	23.40%	22.50%	-

Source: Long Term Expenditure Framework by Ministry of Finance, Planning and Economic Development

Note: \*1 This number comes from National Transport Sector Master Plan and the average growth is from 2008 to 2013

### 2.2.3 Road Development Plans

Transportation development plan in Uganda has been included in the National Transport Sector Master Plan (NTSMP), issued in March 2005. The plan contains all modes of transport (road, railway, waterway and airport), showing the trend of direction for long term development strategy.

- (1) Long Term Development Plan
  - 1) 15-Year Plan

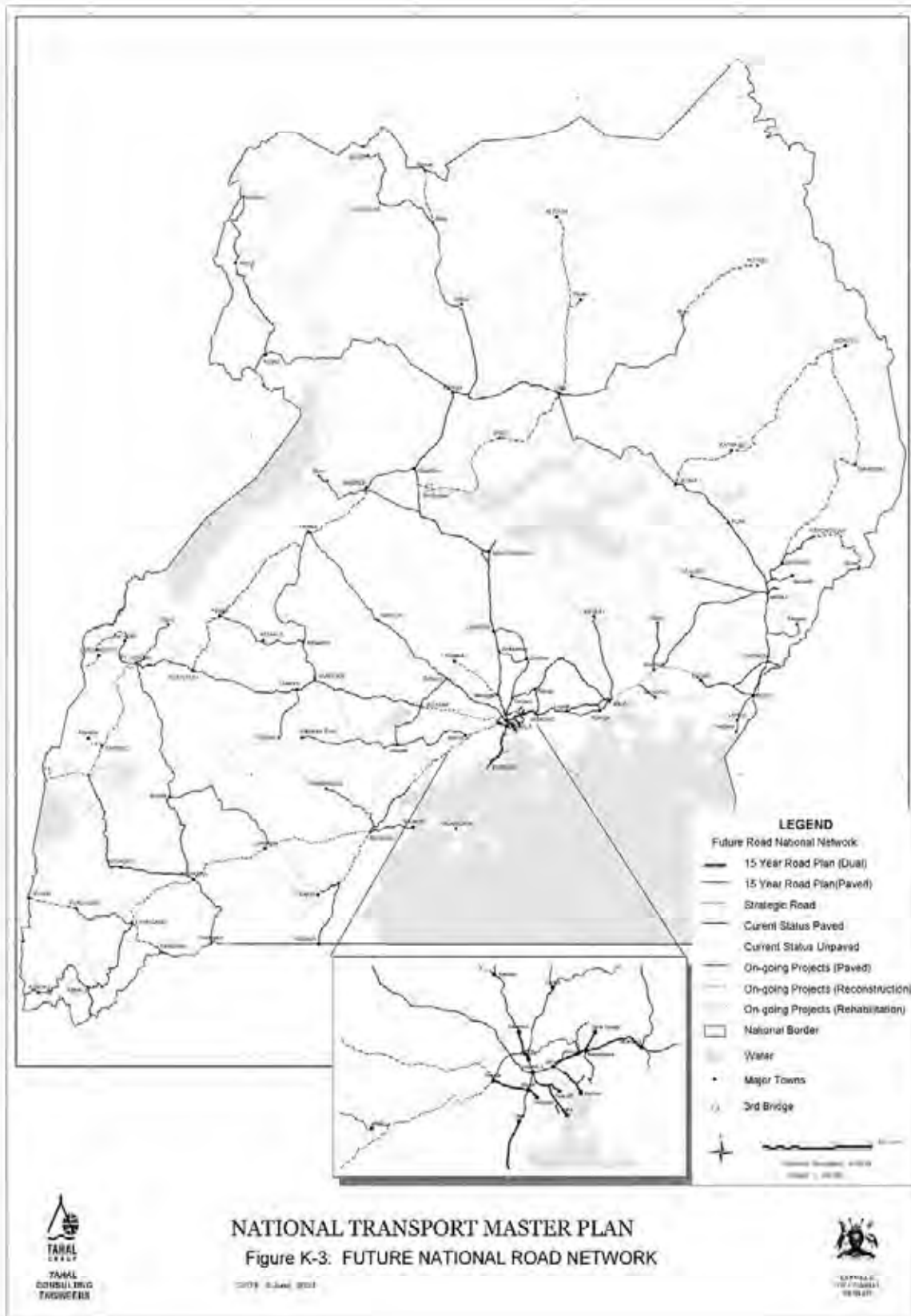
According to the NTSMP, long term developments over a 15-year planning horizon from 2003 to 2018 are shown in Figure 2.2.1.

Major projects are divided into the following three categories:

- 15-year road plan (dual carriageway): mostly the roads around Kampala
- 15-year plan (paved): linking the district centres
- Strategic roads: establishing a network in remote areas

The plan specifically indicated the following two topics relative to the Feasibility Study.

- Replacement of the River Nile Crossing to avoid any disruptions from the imposition and strict enforcement of legal or reduced vehicle load limits or from interruptions for any extended structural repairs that may be necessary.
- New ferry development to cater the traffic for Nabuganyi and Mbulamuti. (around 50km north of Jinja and located on either side of the River Nile)



Source: National Transport Sector Master Plan

**Figure 2.2.1 Long Term Road Development Plan**

## 2) Required Resources

The road investment plan for the “15-year plan” is shown in Table 2.2.3.

**Table 2.2.3 Road Investment Plan for 15-Year Plan**

(Unit: US\$ Million)

Category	Long Term Needs	Current Allocation	Shortfall	Remarks
National Roads (upgrading)	44.9	20	24.9	Only new economically viable projects.
National Roads (maintenance)	31	31	0	Includes reconstruction, rehabilitation, overlay, re-gravelling and routine maintenance.
District Roads	33	22.5	10.5	
Urban Roads	11.1	5	6.1	Outside GKMA
Community Roads	4.6	0.2	4.4	Capital and maintenance
Black Spot Elimination	5.1	0	5.1	Over 5 years
Special Projects	2.9	0	2.9	Over 5 years

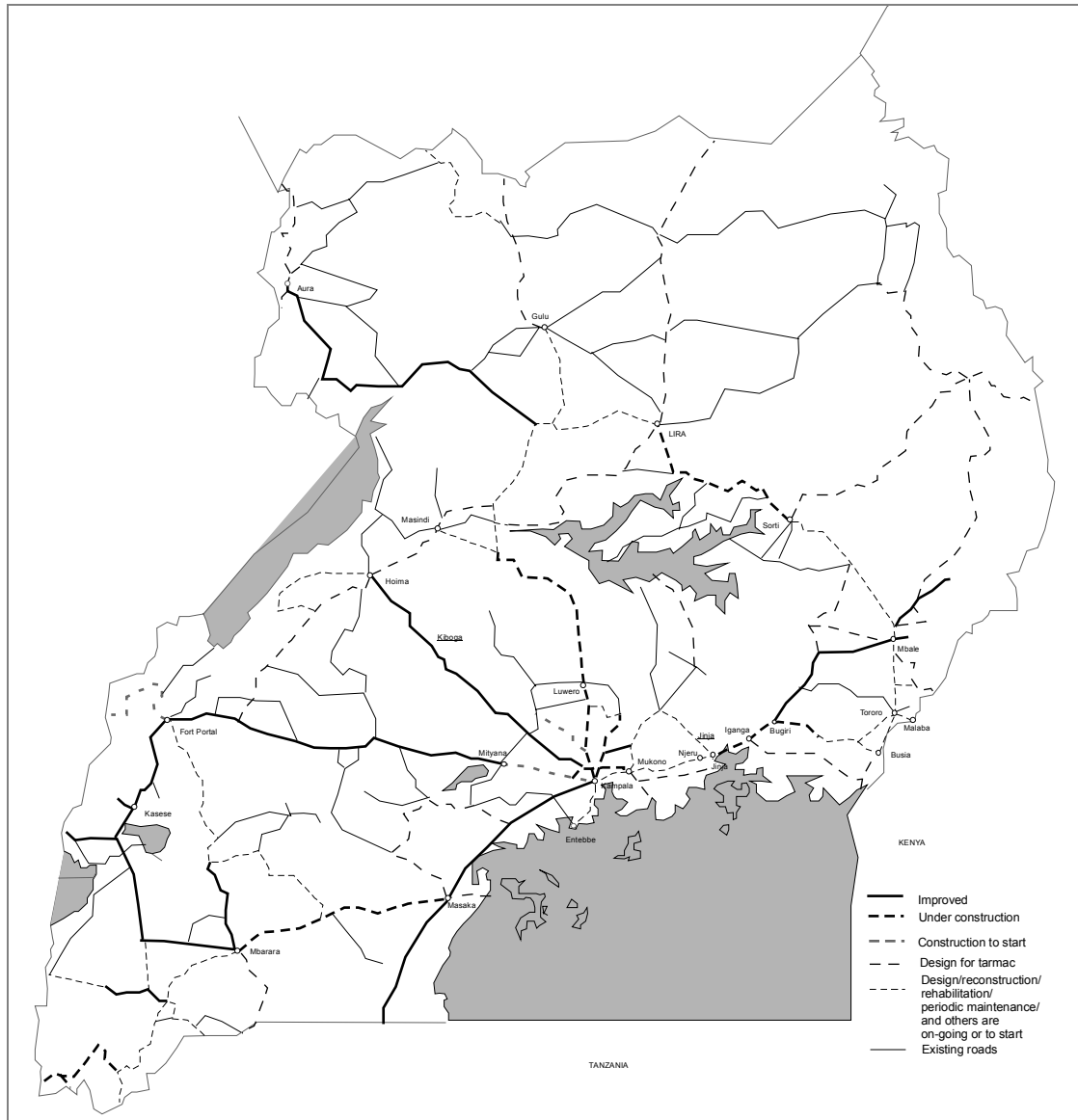
Source: National Transport Sector Master Plan

## (2) Implementation Plan

### 1) Overview of the Plan

Regarding road implementation plan, UNRA has updated the implementation program as shown in Figure 2.2.2. As shown in the figure, the implementation plan is mainly divided into the following five categories:

- Improved
- Under construction
- Construction to start
- Design for tarmac
- Others are on-going or will start.



Source: UNRA

**Figure 2.2.2 Implementation Plan**

2) Draft 10-year Investment Program

a) Major projects

In addition to the road plan mentioned above, based on the review of the past road plan, UNRA is drafting a 10-year road and bridge investment program to be implemented from 2008 to 2018 to meet the current road development issues and forthcoming road development requirements. Table 2.2.4 shows the projects committed for the 10-year investment plans.

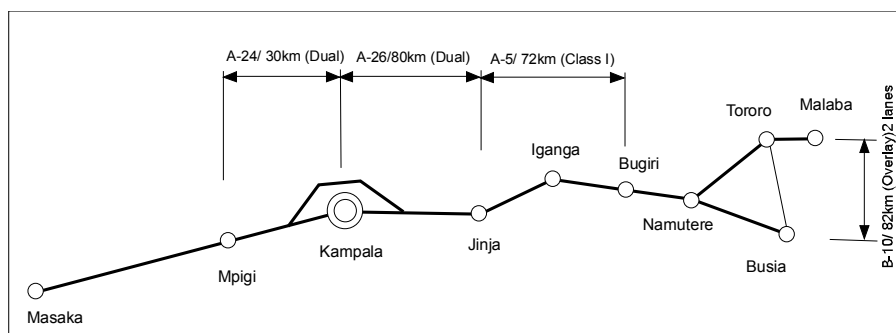
**Table 2.2.4 Committed Projects in 10-Year Road Investment Plan**

Ref. no.	Road Name	Intervention	km	Start Year	End Year	Priority	Work description	Financial cost (US\$M)	Financing Source
A.4	Kampala Bypass	New Road Construction (Dual/Single C-Way)	21	2004	2008	1	DD		EU
							CS		
							CW	12.232	
							LA		
A.5	Jinja - Bugiri	Reconstruction (Class I)	72	2004	2009	1	DD		EU
							CS	1.500	
							CW	33.000	
							LA		
A.2 4	Kibuye - Busega - Mpigi (Dualling)	Capacity Improvement to Dual C-Way	30	2010	2012	4	DD	4.200	GOU
							CS	3.600	
							CW	60.000	
							LA	12.000	
A.2 5	Kampala - Entebbe (Design for Dualling/Alternative Route)	Capacity Improvement to Dual C-Way	35	2010	2012	4	DD	4.900	GOU
							CS	4.200	
							CW	70.000	
							LA	14.000	
A.2 6	Kampala - Jinja (Dualling)	Capacity Improvement to Dual C-Way	80	2010	2012	4	DD	11.200	GOU
							CS	9.600	
							CW	160.000	
							LA	32.000	
A.2 7	Dualling Kampala Northern Bypass (NCR)	Capacity Improvement to Dual C-Way	17	2010	2012	4	DD	2.380	GOU
							CS	2.040	
							CW	34.000	
							LA	6.800	
B.1 0	Malaba/Busia - Bugiri (overlay)	Structural Overlay	82.0	2009	2010	4	DD	0.123	GOU
							CS	0.820	
							CW	16.400	
							LA	0.410	

Source: 10 Year Investment Plan, UNRA

Note: DD/Design, CS/Supervise, CW/Construction works, LA/Land acquisition

According to the investment program, the major concerns are capacity improvement to dual carriageway for international trunk roads, particularly the northern corridor, to meet the growing traffic demand and heavy truck traffic. Figure 2.2.3 shows the dual carriageway and related stretches to be developed.



**Figure 2.2.3 Committed Dual Carriageway and Overlay Projects**

However, in the latest budgetary speech, in June 2008, it was mentioned that all the northern corridor stretches from Katuna to Malaba / Busia will be widened to dual carriageway using funds from the Government of Uganda.

Likewise, the investment program proposed the repair works for the existing Nalubaale Dam Bridge and the construction of a new bridge as shown in Table 2.2.5 although these are not yet officially committed.

**Table 2.2.5 Bridge Projects (not committed)**

Ref. no.	Road Name	Intervention	Start Year	End Year	Priority	Work description	Financial cost (US\$M)	Financing Source
C.4	Nile Bridge (Repairs)	Rehabilitation/Repair	2008	2009	1	DD	0.15	GOU
						CS	0.375	
						CW	2.5	
						LA	0	
C.5	New Nile Bridge	New Bridge Construction	2008	2013	1	DD	2.700	
						CS	2.400	
						CW	30.000	
						LA	0.210	

Source: 10 Year Investment Plan, UNRA

Note: DD/Design, CS/Supervise, CW/Construction works, LA/Land acquisition

#### b) Investment Costs

The total investment costs over 10 years by category are listed in Table 2.2.6.

**Table 2.2.6 Investment Costs**

Item	Projects	(US\$M)
A	Road Development Projects	3,302.0
B	Road Rehabilitation/Staged Reconstruction Schemes	489.9
C	Bridge Schemes	92.9
D	Ferry Schemes	33.6
E	Axle Load Control Schemes	33.9
F	Other Schemes	159.5
G	Road Maintenance	1,058.4
H	UNRA Administration	176.1
I	Audit Monitoring and Evaluation	2.5
Total		5,348.7

Source: Draft 10-Year Investment Plan, UNRA



## 2.2.4 Development Plans for the Railways and Other Transport Modes

### (1) Rift Valley Railway

In 2005, the Government of Uganda was expediting the conclusion of a joint concession between URC and KRC for the smooth railway operation under a privatization scheme. After the establishment of the Rift Valley Railway in 2006, however, railway operation became problematic in nature due to depleted availability of locomotives, frequent derauling accidents caused by deteriorated tracks and inefficient customs clearance procedures. Specifically, the Kenyan side was placed in a more serious condition that boomerang to the Ugandan side.

The Government of Uganda's (URC) role is to manage the railway assets, and operation is to be managed by Rift Valley Railway Ltd. They have plans to revive the western railway line connecting Kampala to Kasese and the line from Tororo and Lira. However, many difficulties have been encountered to revive these lines due to the current railway conditions.

The need for improvement of customs clearance was one of the bottlenecks for transit traffic for both road and railway transport, and for this reason EAC and WB have conceived the "one border one stop" for cross border facilitation. Actual innovation was made in Malaba, the border with Kenya based on this concept. Smoother railway operation is therefore expected due to this improvement.

### (2) EAC Proposal on Railways

EAC has other plans of adopting the standard gauge to all the railways in EAC to increase transport capacity. The primary problem however is the source of funding - because it would entail huge investment to materialize the concept.

### (3) Waterways

Water transport used to and still could play an important role for transporting imported and exported cargos through Lake Victoria, and for this to be undertaken, the ports of Port Bell and Jinja need to be revived to their former position. According to the latest budgetary speech, the procurement of one wagon ferry vessel (or container ship) within this fiscal year is being considered

### (4) Airport

#### 1) Demand Forecast

The NTSMP took the following annual average growth rates with 2002 as the base year:

- Global passengers: 4.8%
- Regional passengers: 4.5%
- Global cargo: 6.0%

According to CAA, the annual performance targets by phase are estimated as follows:

- Phase 1 (2004 – 2006): 520,000 passengers and 89,000 tons
- Phase 2 (2007 – 2012): 705,000 passengers and 143,000 tons
- Phase 3 (2013 – 2022): 1,350,000 passengers and 303,000 tons

#### 2) Development Plan

To meet the demand requirements, the following are the major development plans:

- Renovation of Kampala international Airport

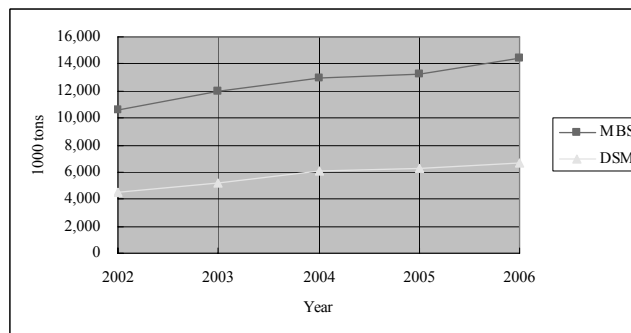
- Construction of a municipal airfield for Kampala
- Two more airfields are designated as part of the network (new Ntungamo airfield and existing Yumbe airfield)
- Improvement of Jinja airfield including upcountry airfields such as Tororo, Adjumani, Moyo and Nebbi are designated for the immediate plan stage (2004 – 2009).

## 2.2.5 Development Strategy of the Northern Corridor

### (1) Mombasa Port and Dar es Salaam Port

#### 1) Cargo Throughput

Mombasa Port, which is located in the northern corridor, and Dar es Salaam Port, which is located in the central corridor, are the two major deep sea ports in EAC. Considering that there are many land locked countries behind Kenya and Tanzania, the two ports are the international gateways for export and import. The two ports have been competing to strengthen their position in EAC. In terms of cargo throughputs of the ports, Mombasa Port occupies a dominant position compared to that of Dar es Salaam Port as shown in Figure 2.2.4.

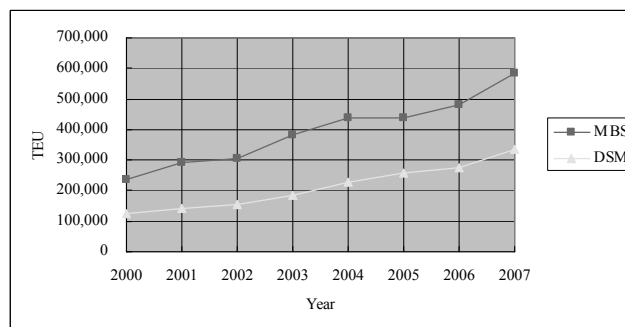


Source: KPA and TPA

**Figure 2.2.4 Cargo Throughput by Port**

#### 2) Containerization

Containerization is the main stream of cargo handling in the world nowadays. Figure 2.2.5 shows the past trend of container cargo throughput in both ports. Mombasa Port shows remarkable growth in these days.



Source: KPA and TPA

**Figure 2.2.5 Containerization**

3) Transit Cargo

a) Transit Cargo Ratio of Both Ports

Table 2.2.7 shows the ratio of transit and local cargo for MBS and DSM Ports. As can be seen, the volume of transit cargo of both ports is almost the same, ranging from 20% to 25%.

**Table 2.2.7 Transit Cargo Ratio**

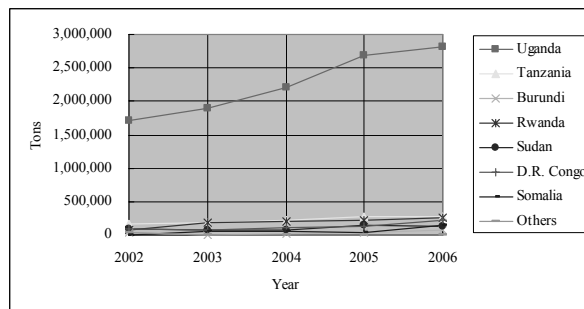
Year	DSM			MBS		
	Local	Transit	Total	Local	Transit	Total
2002	0.80	0.20	1.00	0.79	0.21	1.00
2003	0.79	0.21	1.00	0.79	0.21	1.00
2004	0.75	0.25	1.00	0.78	0.22	1.00
2005	0.75	0.25	1.00	0.73	0.27	1.00
2006	0.74	0.26	1.00	0.73	0.27	1.00

Source: KPA and TPA

b) Port Characteristics of Transit Cargoes

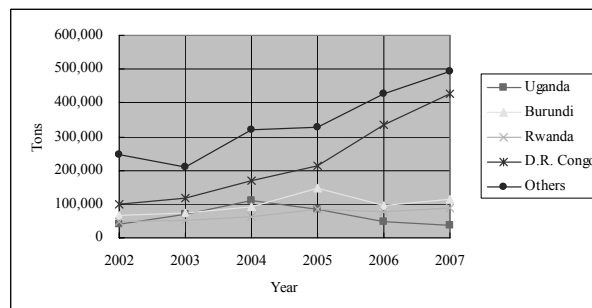
Figure 2.2.6 shows the transit cargoes of MBS by land locked countries. The transit cargo from Uganda is dominating accounting for as much as 2.8 million tons. For DSM Port shown in Figure 2.2.7, the transit cargo from Uganda is as low as 37thousand tons. This signifies that almost all the transit cargo from Uganda is through MBS Port.

Transit cargo traffic at Mombasa Port registered a remarkable growth rate of 10.2%, from 4.4 million tons in 2007 to 4.87 million tons in 2008. Individual transit countries have also increased and Uganda maintained her lead accounting for 75.9% of the transit market share. In 2008 the port catered to 3.7 million tons of Ugandan cargo up from 3.4 million tons handled in 2007 or representing a growth rate of 8.9%.



Source: KPA

**Figure 2.2.6 Transit Cargo of MBS by Country**



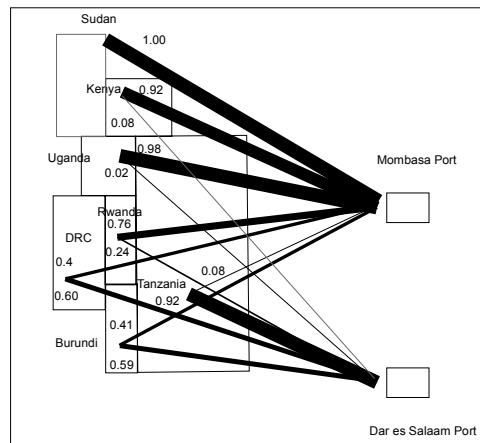
Source: KPA

**Figure 2.2.7 Transit Cargo of DSM by Country**

Other features of the transit cargo ratio of the ports are summarized as follows:

- Cargo from Tanzania using DSM accounts for around 92%, as compared with MBS at 8 %
- Cargo from Burundi is using both MBS and DSM almost evenly
- Cargo from Rwanda is mainly using MSB 76%, while DSM 24 %
- Cargo from Sudan and Somalia is using MBS.

Figure 2.2.8 shows the share of both ports for transit cargo.



Source: JICA Study Team

**Figure 2.2.8 Share of Ports in Transit Cargo**

## (2) Current Conditions of the Rail and Road Transport

### 1) Road Development

The northern corridor is provided with both road and railway transports, constructed many years ago. The road between Mombasa Port and Kampala is a two-lane single-carriageway except for some stretches. The road capacity is encountering problems on the accommodation of large trucks including semi trailers and full trailers due to inadequate road maintenance works especially in Kenya. The road condition in Uganda looks good but some pot holes still remain to be maintained.

Road for the central corridor, passes mainly through Tanzania, but development has been long delayed. The Government of Tanzania however is now vigorously pursuing road and railway development to catch up with the northern corridor. The road development between Dar es Salaam and Mwanza, where a major port is located in the southern shore of Lake Victoria, is scheduled for completion within a few years. Additionally, for the road towards Kigali, the Capital of Rwanda will soon be developed.

### 2) Railway Development

Ever since the operation of the railways was turned over to EAC in 1977, all countries with railway facilities were seriously caring railway operation and maintenance. The railways in Uganda and Kenya were privatized in 2006, and Rift Valley Railway Limited is operating the railways for both Uganda and Kenya. Despite the support by WB and EU on rolling stock improvement and infrastructure maintenance, however, the level of service in railway industry is still facing serious problems.

Railway condition for the central corridor is more or less the same as that in the northern corridor. Although the Tanzanian Railways Limited, which was awarded the concession to manage and operate efficiently and has operated in Tanzania since 2006, the transport volume

is still declining yearly. It appears that reviving the railway transport industry to where it used to be in the past would take longer than expected.

A master plan study for railways development for EAC was undertaken and a draft final report will be submitted in 2009. One main issue of the study is the introduction of the standard gauge to all the railways in EAC. However, sourcing of funds appears to be one of the vital problems.

### 3) Development Strategy

#### a) Relations with the Central Corridor

The Tanzanian Government is focusing on the central corridor development for road and railway. The road development between Dar es Salaam and Mwanza will be completed in the near future. Additionally, a feasibility study for railway development between Isaka (150 km north of Tabora) and Kigali (Rwanda) is considering the use of standard gauge but outsourcing funds for its implementation has not yet been finalized. All trends indicate that the central corridor will be competing with the northern corridor with transit cargoes sharing from / to Rwanda and Burundi in the near future. For this reason, the northern corridor needs to establish a smooth and efficient transport system network including the use of railways. It is very important for the northern corridor to maintain its role from a national development viewpoint of Uganda.

#### b) No Detour Route

In the event that the current Nalubaale Dam Bridge is closed to traffic, all vehicles travelling to and from Kampala will need to detour via Soroti, Lira and Nakasongola which is quite far. Besides, certain temporary bridges for the crossing of local rivers would have to be urgently provided on that detour. If this scheme is pursued, it would inevitably cause huge economic loss for Uganda and the neighbouring countries.

#### c) Inefficient Railway and Waterway Transports

Although railway and water transport is struggling to revive their performance to previous levels, revival would be very difficult unless huge investment is made. These industries are falling into chronic recession due to declining customers. This simply means that the road transport will continue to hold the dominant role and keep an exclusive position in cargo transport industry.

## **2.3 Current Conditions of the Study Area**

### **2.3.1 Population**

#### (1) Jinja Municipality

##### 1) Development Process

The railway facility in Mombasa was constructed in 1895 linking Kampala in 1931 via Nairobi. Jinja is one of the key relay stations for the construction. During the construction works, many labourers from India went to Jinja for the construction works and trade was established to serve the Indians who lived in Jinja.

The best residential neighbourhoods were organized by Indian traders on the right bank of the River Nile overlooking Ripon Falls near the market site since the transmigration of European and India nationals to Jinja. Over time, Jinja has grown dramatically, principally due to the influx of Indian labourers and traders.

The first township in Jinja was declared in 1906 and a grid pattern road network surrounding Busoga Square (backside of City Hall) was opened to the public to accommodate residential houses. The planning however, focused mainly on the provision of housing program for Jinja's European and Indian inhabitants. Thereafter in the late 1930's to 1940's, emphasis was placed on upgrading and redeveloping the land use plan for informal African settlers within Jinja town to meet the growing needs of the inhabitants.

Kilembe Mine (copper smelter) in Masese was established in 1948, before the Independence of Uganda, to take advantage of abundant but rather cheap electric power. At that time the hydroelectric power plant was still under construction. The first copper was produced in 1956. After World War II, many industrial factories relocated to Jinja to take advantage of the cheap electrical power, abundant water resources and numerous labourers residing in Jinja. This was the beginning of the industrial evolution of Jinja.

An interim plan was considered in 1948 and a first class residential area was proposed in Nalufenya for European neighbourhood units to separate themselves from the African neighbourhood in Walukuba. Industrial nationalization policy was introduced in the late 70's and many Europeans and Indians were expelled from the country including from Jinja. Thereafter a liberalization policy triggered the decline in industrial activities coupled with the Asian economic crisis that caused the increase in the cost of electrical power.

## 2) Current Population

Table 2.3.1 shows the current population in Jinja by sub-division totalling some 71 thousand people in 2002.

**Table 2.3.1 Current Population by Sub-division (2002)**

Municipality	Division	Households	Male	Female	Total	Av. H size
Jinja	Central	5,519	13,514	13,184	26,698	4.8
	Mpumuddle /Kimaka	4,220	10,788	9,113	19,901	4.7
	Walukuba /Masese	6,795	12,353	12,261	24,614	3.6
	Total	16,534	36,655	34,558	71,213	4.3

Source: 2002 Population & Housing Census Analytical Report

## 3) Ethnic Background

Numerous industrial factories exist in Jinja. Many are being managed by UK nationals for which labourers were recruited from many countries including India and Asia from 1960 to 1970. These migrants and their descendants are still living in Jinja. Most of them are engaged in business or as employees.

The housing and population census in 1991 disclosed that the dominant tribe is the Basoga followed by smaller diversified groups including Baganda, Basamia, Itesot, Bakiga, Banyoro, Banyole, Bagwere, Bagisu, Acholi, Luhbara among others. Although acute friction among the tribes appears not to exist, various tribal communities led to residential segregation thereby separating the communities by group. The residential areas are divided into several sub-areas by population density reflecting the existence of segregated community groups.

(2) Njeru Town

1) Administrative Composition

Njeru Town Council was a unit of Jinja Municipal Council until 1969. However, it is now under the administration of Buikwe County of Mukono District. Njeru Town Council consists of four (4) parishes which are further divided into villages as shown in Table 2.3.2.

**Table 2.3.2 Administrative Sub-units in Njeru**

Town Council	Parish / Ward	Villages
Njeru	Njeru North (6)	Model farm, Triangle zone, Naava, Mukwanya, Bujowali, Nkokonjeru
	Njeru Sough (12)	Kiryowa II, Kinabi, Bugungu, Bukamba, Nsenge, Kanyongoga, Bulungu, Nakakumbi, Bulyankuyege, Buziika, Buyiizi, Bukalaba
	Njeru East (7)	Bukaya east, Bukaya west, Upper Naava, Lower Naava, UEB, Naminy north, Naminy south
	Njeru West (10)	Kasanja, Numuwaya, Kizungu, Wampara, Nakibizzi, Lugazi II, Naava zone, Kyabaggu, Naminzi, Ntida zone

Source: Population Census 2002

2) Development Process

Ribbon type development is observed in Njeru Town along with two primary roads: i.e., Mbikko – Jinja Road linking Kampala and Bukaya – Nyenza Road which is located in the southern part of the town. Some factories producing textile, brewery and carton boxes are located along the River Nile near Nalubaale Dam.

3) Population

Table 2.3.3 shows the current population in Njeru by parish totalling around 51 thousand people in 2002.

**Table 2.3.3 Population**

(Unit: Persons)

Parish	2002
Njeru West	29,825
Njeru East	6,883
Njeru North	3,100
Njeru South	11,352
Total	51,160

Source: Population Census 2002

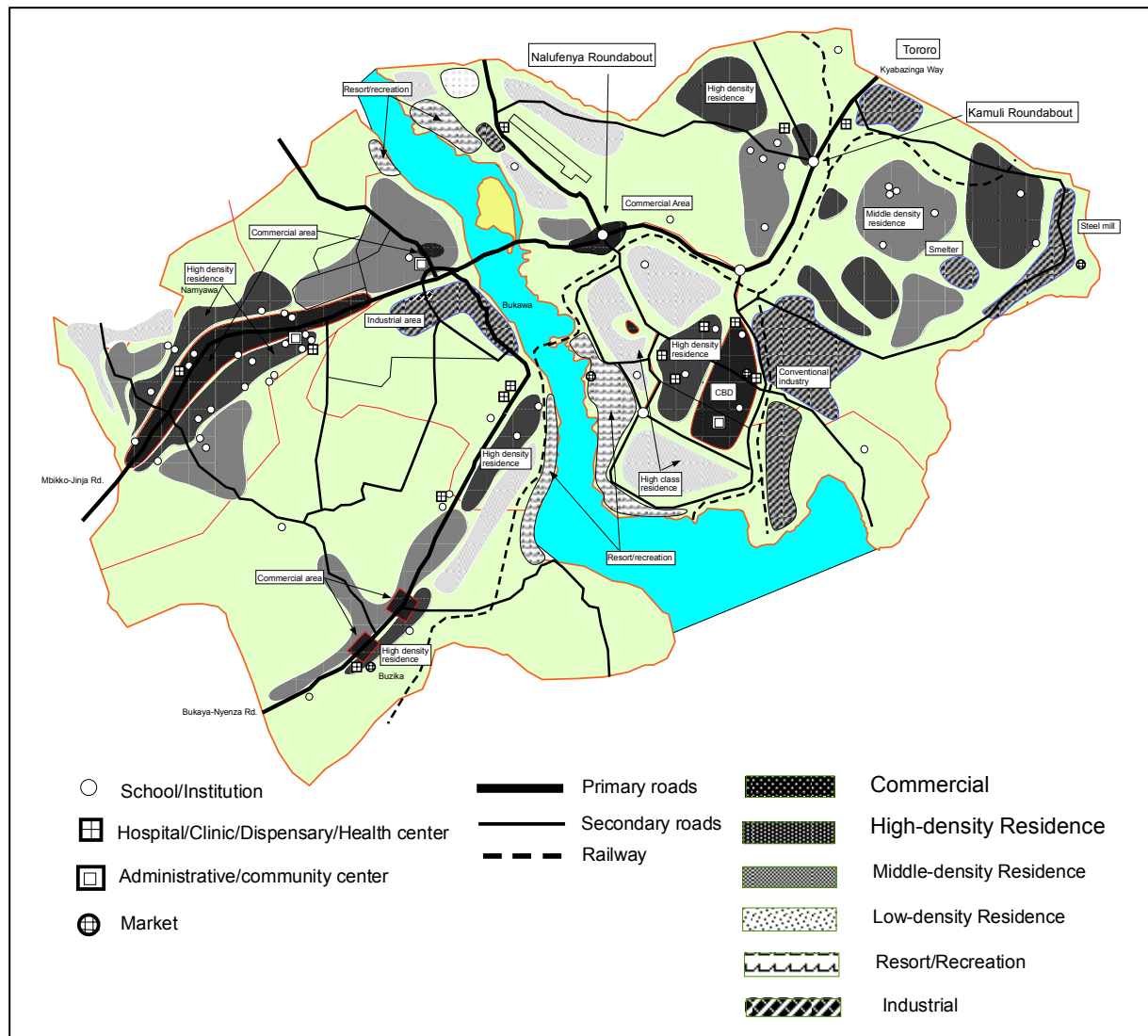
4) Ethnic Background

Mixture of people with different tribes also exists in Njeru. The tribes composed of Ganga, Soga, Gishu, Adhola and Samia. Conflicts among the tribes as appear to be nonexistent as they are peacefully living in their own tribal communities.

**2.3.2 Existing Land Use in the Study Area**

(1) Jinja Municipality

Figure 2.3.1 shows the current land use plan in the study area with the following main features as described hereinafter.



**Figure 2.3.1 Current Land Use in the Study Area**

1) Commercial Area

The central business district (CBD) is located at the centre of the city and is serving the neighbouring region as a growth centre. Another CBD comprising of fuel stations and small retail shops including restaurants is located in the vicinity of Nalufenya Roundabout.

2) Industrial Area

Reflecting the development method of the city, the industrial area is divided into four main areas: former copper smelter area, steel corporation area, conventional factory area located in the centre of the city near Lake Victoria along the railway and steel rolling mill area along the primary road connecting to Tororo.

3) Residential Area

The residential areas are established in several places also reflecting the past development method of the city. Nalufenya is known as a high class residential area, where European and Indian inhabitants have been residing since the beginning of the city development. High density residential areas neighbouring the CBD is serving labourers, who are working in factories, due to convenience in commuting. Other residential areas are located near manufacturing plants along the primary and secondary roads in the city.



#### 4) Resort and Recreation Area

One is located along the River Nile including golf course near the estuary and another is located in the north west of the city along the River Nile as well. Many hotels and guest houses are located in resort and recreation areas to cater to the tourism industry. Rafting and canoeing are the unique form of recreational activities for the tourism industry that take advantage of the existence of many falls. Nile Resort Hotel located near the airfield is one of bases for these activities.

The area along Lake Victoria near the estuary of the River Nile is also serving as water-related resort recreational activities.

### (2) Njeru Town

#### 1) Overview

The land use pattern of Njeru Town differs from Jinja. Spontaneous development of commercial and residential areas along the primary roads characterizes the land use plan in Njeru Town while planned area development is being implemented in Jinja Municipality. Two main land use plans are being developed along Mbikko – Jinja Road linking Kampala and Bukaya – Nyanza Road. Other large scale and small scale development are geared towards agriculture.

#### 2) Commercial Area

Three commercial areas exist. One is located in Namyawa and its neighbouring areas, forming the central commercial area along the Mbikko – Jinja Road in Njeru Town. The other two are located in the south-west in the Town along Bukaya – Nyenga Road.

#### 3) Industrial Area

Only one industrial area is located at Bukaya Ward along the River Nile. The industrial area comprised a textile factory, a brewery plant, and carton box factories among others. Some of the factories/plants are making use of the water from the River Nile.

#### 4) Residential Area

Most residential areas are located along primary and secondary roads. High density residential areas are located adjacent to the primary roads. Middle and low density residential areas are located behind the high density areas.

#### 5) Resort and Recreation Area

Two resort and recreation areas are available. One is located near the estuary of the River Nile while the other one is located at the opposite side of Nile Resort Hotel in Jinja.

### 2.3.3 Major Public Facility Distribution

The location of major public facilities is shown in Figure 2.3.1. Features of the facilities are described as follows.

#### (1) Jinja Municipality

##### 1) School

Primary, secondary and high schools are provided in and around the residential areas following the planning concept of the neighbourhood unit.

2) Hospital, Clinic, Dispensary and Health Centre

Several hospitals and clinics are located in the centre of the city and near Kamuli Roundabout. Another health centre is located near the southwest of the airfield.

3) Market

One large market is located in the centre of the city. A local market is located to the northeast of the city near the steel corporation area.

4) Administrative and Community Centre

Jinja Municipality Council is located at the centre of the city.

(2) Njeru Town

1) School

Schools are provided in locations following the residential arrangement: one is along Mbikko – Jinja Road and the other is along Bukaya – Nyenga Road. Some primary and secondary schools are located adjacent to churches and mosques.

2) Hospital, Dispensary and Health Centre

The same distribution pattern as the schools are being followed for hospitals, dispensaries and health centres.

3) Market

One market is located in Buzika area, southwest of the town.

4) Administrative and Community Centre

Njeru Town Council is located near the Njeru Intersection (Gaya Roundabout) and one community centre is provided in Namaya area.

### **2.3.4 Road Network and Conditions**

(1) Existing Road Network

The existing road network in the study area consists of National Road No.2 (Kampala-Jinja Road) and 4 (Jinja-Tororo Road) as an axis which traverse from east to west and its connecting trunk roads mainly run in north–south direction as shown in Figure 2.3.2.

The road network in Jinja City is well developed as compared with that of Njeru Town. Jinja's road network is developed from the centre of the City towards Kenya. Kampala-Jinja Road and Mpumudde Road (Jinja-Tororo Road) have been identified as an International Trunk Road based on the road category of UNRA. The Mpumudde Road has been improved to dual carriageway with financial assistance from EU, while Jinja-Tororo Road, a continuation of the Mpumudde Road has also been constructed to accommodate dual carriageway traffic.

The existing road network in the study area consists of 3 types of road based on their functions as described hereunder.

1) Inter-city Roads

Description: Road that links international important centres, the connection between the national road system and those of neighbouring cities. Major function is to provide speedy mobility.

The following roads are identified as Inter-city Roads:

- Kampala - Jinja Road and Mpumudde Road are the only corridor connecting Jinja City and Njeru Town. UNRA is the administrator of this road.
- Jinja – Tororo Road is a continuation of the Kampala - Jinja road. UNRA is also the administrator of this road.

## 2) Primary Area Trunk Roads

Description: Road linking locally important centres, or to other important centres, or to higher class roads and linkage between locally important traffic generators and their area hinterland. Major function is to provide both mobility and access.

The following roads are identified as Secondary Road,

- Nalufenya-Clove-Alidina Road
- Queen Elizabeth Road
- Butembe Road
- Mpumudde Road
- Bukaya-Nyenga Road
- Kayunga Road

## 3) Secondary Area Trunk Roads

Description: Road links to minor centre (market/local centre) and other roads that could be accessed by motorized vehicles. Primary objective is to access the secondary road system. Other than Inter-city Road, the roads are administered by local councils. The road network is shown in Figure 2.3.2.

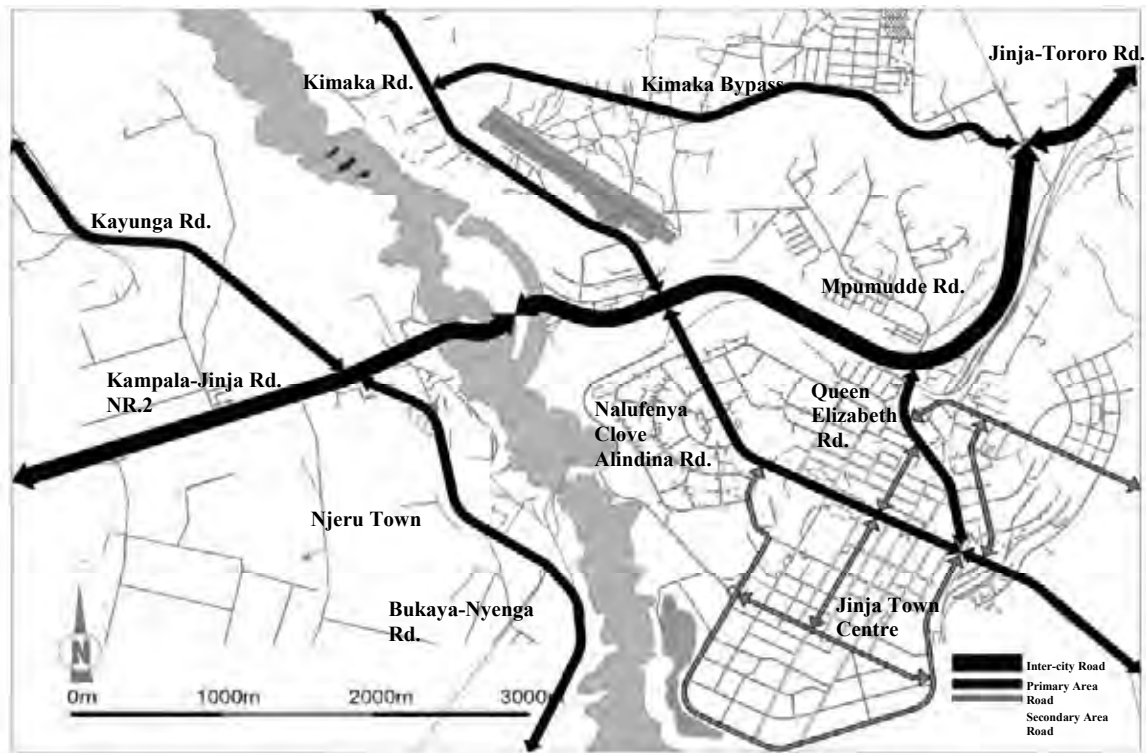


Figure 2.3.2 Existing Road Network in the Study Area

(2) Road Conditions

1) Carriageway

Most roads in the study area are single carriageways with widths ranging from 5 to 10 meters.

The following roads in Jinja City are provided with dual carriageways:

- Mpumudde Road
- A part of Nalufenya Road
- Jinja Main Street
- Queen Elizabeth Road
- Factory Road

Figure 2.3.3 shows the distribution of dual carriageway roads in the study area.

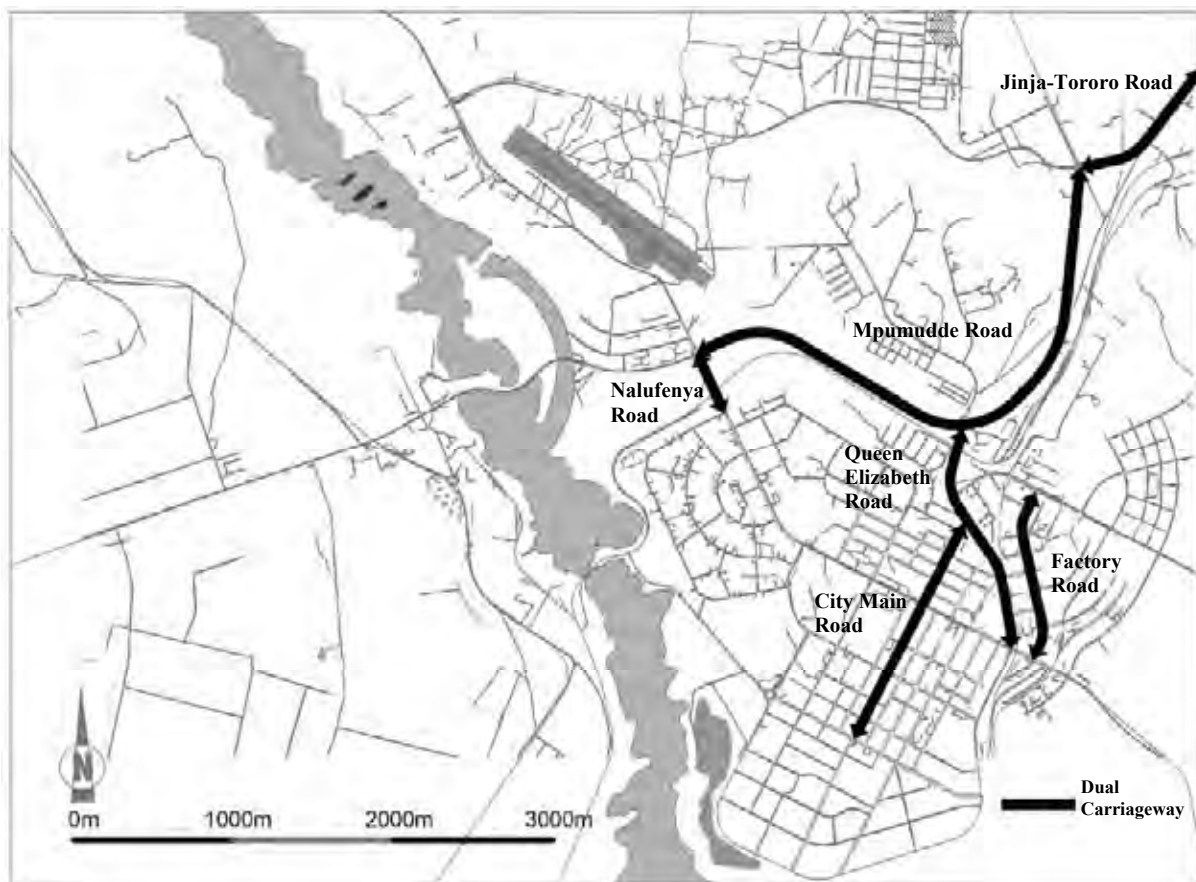


Figure 2.3.3 Dual Carriageway Roads in the Study Area

2) Pavement Condition

Roads in the southern part of Jinja City have been paved with DBST and/or Asphalt Concrete. These pavements however are seriously damaged due to lack of maintenance. The road in the factory area located in the eastern part of Jinja Town Centre in particular is heavily deteriorated and impassable during the occurrence of rain. Table 2.3.4 summarises the road surface conditions in Jinja Municipality.

**Table 2.3.4 Road Surface Conditions in Jinja**

(Unit: km)

Jurisdiction	Pav. Type	Good	Fair	Poor	Unopened	Total
Municipal Council	Paved	32.51	9.7	33.5	-	75.71
	Gravel	24.15	4.07	4.57	-	32.79
	Earth	-	-	1.53	-	1.53
	Planned	-	-	-	15.8	15.8
	Subtotal	56.66	13.77	39.6	15.8	125.83
MOWT/UNRA	Paved	5.8	-	1.65	-	7.45
	Gravel	-	-	-	-	0
	Earth	-	-	-	-	0
	Planned	-	-	-	-	0
	Subtotal	5.8	0	1.65	0	7.45
Grand Total		62.46	13.77	41.25	15.8	133.28
Total existing						117.48
Total planned						15.8

Source: Jinja Structure Plan 2008-2018

There is no paved road in Njeru City with the exception of Kampala- Jinja Road and the trunk roads running north to south in the area. Table 2.3.5 summarises the surface conditions of the roads in Njeru Town.

**Table 2.3.5 Road Surface Conditions in Njeru**

(Unit: km)

Parish	Type	Excellent	Good	Fair	Poor	Bad	Total
Njeru north	Earth	0.0	1.9	0.4	2.4	7.8	12.5
	Gravel	4.7	1.5	5.7	2.4	0.4	14.7
	Total	4.7	3.4	6.1	4.8	8.2	27.2
Njeru south	Earth	3.1	0.0	4.3	12.4	9.3	29.1
	Gravel	8.9	5.4	1.1	2.5	0.0	17.9
	Total	12.0	5.4	5.4	14.9	9.3	47.0
Njeru south	Earth	0.0	0.0	4.8	13.2	5.7	23.7
	Gravel	10.9	2.1	1.7	5.7	0.8	21.2
	Total	10.9	2.1	6.5	18.9	6.5	44.9
Njeru west	Earth	0.0	5.7	7.0	32.2	4.4	49.3
	Gravel	9.4	4.9	5.3	0.6	2.0	22.2
	Total	9.4	10.6	12.3	32.8	6.4	71.5
Grand Total		37.0	21.5	30.3	71.4	30.4	190.6

Source: Njeru Town Structure Plan 2008 – 2018

Note: The roads managed by MOWT/UNRA are excluded.

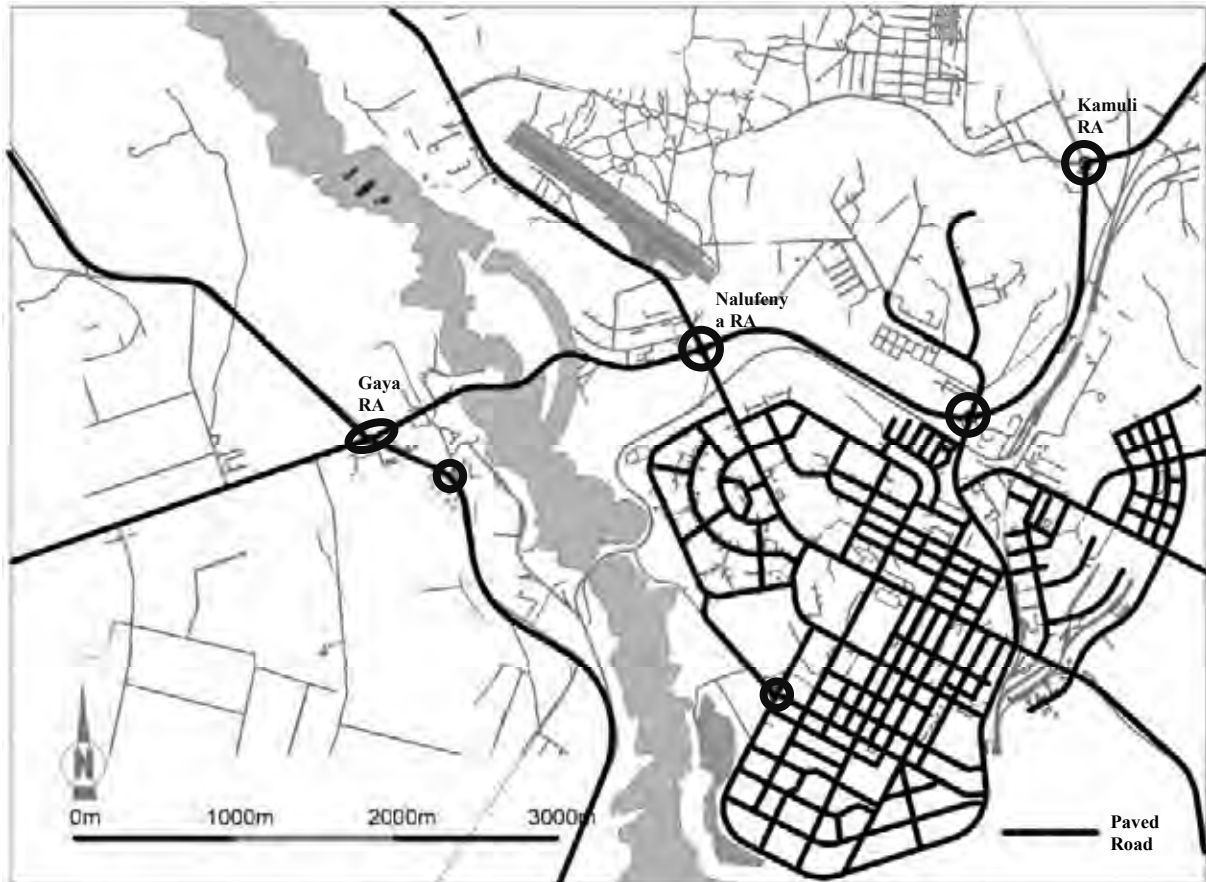
### 3) Inter-Section

The intersections of the roads in the study area are not provided with traffic signals. The intersections for the national roads in Jinja City are provided with roundabout but the size which ranges from 50 to 70 m in diameter is rather small. Other than the above, small size roundabouts are provided in residential areas.

There is only one major intersection in Njeru with long oval shaped configuration located in front of the Beer Factory for Kampala – Jinja Road. An existing bus stop for mini buses

(TAXI) is located at the intersection where mini buses always park for passengers. The median islands are provided with electrical poles.

Figure 2.3.4 shows the locations of paved roads and intersections in the study area.



**Figure 2.3.4 Tarmac Roads & Existing Inter-sections (RA) in the Study Area**

#### 4) Drainage

The road network in the study area is not provided with drainage system made of concrete catch basin, pipes and culverts. Storm water is drained to the River Nile by natural (gravity) method. A huge earth type of drain, which could be a major drainage channel, at the north side of Mpumudde Road is connected with the pipe culvert of Nalufenya Road. Storm water in Jinja City is concentrated to this pipe culvert. The culvert with size at about 300mm in diameter however is rather small and some components were vandalised thus causing flooding in Nalufenya Road during heavy rains.

Figure 2.3.5 shows the drainage system in the study area.

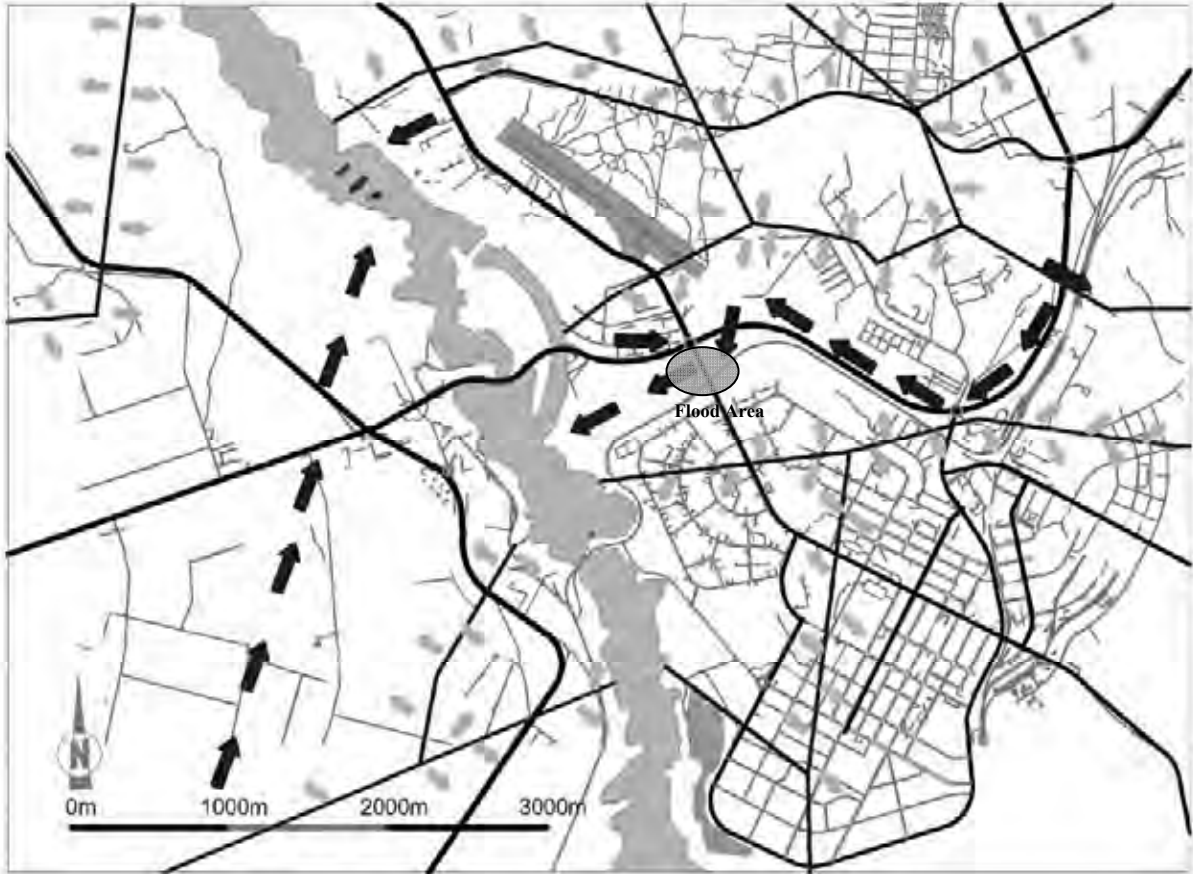


Figure 2.3.5 Drainage Network in the Study Area

### 2.3.5 Other Transport Facilities

#### (1) Railway and Water Transport

A railway line is passing through Jinja connecting Kampala with Malaba via Tororo in Uganda, bound for Mombasa Port in Kenya. Additionally, some sidings are provided in the municipal area. One is connecting the Jinja Pier with the mainline. The railway station is located in the northern part of Jinja, one of the major stations in Uganda, where their locomotives are changed for efficient operation of cargo transport.

The railway line is also passing through the east side of Njeru Town but it appears that the railway threat is not providing significant impact on the economic activities in the town.

#### (2) Air Transport

A public airfield is located to cater to small planes. The airfield is provided with a runway of about 1,200 m along Kikama Road in Jinja. According to the Civil Aviation Authority (CAA), the airfield is classified as Category 2 – General Utilities Airfield, catering to small passenger aircrafts for domestic routes. Currently, no remarkable activity can be seen.

## 2.4 Local Development Plans

### 2.4.1 Jinja Municipality Development Plan

#### (1) Introduction

The latest structural plans were prepared in November 2008 updating the plans prepared in 1994 - 2004. The structural plan contains the existing situation including population trend, social services, infrastructural facilities, natural environment and land use in Jinja as well as legal framework.

#### (2) Population Trend

Table 2.4.1 shows the population projection for 2018 with low growth rate expectation. The population in 2018 at 71,289 is rather small and the increase in population by only 55 residents for the next 10 years needs to be confirmed. This means that sub-urbanization tendency beyond Jinja's boundary will continue as conurbation. Many people will have to choose their residence in the neighbouring regions such as Kakira and Mafura, located in the area to the east and north of Jinja which are relatively far.

**Table 2.4.1 Population Projection**

Sex	(Unit: Persons)		
	2002	2008	2018
Male	36,300	36,317	36,345
Female	34,900	34,917	34,944
Total	71,200	71,234	71,289

Source: Jinja Structure Plan 2008 – 2018

#### (3) Airfield

Although no remarkable activity can be seen, it was disclosed through a meeting between the JICA Study Team and CAA that CAA has conceived an expansion plan for the airfield.

#### (4) Land Use Plan

##### 1) Planning Strategy

##### a) Residential Areas

Large population growth is not seen within Jinja Municipality boundary in the future; hence, no significant expansion of residential areas is foreseen. The current land use patterns will remain almost unchanged maintaining the present residential patterns of low, medium and high density areas.

##### b) Industrial Areas

One of the key issues in the land use plan in Jinja is how to revive industrial activities. Jinja has been recognized in the past as the leading industrial city in Uganda for such major industrial development as steel mill, copper smelter, tobacco and beer brewery. However, government policy on liberalization of industrial development resulted in a sharp decline in industrial activities and investment in the region. A small scale industrial park is planned for Mpumuddle – Kimaka Division adjacent to the Military Barracks based on the structural plan.

##### c) Resort and Recreation Areas

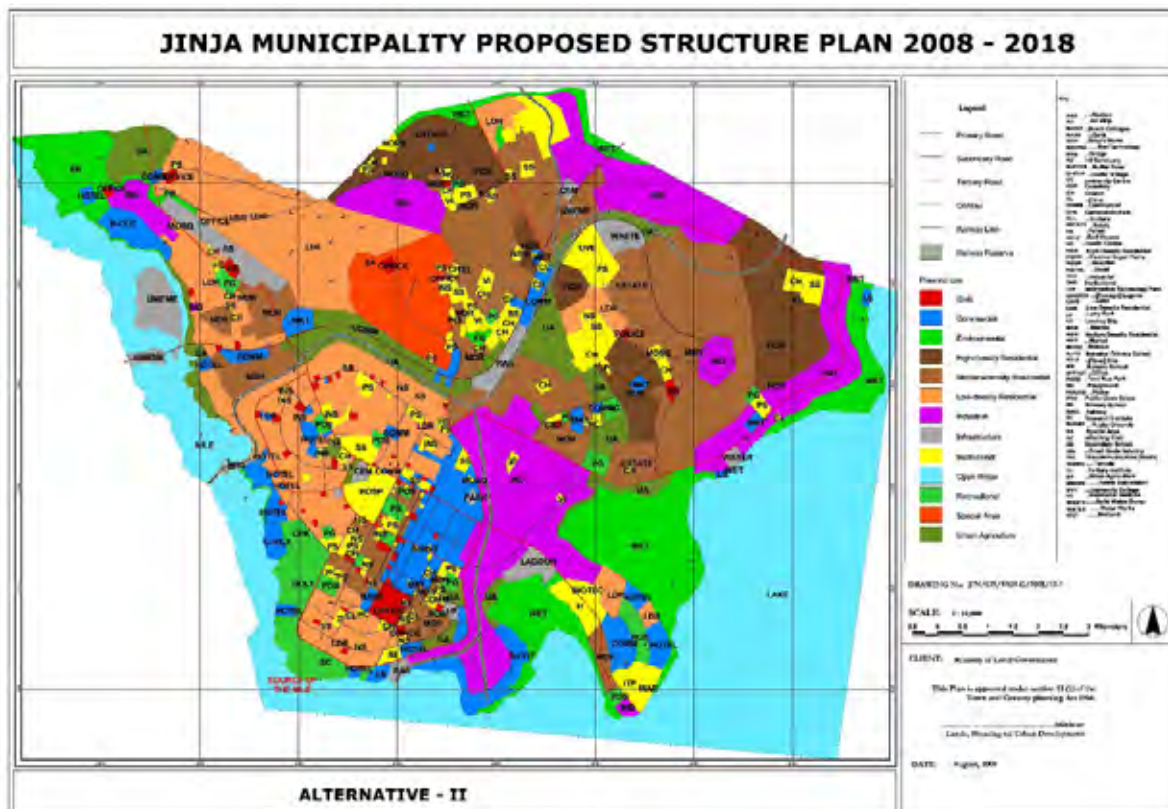
Resort and recreation areas along the River Nile have been recognized as one of regional potential from the viewpoint of land use development not only in Jinja but also in the whole of Uganda. Tourism can generate a variety of economic activities. The structural plan has placed emphasis on resort and tourism development as one of the development pillars in Jinja.



This is expected to induce or attract foreign visitors as means of generating additional revenue from the tourism industry and for Jinja as well.

## 2) Land Use Plan

Based on the above strategy, a land use plan was formulated as shown in Figure 2.4.1.



Source: Jinja Structure Plan 2008 - 2018

Figure 2.4.1 Land Use Plan in Jinja

## 2.4.2 Njeru Town Development Plan

### (1) Introduction

The average annual population growth is expected to be as high as 3.8% from 2002 to 2008. The population in Njeru is expected to exceed that of Jinja in 2018 as shown in Table 2.4.2, should the current growth trend continue.

Table 2.4.2 Population Trend in Njeru by Parish

(Unit: Persons)

Parish	2002	2008	2018
Njeru West	29,825	37,305	54,168
Njeru East	6,883	8,609	12,500
Njeru North	3,100	3,877	5,629
Njeru South	11,352	14,199	20,615
Total	51,160	63,990	92,912

Source: Njeru Structure Plan 2008-2018

(2) Land Use Plan

Planning Strategy

a) Residential area

Residential areas are categorized into high, medium and low density zones. High and medium density areas are planned for the existing formation, and any additional development is not considered except for the areas surrounding the existing residential areas. Numerous residents are expected to work in Njeru. On the other hand, it is mentioned that the existing low density area needs to be highly retained and new sprawl development is recommended so that expansion will evenly spread within the entire Town Council.

b) Industrial Area

Industrial zone will expand around the existing industrial area located in Njeru East. Additionally, Free Trade Zone is being proposed for Njeru South, considering that the area is located in a low-lying and flat region, suitable for industrial establishment.

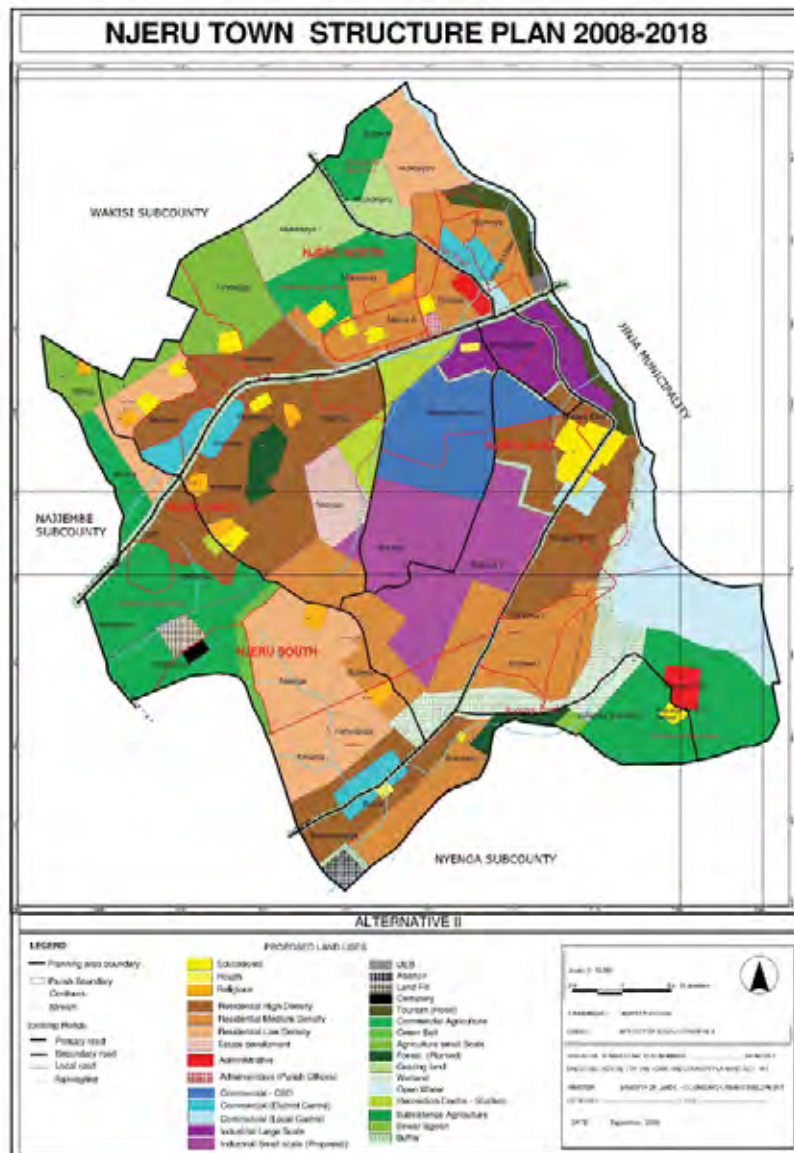
c) Resort and Tourism

The following are proposed for the resort and tourism development:

- Fishing in the lake and river
- Development of bird watching along the lake and river
- Hill climbing
- Scenic viewing
- Development of farm tourism and village strolling
- Development of cultural tourism
- Development of accommodation facilities including safari camping
- Development of cable car connecting Njeru and Jinja

d) Land Use Plan

Based on the above strategy, a new land use plan was formulated as shown in Figure 2.4.2.



Source: Njeru Structure Plan 2008-2018

Figure 2.4.2 Land Use Plan in Njeru

### 2.4.3 Jinja-Njeru Conurbation Development Issues

Jinja City's structural arrangement was formed based on industrial development in 1960 to 1970 by taking advantage of cheap electrical power supply from Nalubaale Dam, coupled with the availability of abundant local and Indian labour force. However, manufacturing activities have consistently been declining and regional development is at a turning point at this moment. In light of the foregoing, regional development issues in Jinja conurbation including Njeru Town can be summarised as follows:

(1) Revival of Manufacturing Industry

Although agriculture is one of the pillars for economic development, creating job opportunities is a focal point in regional development. In this perspective, the development of the manufacturing industry is inevitable. However, heavy industrial development can no longer be enhanced for Jinja. In lieu of heavy industries the development of light industries is henceforth expected.

(2) Necessity of Tourism and Resort Development

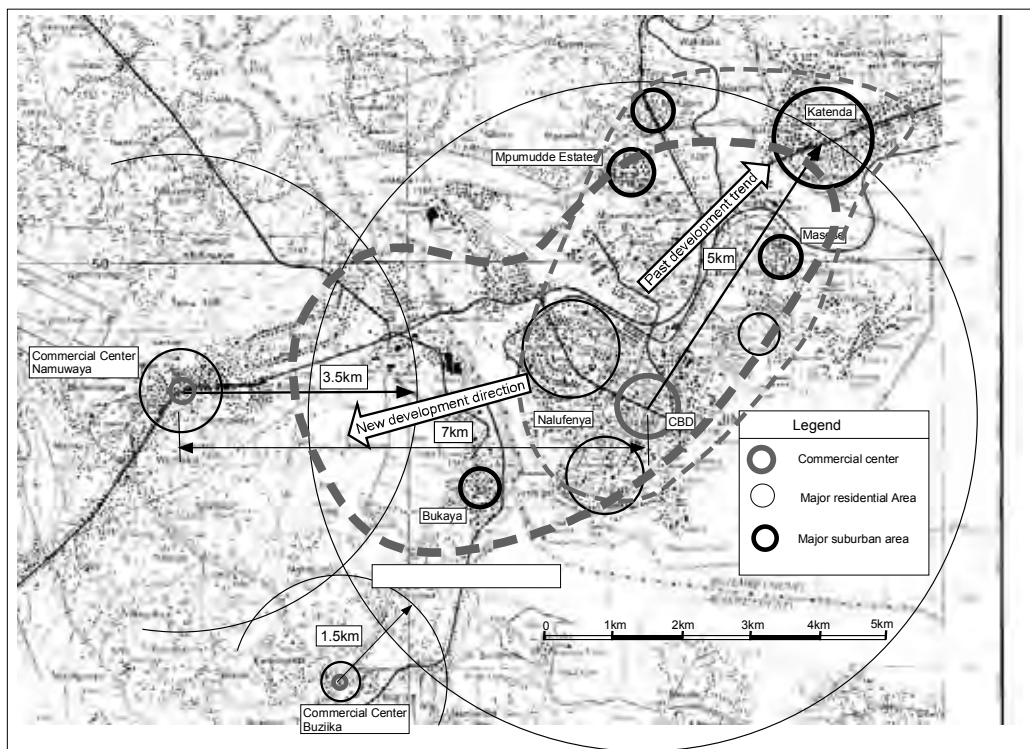
Some tourism and resort activities exist even at this moment. Further development is required taking advantage of the natural resources in the region. This will certainly increase varieties in the conurbation for Jinja, thereby differentiating the region from other cities in Uganda. It is considered that maintaining a unique identity would lead to successful regional development.

(3) Strengthening Local Integration

1) Formulation of Planned Suburbanization

The population along Jinja Municipality boundary is foreseen to have a low growth rate based on the structural plan for 2008 to 2018. On the contrary Njeru is expected to have a high growth rate. This indicates that suburbanization will continue to progress as population increases along with conurbation since Jinja city is not provided with sufficient space or low cost land to meet the future demand for local development. Inhabitants appear to be shifting towards the outskirts of Jinja City to ease living conditions. Figure 2.4.3 shows the mapping for this tendency.

As shown, residential areas have been shifting northeast along the trunk road for Iganga and Tororo. In anticipation of this trend, priority should be given to the organization of residential areas to cope with the ongoing suburbanization.



**Figure 2.4.3 Growth/Commercial Centre and Suburbanization**

2) Future Development Orientation

Jinja Municipality has been directing its development towards the north-east under the spontaneous suburbanization development. This development needs to be reoriented towards the south-west direction to minimize cost of public investment and also to upgrade the living standards of future inhabitants.

3) Promoting Local Development in Njeru

Promoting local development in Njeru Town is an issue that should be reckoned with. Excessive suburbanization would cause inefficient urban management due to distant commuting and shopping which would generate traffic congestion thereby lowering social services. The development of Njeru Town would involve numerous land uses and spaces to be created within a radius of (less than) 5 km from the CBD of Jinja. This will increase the opportunities for the inhabitants in Njeru to take advantage of the higher level of service facilities located in the centre of Jinja City, commuting to work in offices, entering higher quality schools, shopping and hospitals, among other economic and social facilities.

4) Strong Connectivity between Jinja and Njeru

In the light of the above development context, a harmonious relationship and binding connectivity between Njeru Town and Jinja City should be maintained. The proposed new Nile Bridge project is expected to bring about accelerated integration of Jinja conurbation thereby generating successful local development.