



AfCAP
Africa Community Access Partnership

Economic Growth through Effective Road Asset Management (GEM)

Consolidated Baseline Study Report



Authors

Robert Geddes
Camilla Lema
Charles Bopoto
Kingstone Gongera
Michael Pinard

Project No. 10636A GEN2018A
18th August 2017



The views in this document are those of the author and they do not necessarily reflect the views of the Research for Community Access Partnership (ReCAP), or Cardno Emerging Markets (UK) Ltd for whom the document was prepared.

Cover Image: Scenes from GEM Advisory Team Country Visits

Quality assurance and review table			
Version	Author(s)	Reviewer(s)	Date
Draft	Robert Geddes Camilla Lema Charles Bopoto Kingstone Gongera Michael Pinard	Les Sampson Jasper Cook	18 August 2017

ReCAP Project Management Unit
Cardno Emerging Market (UK) Ltd
Oxford House, Oxford Road
Thame
OX9 2AH
United Kingdom



ReCAP Completion Report Template

ReCAP Database Details: Economic Growth through Effective Road Asset Management			
Reference No:	10636A GEN2018A	Location	Regional Africa
Source of Proposal		Procurement Method	
Theme		Sub-Theme	
Lead Implementation Organisation	Civil Design Solutions	Partner Organisation	
Total Approved Budget		Total Used Budget	
Start Date		End Date	
Report Due Date		Date Received	

Abstract

The Africa Community Access Partnership (AFCAP) is providing technical assistance to foster improvements in asset management performance in selected rural road agencies in four countries in sub-Saharan Africa. The four countries participating are Zambia, Uganda, Sierra Leone and the Western Cape region of South Africa. One district has been selected in each country as a focus for the research project. The Uganda National Roads Authority (UNRA) is participating in the project as an agency for rural roads.

Performance in rural road asset management in the selected areas is being monitored against a framework for assessing asset management performance that has been developed as part of the study. The framework covers the following building blocks towards sustainable road asset preservation: external/political factors, institutional arrangements, management of the road network, financing, technical aspects and operations.

This report presents the consolidated baseline data in road asset management for each of the participating countries relative to the above-mentioned framework. This includes the agency self-assessment of performance in asset management, measurements of the road network condition, and socio-economic data characterising the impact of road condition on community well-being and the rural economy. The data were collected over an eight-month period between October 2016 and May 2017. The data are being used by the roads agencies to determine gaps in their performance and to consider measures for addressing them. The measurements will be repeated annually for comparison with the baselines and to identify any changes in performance over time.

The establishment of the baseline showed that significant gaps in pre-requisites for sustainable road preservation exist in three project countries: Sierra Leone, Zambia and Uganda. The Western Cape's situation is in contrast with the other participating areas as their asset management approach is in a more advanced state.

Acronyms, Units and Currencies

\$	United States Dollars
AfCAP	Africa Community Access Partnership
AM	Asset Management
ARMFA	African Road Maintenance Fund Association
ARTReF	African Road and Transport Research Forum
AsCAP	Asia Community Access Partnership
AT	Advisory Team
CDS	Civil Design Solutions
DFID	Department for Further International Development
DM	District Municipality
GDP	Gross Domestic Product
GPS	Global positioning system
IAMM	Infrastructure Asset Management Manual
IQL	Information Quality Level
KLG	Kamuli Local Government
LVR	Low Volume Road
MLG	Ministry of Local Government
MOWT	Ministry of Works and Transport
mUSD	Million United States Dollars
NRFA	National Road Fund Administration
PMU	Project Management Unit
PO-RALG	President’s Office – Regional and Local Government
RAI	Rural Access Index
RA	Roads Agency
RAM	Road Asset Management
RDA	Road Development Authority (Zambia)
ReCAP	Research for Community Access Partnership
RMFA	Road Maintenance Fund Administration
SADC	Southern African Development Community
SC	Steering Committee
SLRA	Sierra Leone Roads Authority
TMH	Technical Methods for Highways
UK	United Kingdom (of Great Britain and Northern Ireland)
UKAid	United Kingdom Aid (Department for International Development, UK)
UoB	University of Birmingham
UNRA	Uganda National Road Authority
URF	Uganda Road Fund

Key Words

Rural Roads, Road Preservation, Asset Management, Baseline, Performance Monitoring

Contents

Abstract	ii
Acronyms, Units and Currencies	iii
Contents	iv
1 Introduction	5
1.1 Background to the Project	5
1.2 Purpose of the Project	5
1.3 Objectives of the Project	5
1.4 Approach	5
1.5 Purpose of this Report	6
1.6 Methodology Adopted to Establish Baseline	6
1.7 Structure of this Report	6
2 Asset Management Performance Assessment	7
2.1 Scoring of the Questionnaire	7
2.2 Road Asset Preservation Index	10
2.3 Measurable AM Baseline Data	11
2.4 Summary of Asset Management Capacity in the Project Areas	18
3 Road Inventory and Condition Baseline	21
3.1 Purpose of Road Condition Monitoring	21
3.2 Identification of Project Networks	21
3.3 Road Condition Monitoring	21
3.4 Functional and Condition Indices	22
4 Socio-economic Baseline	23
4.1 Approach	23
4.2 Chongwe Municipal Council	23
4.3 Uganda National Roads Authority	23
4.4 Kamuli District	23
4.5 Tonkolili District	23
Annex A. Baseline Data – Chongwe Municipal Council (Zambia)	A1
Annex B. Baseline Data – UNRA	B1
Annex C. Baseline Data – Kamuli (Uganda)	C1
Annex D. Baseline Data - Tonkolili District (Sierra Leone)	D1
Annex E. Baseline Data – Western Cape	E1

1 Introduction

1.1 Background to the Project

The Research for Community Access Programme (ReCAP) is supporting research and capacity building activities in Africa (Africa Community Access Programme – AFCAP) and Asia (Asia Community Access Programme – ASCAP). The programme is funded by UK Aid and is managed by Cardno Emerging Markets. Cardno has entered a contract with Civil Design Solutions (CDS) of Mauritius to provide technical support for the delivery of a three-year regional research project on improved management of rural roads.

The project is known as ‘Economic Growth through Effective Road Asset Management – GEM’ and is initially being implemented in sub-Saharan Africa. Sierra Leone, Uganda, Zambia and the Western Cape Province of South Africa are participating in the project. The research process and outcomes are being shared with other AFCAP-participating countries through regional meetings of the Project Implementation Team (PIT). Plans are in progress to roll out the project approach on a wider basis in Africa and Asia.

The Implementation Phase of the project commenced in July 2016 and will run for 31 months.

Full details of the design of the project can be found in the “Final Formulation Phase Report” dated 9th May 2016 and the “Mobilisation Report for the Implementation Phase” dated 31st October 2016.

1.2 Purpose of the Project

The purpose of the project is to achieve economic and social benefits for local communities as a result of improved performance in road asset management. The ultimate beneficiaries of the project are rural communities in sub-Saharan Africa.

1.3 Objectives of the Project

The objectives of the project are as follows:

1. Review literature and reports on existing and recent road management and maintenance programmes and identify ‘what works’ and ‘what doesn’t work’ in the type of environment likely to be encountered in the project area.
2. Develop a framework for measuring performance in road asset management appropriate to rural road networks and apply it in selected project areas.
3. Develop simple and appropriate tools for monitoring road condition and apply them in the project areas.
4. Develop simple indicators of economic and social impact of rural roads and monitor them in the project areas.
5. Achieve incremental (and measurable) improvements to asset management performance in the project areas over a three-year period.

1.4 Approach

The approach to the project is intended to foster self-reliance in road agencies in the project areas and to encourage greater accountability to road users and other sector stakeholders. It provides flexibility and space for the participating road agencies and their stakeholders to determine their own performance in rural road asset management. The approach focuses

more on improved performance in road asset management than on any specific or pre-conceived road asset management systems or institutional, management and funding arrangements. Support to this process is being provided through demand-led technical assistance.

1.5 Purpose of this Report

This report presents the baseline status in the project countries relative to the adopted asset management framework. The performance of the road agencies will be compared against this baseline over the life of the project. The associated socioeconomic impact of the roads in the project areas are being measured in comparison with the baseline situation and any improved level of service.

This report consolidates the baseline information previously submitted in the following reports:

- GEN2018C GEM Baseline Study Report Final 27 April 2017
- GEN2018C GEM Progress Report No 1 Final 29 May 2017
- GEN2018C GEM Progress Report No 2 Final 3 August 2017.

1.6 Methodology Adopted to Establish Baseline

Data to establish the baseline was gathered by the project teams in the participating countries between July 2016 and May 2017 through the following activities:

- Performance self-assessment by the road agencies guided by the Asset Management Framework developed during the project design phase.
- Establishment of road inventories in each participating area.
- Road and structure condition surveys by the project teams.
- Socioeconomic data collection by the project teams using a framework of indicators proposed by the GEM Advisory Team.

The project teams were supported in this process by the GEM Advisory Team.

1.7 Structure of this Report

Chapters 2 and 3 of this report give a summary of the baseline data for the project areas for the self-assessment questionnaire and road condition surveys. Chapter 4 describes the purpose of the socio-economic data collection and some of the challenges faced collecting these data. Summaries of the completed self-assessment questionnaires, road condition data and the socio-economic data for each of the project areas are included in the annexes.

2 Asset Management Performance Assessment

2.1 Scoring of the Questionnaire

The GEM Self-Assessment questionnaire has been used to establish a baseline of performance in each of the five participating agencies. The questionnaire assesses performance across all six building blocks of the road preservation pyramid (external environment, institutional arrangements, finance, management, technical and organisation). An initial assessment was made by the roads agencies, followed by an independent assessment by the GEM Advisory Team (GAT) and finally a joint assessment by the agency and the GAT together.

The agency assessment and joint assessments are presented in the graphs below. The joint assessment will be used as the definitive baseline for future monitoring. No joint assessment was carried out for the Western Cape. The graph for the Western Cape therefore shows the agency assessment and the GAT independent assessment.

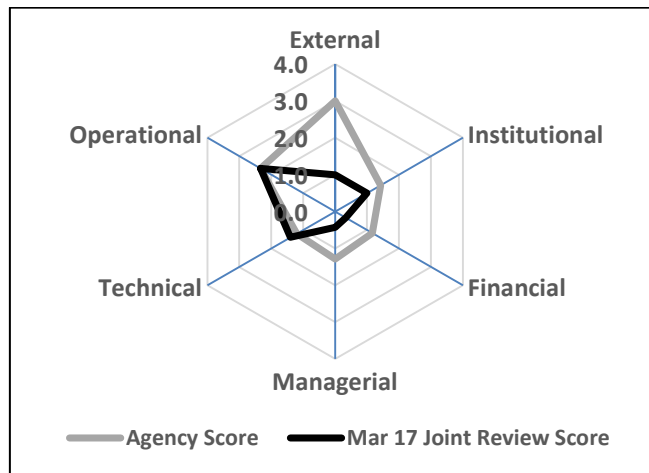


Figure 2.1: Chongwe Municipality (Zambia)

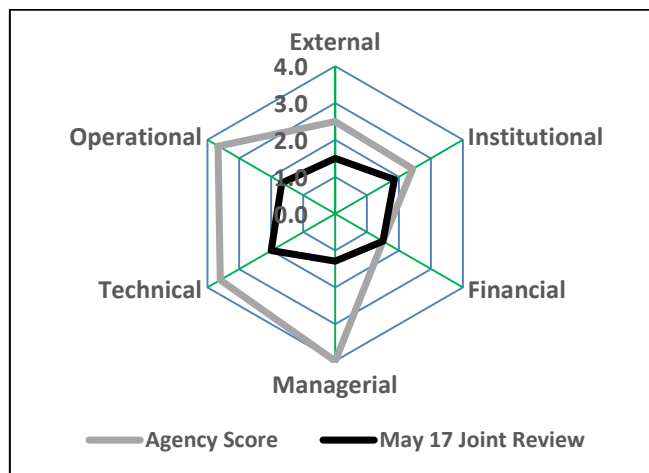


Figure 2.2: Uganda National Roads Authority

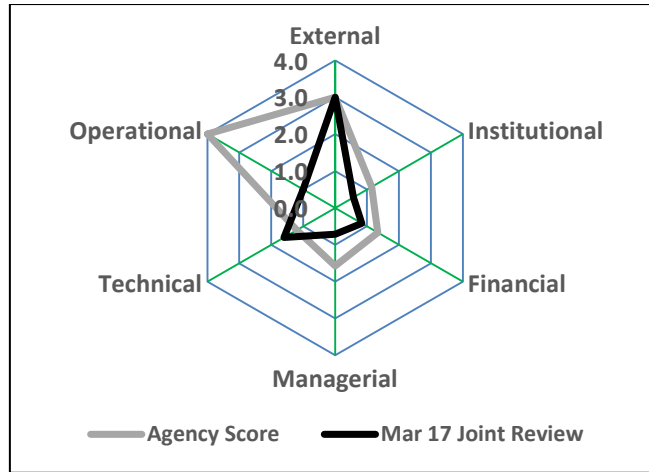


Figure 2.3: Kamuli District (Uganda)



Figure 2.4: Tonkolili District (Sierra Leone)

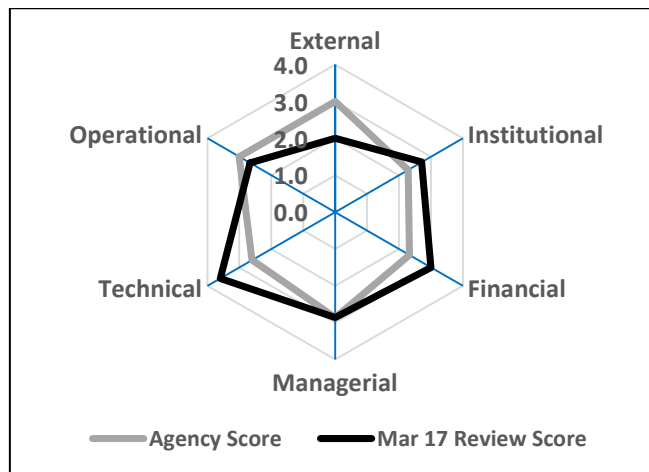


Figure 2.5: Western Cape (South Africa)

A comparison has been carried out of AM performance scores achieved by the five participating agencies based on the joint assessment. The results are shown in the radar diagram in Figure 2.6.

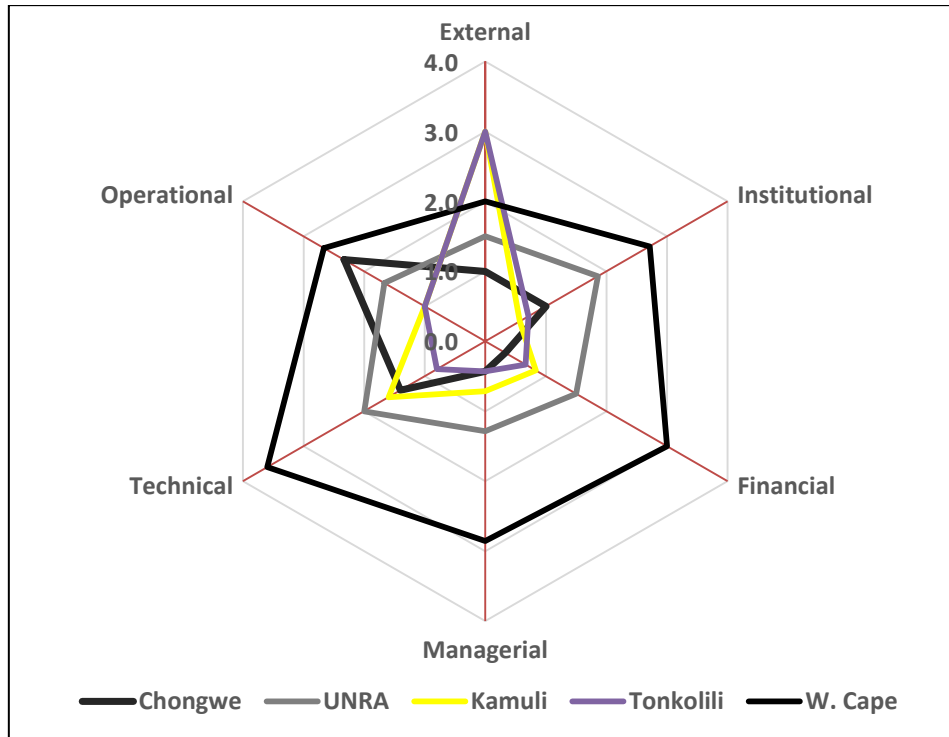


Figure 2.6: Combined Radar Diagram (Joint Assessment)

The assessment of AM performance in the five participating agencies, and the comparisons between agencies, are derived from the answers to a set of questions associated with each of the 6 building blocks of the Road Preservation Pyramid. From this assessment, the following indicative findings and conclusions may be drawn:

- The assessments arrived at initially by the GAT and subsequently in the joint assessments are generally lower, in some cases much lower, than those arrived at independently by the agencies. This is particularly evident regarding the External, Institutional and Managerial elements of the Road Preservation Pyramid. The differences in scoring between the initial assessment of the GAT, the joint assessment and the scores obtained by the agencies are due to several reasons, including:
 - A difference in interpretation of some questions.
 - A lack of understanding by the agencies in terms of the meaning of the question.
 - Inadequately framed questions which are open to different interpretations.
- The scores arrived at through the joint assessment for all elements of the Road Preservation Pyramid are generally very poor to poor in all agencies except the Western Cape. This indicates lack of development in road asset management.
- The GAT assessments for the Western Cape is generally higher than those arrived at by the agency. It is the opinion of the Advisory Team that the Western Cape road managers under-reported their AM status.

- The Western Cape, chosen for the level of its maturity in RAM is, not surprisingly, much more advanced than the other three countries which, generally, are not yet adequately developed in most aspects of this activity.
- There are several positive outcomes that may be drawn from the performance evaluation exercise that has been carried out to date, including:
 - A heightened awareness by the participating countries, particularly Zambia, Sierra Leone and Uganda, of what RAM is all about and the factors that affect the attainment of proficiency in this activity.
 - Use of the performance assessments to identify priority areas for improvement and the preparation of action plans.
 - Appreciation of the key elements of RAM that need to be addressed in a prioritised manner, starting from the base of the Road Preservation Pyramid, i.e. the External, Institutional and Financing building blocks, that are prerequisites for attaining Management, Technical and Operational effectiveness and efficiency in preserving the investments made in the provision of road infrastructure at local government level.
- The Self-Assessment Questionnaire needs to be improved through the inclusion of additional questions under the External building block, and reordering of some questions.

2.2 Road Asset Preservation Index

The project is seeking to establish a single indicator of AM performance which can be used by any rural roads agency in Africa or Asia. The indicator will provide a composite measure of the performance across the six AM building blocks.

Through discussions with the agencies in the participating areas it was realised that the building blocks contribute to different extents to achieving satisfactory asset management performance. Therefore, it was necessary to assign weightings to each building block in the process of combining scores. As a first step in this process, and subject to further discussions and refinement with the roads agencies, the External building block has been given the highest weighting of 2 as it is regarded as the most important determinant of performance. The Institutional, Financial, Management, Technical and Operational blocks have been given weightings of 1.8, 1.6, 1.4, 1.2 and 1.0 respectively. The weightings were then converted to coefficients by dividing the weighting by the sum of all of the weightings. The coefficient was then multiplied by the self-assessment questionnaire score for each building block. The sum of these results gives the “Rural Road Asset Management Assessment Score”. The maximum value for this score is 4.

The level of maturity is assessed as follows:

- 0: Not developed
- 1: Minimum
- 2: Core
- 3: Mature
- 4: Advanced

The calculation of the Rural Road Asset Management Assessment Score for the five participating agencies is given in Annexes A to E. The summary of the results is as follows:

- Chongwe Municipality, Zambia: 1.0 (Minimum)
- UNRA: 1.6 (Core)
- Kamuli District, Uganda: 1.5 (Minimum)
- Tonkolili District, Sierra Leone: 1.4 (Minimum)
- Western Cape: 2.6 (Mature)

By dividing the Rural Road Asset Management Assessment Score by 4 an index of performance between 0 and 1 can be obtained. This index is initially known as the Rural Road Preservation Index (RAPI)¹ and is defined as “a measure of the adequacy of policies, institutions and systems for the preservation of rural roads to an agreed standard”.

For the five participating agencies, the RAPI is as follows:

- Chongwe Municipality, Zambia: 0.25
- UNRA: 0.41
- Kamuli District, Uganda: 0.35
- Tonkolili District, Sierra Leone: 0.31
- Western Cape: 0.68.

2.3 Measurable AM Baseline Data

Measurable road asset management data were collected for the participating agencies in Zambia, Uganda and Sierra Leone. These items have been extracted from the self-assessment questionnaire and the road network inventory and condition assessments. Where “benchmark” figures are given, these are either targets set by the roads agency or are from regional good practice. In most cases the “benchmark” values have not yet been set. It is expected that the roads agencies will introduce more benchmark values as the project progresses. The data are summarised in the tables below.

Table 2.1: AM Baseline Data for Chongwe

Building Block	Data Item	Unit	Benchmark	2016	Jan 2017
External	Stakeholder communication tools available	No.	3	2	2
	Meetings with stakeholders – pre-budget	No.	2	1	1
	Council meetings - strategy	No.	4	1	1
	Council meetings - budget approval	No.	2	2	0
	Meetings with stakeholders - post budget	No.	1	0	0
Institutional	Total establishment - engineers + technicians	No.	5	4	4
	Vacancies - engineers + technicians	No.	1	2	2
	Planned training programmes	No.	2	0	0
	Training courses undertaken	No.	2	2	0
	DE salary as % of private sector	%	85	65%	75%
Financial	Estimated project road network asset value	mUS\$		not known	23.5
	Total requirements - routine maintenance	mUS\$		not known	not known
	Total requirements - periodic maintenance	mUS\$		not known	not known
	Total requirements - rehabilitation/reconstruction	mUS\$		not known	not known
	Total requirements - development	mUS\$		not known	not known

¹ The name of the index is still under discussion.

Building Block	Data Item	Unit	Benchmark	2016	Jan 2017
	Budget - routine maintenance	mUS\$		not known	not known
	Budget - periodic maintenance	mUS\$		not known	not known
	Budget - rehabilitation/reconstruction	mUS\$		not known	not known
	Budget - development	mUS\$		not known	not known
	Funding - Road fund	mUS\$	0.500	0.100	0.112
	Funding - Council funds	mUS\$	0.150	0.095	0.120
	Funding - Donors	mUS\$		not known	not known
	Funding - Others	mUS\$		not known	not known
Managerial	Cost of asset management system	US\$		not known	not known
	Annual maintenance cost of AM system	US\$		not known	not known
	Network under routine maintenance	Kms		not known	not known
	Network under routine maintenance as % of total	%		not known	not known
	Network under periodic maintenance	Kms		not known	not known
	Network under periodic maintenance as % of total	%		not known	not known
	Network under rehabilitation	Kms		not known	not known
	Network under rehabilitation as % of total	%		not known	not known
	Network upgrading	Kms	10	0	0
	Network upgrading as % of total	%		0	0
	Network planned for periodic next 3 yrs	Kms		not known	not known
	Network planned for rehabilitation next 3 yrs	Kms		not known	not known
	Network planned for upgrading next 3 yrs	Kms		not known	not known
Technical	Total network length in district	Kms	860	650	650
	Project network length	Kms	300	250	250
	Network length - engineered/gravelled	Kms	100	50	50
	Network length - non-engineered	Kms	100	200	200
	No of culverts - pipes			not known	500
	No of culverts - box			not known	25
	No of low level drifts			not known	5
	No of bridges			not known	2
	No of structures inspected			not known	532
	No of visual inspection cycles - road			not known	1
	No of vehicle counts			not known	nil
	% Network - Very Good			not known	0
	% Network - Good			not known	10
	% Network - Fair			not known	25
	% Network - Poor			not known	25
	% Network - Very Poor			not known	40
	% Culverts - Very Good			not known	5
	% Culverts - Good			not known	50
	% Culverts - Fair			not known	20
	% Culverts - Poor			not known	15
	% Culverts - Very Poor			not known	10
	% Bridges - Very Good			not known	5
	% Bridges - Good			not known	30
	% Bridges - Fair			not known	30

Building Block	Data Item	Unit	Benchmark	2016	Jan 2017
	% Bridges - Poor			not known	30
	% Bridges - Very Poor			not known	5
	No of impassable points - > 2 days closed			not known	0
Operational	No of graders		2	1	1
	No of tractors		5	2	2
	No of water bowsers			none	none
	No of tippers			none	none
	No of pedestrian rollers			none	none
	No of self-propelled rollers			none	none
	Average annual utilisation rate - graders	%		not known	not known
	No of roads supervisors		1	1	1
	No of foremen		1	1	1
	No of skilled and semi-skilled workers		5	2	2
	Total man-days of labour utilised			not known	not known
	No of roadworks tenders			not known	not known
	No of contracts awarded			not known	not known
	No of technical audits			nil	nil

Table 2.2: AM Baseline Data for UNRA

Building Block	Data Item	Unit	Benchmark	2016	May 2017
External (Jinja Station)	Stakeholder communication tools available	No.		1	2
	Meetings with stakeholders – pre-budget	No.		1	1
	Meetings with stakeholders - post budget	No.		0	0
Institutional (Jinja Station)	Total establishment - engineers + technicians	No.	9	40	40
	Vacancies - engineers + technicians	No.		20	20
	Planned training programmes	No.		5	5
	Training courses undertaken	No.	1	2	2
	Station Engineer salary as % of private sector	%		110%	120%
Financial (Jinja Station)	Estimated project road network asset value	mUS\$		15.5	15.5
	Total requirements - routine maintenance	mUS\$		not known	not known
	Total requirements - periodic maintenance	mUS\$		not known	not known
	Total requirements - rehabilitation/reconstruction	mUS\$		not known	not known
	Total requirements - development	mUS\$		not known	not known
	Budget - routine maintenance	mUS\$		not known	not known
	Budget - periodic maintenance	mUS\$		not known	not known
	Budget - rehabilitation/reconstruction	mUS\$		not known	not known
	Budget - development	mUS\$		not known	not known
	Funding - Road fund	mUS\$		40	50
	Funding - Council funds	mUS\$		not known	not known
	Funding - Donors	mUS\$		not known	not known
	Funding - Others	mUS\$		not known	not known
Managerial (Jinja Station)	Cost of asset management system	US\$		not known	not known
	Annual maintenance cost of AM system	US\$		not known	not known
	Network under routine maintenance	Km	876.2	not known	not known

Building Block	Data Item	Unit	Benchmark	2016	May 2017
	Network under routine maintenance as % of total	%	75.9	not known	not known
	Network under periodic maintenance	Km	220.3	not known	not known
	Network under periodic maintenance as % of total	%	19.1	not known	not known
	Network under rehabilitation	Km	32	not known	not known
	Network under rehabilitation as % of total	%	2.77	not known	not known
	Network upgrading	Km	37	not known	not known
	Network upgrading as % of total	%	3.21	not known	not known
	Network planned for periodic next 3 yrs	Km		not known	not known
	Network planned for rehabilitation next 3 yrs	Km		not known	not known
	Network planned for upgrading next 3 yrs	Km		not known	not known
Technical (Jinja Station)	Total network length in GEM project area	Km	1153.6	1000	1000
	Project network length	Km	505.5	300	300
	Network length - engineered/gravelled	Km	937.6	50	50
	Network length - non-engineered	Km	Nil	50	50
	No of culverts - pipes			not known	500
	No of culverts - box		Nil	not known	25
	No of low level drifts		Nil	not known	5
	No of bridges		1	not known	2
	No of structures inspected			not known	532
	No of visual inspection cycles - road		1	not known	1
	No of vehicle counts		1	not known	nil
	% Network - Very Good		5	not known	0
	% Network - Good		40	not known	10
	% Network - Fair		50	not known	25
	% Network - Poor		5	not known	25
	% Network - Very Poor		Nil	not known	40
	% Culverts - Very Good		2	not known	5
	% Culverts - Good		8	not known	50
	% Culverts - Fair		60	not known	20
	% Culverts - Poor		20	not known	15
	% Culverts - Very Poor		10	not known	10
	% Bridges - Very Good		Nil	not known	5
	% Bridges - Good		Nil	not known	30
	% Bridges - Fair		1	not known	30
	% Bridges - Poor		Nil	not known	30
	% Bridges - Very Poor		Nil	not known	5
	No of impassable points - > 2 days closed		Nil	not known	10
Operational (Jinja Station)	No of graders		2	none	none
	No of tractors		1	none	none
	No of water bowsers		1	none	none
	No of tippers		4	none	none
	No of pedestrian rollers		1	none	none
	No of self-propelled rollers		1	none	none
	Average annual utilization rate - graders	%	100	not known	not known
	No of roads supervisors		7	1	1

Building Block	Data Item	Unit	Benchmark	2016	May 2017
	No of foremen		Variable Item	3	3
	No of skilled and semi-skilled workers		Variable Item	not known	not known
	Total man-days of labor utilised			not known	not known
	No of roadworks tenders			not known	not known
	No of contracts awarded			not known	not known
	No of technical audits		1	nil	nil

Table 2.3: AM Baseline Data for Kamuli

Building Block	Data Item	Unit	Benchmark	2016	Jan 2017
External	Stakeholder communication tools available	No.		1	1
	Meetings with stakeholders – pre-budget	No.		1	1
	Council meetings - strategy	No.		0	0
	Council meetings - budget approval	No.		1	1
	Meetings with stakeholders - post budget	No.		0	0
Institutional	Total establishment - engineers + technicians	No.		3	3
	Vacancies - engineers + technicians	No.		1	0
	Planned training programmes	No.		0	0
	Training courses undertaken	No.		0	0
	DE salary as % of private sector	%		65%	75%
Financial	Estimated project road network asset value	mUS\$		15.5	15.5
	Total requirements - routine maintenance	mUS\$		not known	not known
	Total requirements - periodic maintenance	mUS\$		not known	not known
	Total requirements - rehabilitation/reconstruction	mUS\$		not known	not known
	Total requirements - development	mUS\$		not known	not known
	Budget - routine maintenance	mUS\$		not known	not known
	Budget - periodic maintenance	mUS\$		not known	not known
	Budget - rehabilitation/reconstruction	mUS\$		not known	not known
	Budget - development	mUS\$		not known	not known
	Funding - Road fund	mUS\$		0.100	0.112
	Funding - Council funds	mUS\$		not known	not known
	Funding - Donors	mUS\$		not known	not known
	Funding - Others	mUS\$		not known	not known
Managerial	Cost of asset management system	US\$		not known	not known
	Annual maintenance cost of AM system	US\$		not known	not known
	Network under routine maintenance	Kms		not known	not known
	Network under routine maintenance as % of total	%		not known	not known
	Network under periodic maintenance	Kms		not known	;2
	Network under periodic maintenance as % of total	%		not known	not known
	Network under rehabilitation	Kms		not known	not known
	Network under rehabilitation as % of total	%		not known	not known
	Network upgrading	Kms		not known	not known
	Network upgrading as % of total	%		not known	not known
	Network planned for periodic next 3 yrs	Kms		not known	not known

Building Block	Data Item	Unit	Benchmark	2016	Jan 2017
	Network planned for rehabilitation next 3 yrs	Kms		not known	not known
	Network planned for upgrading next 3 yrs	Kms		not known	not known
Technical	Total network length in district	Kms		600	600
	Project network length	Kms		250	250
	Network length - engineered/gravelled	Kms		50	50
	Network length - non-engineered	Kms		50	50
	No of culverts - pipes			not known	500
	No of culverts - box			not known	25
	No of low level drifts			not known	5
	No of bridges			not known	2
	No of structures inspected			not known	532
	No of visual inspection cycles - road			not known	1
	No of vehicle counts			not known	nil
	% Network - Very Good			not known	0
	% Network - Good			not known	10
	% Network - Fair			not known	25
	% Network - Poor			not known	25
	% Network - Very Poor			not known	40
	% Culverts - Very Good			not known	5
	% Culverts - Good			not known	50
	% Culverts - Fair			not known	20
	% Culverts - Poor			not known	15
	% Culverts - Very Poor			not known	10
	% Bridges - Very Good			not known	5
	% Bridges - Good			not known	30
	% Bridges - Fair			not known	30
	% Bridges - Poor			not known	30
	% Bridges - Very Poor			not known	5
	No of impassable points - > 2 days closed			not known	10
Operational	No of graders			none	none
	No of tractors			none	none
	No of water bowsers			none	none
	No of tippers			none	none
	No of pedestrian rollers			none	none
	No of self-propelled rollers			none	none
	Average annual utilisation rate - graders	%		not known	not known
	No of roads supervisors			1	1
	No of foremen			3	3
	No of skilled and semi-skilled workers			not known	not known
	Total man-days of labour utilised			not known	not known
	No of roadworks tenders			not known	not known
	No of contracts awarded			not known	not known
	No of technical audits			nil	nil

Table 2.4: AM Baseline Data for Tonkolili

Building Block	Data Item	Unit	Benchmark	2016	Jan 2017
External	Stakeholder communication tools available	No.		1	1
	Meetings with stakeholders – pre-budget	No.		1	1
	Council meetings - strategy	No.		0	0
	Council meetings - budget approval	No.		1	1
	Meetings with stakeholders - post budget	No.		0	0
Institutional	Total establishment - engineers + technicians	No.		3	3
	Vacancies - engineers + technicians	No.		1	0
	Planned training programmes	No.		0	0
	Training courses undertaken	No.		0	0
	DE salary as % of private sector	%		65%	75%
Financial	Estimated project road network asset value	mUS\$		not known	not known
	Total requirements - routine maintenance	mUS\$		not known	not known
	Total requirements - periodic maintenance	mUS\$		not known	not known
	Total requirements - rehabilitation/reconstruction	mUS\$		not known	not known
	Total requirements - development	mUS\$		not known	not known
	Budget - routine maintenance	mUS\$		not known	not known
	Budget - periodic maintenance	mUS\$		not known	not known
	Budget - rehabilitation/reconstruction	mUS\$		not known	not known
	Budget - development	mUS\$		not known	not known
	Funding - Road fund	mUS\$		0.100	0.112
	Funding - Council funds	mUS\$		not known	not known
	Funding - Donors	mUS\$		not known	not known
Funding - Others	mUS\$		not known	not known	
Managerial	Cost of asset management system	US\$		not known	not known
	Annual maintenance cost of AM system	US\$		not known	not known
	Network under routine maintenance	Kms		not known	not known
	Network under routine maintenance as % of total	%		not known	not known
	Network under periodic maintenance	Kms		not known	not known
	Network under periodic maintenance as % of total	%		not known	not known
	Network under rehabilitation	Kms		not known	not known
	Network under rehabilitation as % of total	%		not known	not known
	Network upgrading	Kms		not known	not known
	Network upgrading as % of total	%		not known	not known
	Network planned for periodic next 3 yrs	Kms		not known	not known
	Network planned for rehabilitation next 3 yrs	Kms		not known	not known
	Network planned for upgrading next 3 yrs	Kms		not known	not known
Technical	Total network length in district	Kms		600	600
	Project network length	Kms		250	250
	Network length - engineered/gravelled	Kms		50	50
	Network length - non-engineered	Kms		50	50
	No of culverts - pipes			not known	500
	No of culverts - box			not known	25
	No of low level drifts			not known	5

Building Block	Data Item	Unit	Benchmark	2016	Jan 2017
	No of bridges			not known	2
	No of structures inspected			not known	532
	No of visual inspection cycles - road			not known	1
	No of vehicle counts			not known	nil
	% Network - Very Good			not known	0
	% Network - Good			not known	10
	% Network - Fair			not known	25
	% Network - Poor			not known	25
	% Network - Very Poor			not known	40
	% Culverts - Very Good			not known	5
	% Culverts - Good			not known	50
	% Culverts - Fair			not known	20
	% Culverts - Poor			not known	15
	% Culverts - Very Poor			not known	10
	% Bridges - Very Good			not known	5
	% Bridges - Good			not known	30
	% Bridges - Fair			not known	30
	% Bridges - Poor			not known	30
	% Bridges - Very Poor			not known	5
	No of impassable points - > 2 days closed			not known	10
Operational	No of graders			none	none
	No of tractors			none	none
	No of water bowsers			none	none
	No of tippers			none	none
	No of pedestrian rollers			none	none
	No of self-propelled rollers			none	none
	Average annual utilisation rate - graders	%		not known	not known
	No of roads supervisors			1	1
	No of foremen			3	3
	No of skilled and semi-skilled workers			not known	not known
	Total man-days of labour utilised			not known	not known
	No of roadworks tenders			not known	not known
	No of contracts awarded			not known	not known
	No of technical audits			nil	nil

2.4 Summary of Asset Management Capacity in the Project Areas

2.4.1 Chongwe Municipality, Zambia

- Asset Management at district or municipal level is a new concept in Zambia. It is being viewed as beneficial in ensuring preservation of the road network.
- Chongwe Municipality has a well-defined over-arching vision and policy. However, this is still to be translated into a specific RAM vision and policy.
- Involvement of stakeholders and elected councillors in road preservation matters has been implied but is still to be witnessed.

- The technical department of Chongwe Municipal Council is well defined with roles and responsibilities specified. The district is receiving support from the Road Development Agency's (RDA) research division and RDA Lusaka Regional Office.
- Funding of road preservation is inadequate and network needs are far from being met. The main source of funds is the Road Fund.
- Network planning processes have suffered due to lack of adequate staff and poor funding. The network is not referenced and is not inventoried. The GEM project introduced structured condition surveys and these are being adopted.
- Roadworks are conducted using in-house resources as well as the Zambia National Service (of the Zambian Defence Force) and the private sector.

2.4.2 Uganda National Roads Authority

- The framework for asset management is largely in place although it is biased towards Class A and B roads; the GEM project focuses on Class C roads and below.
- There is minimal involvement of stakeholders in the development of works plans or reporting on progress.
- Funding of road preservation is poor; network needs are far from being met and funds are disbursed late from the Road Fund.
- Planning processes have suffered due to poor funding of the network.
- Whilst planning and operational manuals are available they have largely not been utilised.
- The rural road network is not well referenced although it has been inventoried.
- The technical departments of UNRA are well defined with roles and responsibilities specified. The incumbents, who by and large are new in their posts, are striving to understand what is expected of them.
- There is an element of over-staffing in UNRA and this has led to inefficiencies in key operations due to the inherent bureaucratic processes.
- There are significant potential benefits that will accrue to road users if rural roads are considered as assets and considered in the same manner as higher-class roads.

2.4.3 Kamuli District (Uganda)

- Asset Management at the district level is in its infancy with AM policy still to be developed.
- There is significant involvement of stakeholders and elected councillors in the selection of projects for the limited funds available.
- The technical department of council is well defined with roles and responsibilities specified. The incumbents are making efforts to understand what is expected of them.
- Funding of road preservation is poor; network needs are far from being met and funds are disbursed late from the Road Fund. Due to poor funding of the network, planning processes have suffered; whilst guidelines are available they have largely not been employed.
- The network is not referenced and has not been inventoried. The GEM project re-introduced structured condition surveys.
- Road asset management at the national level under UNRA is more established than at the district level.

2.4.4 Tonkolili District (Uganda)

- Sierra Leone has embraced the Asset Management approach. The SLRA, the national road agency, is providing full support to Tonkolili District.
- The AM vision, policy and strategies are still to be developed.
- Local communities are consulted for their input to road prioritisation at ward level, but there is also significant involvement of elected councillors in selection of projects
- The funding available for road improvements and maintenance is very limited.
- The technical department of council is well defined with roles and responsibilities specified. SLRA has gone a step further and seconded an Engineer to the council, with a fully equipped office and transport.
- Funding of road preservation is relatively poor. Network needs are far from being met and funds are disbursed late by the Road Fund. Many roads are now in non-maintainable status and need rehabilitation or reconstruction.
- The network had not been referenced before nor surveyed in terms of condition in the recent past. The methods introduced under the GEM project are being adopted.

2.4.5 Western Cape Province

- The concept of Asset Management is well established in the organisation and is approaching an advanced status.
- AM policies are generally well developed and effectively disseminated in the organisation.
- A strong well defined institutional structure exists which is well staffed and headed by experienced and dedicated personnel.
- Efforts are underway to implement a sustainable transfer of the AM knowledge base to junior staff through annual training programmes.
- Maintenance strategy well operationalised through timely road condition monitoring, budgeting and tendering to optimise the use of the available resources.
- Road preservation has historically been well-funded over the years and force account units are employed for routine and periodic maintenance of district roads. Thus, 57% of the network is in a fair or better condition.
- The road network is well referenced and structured visual condition surveys are undertaken yearly. Results are stored in a well-developed computer based system which can be accessed by stakeholders on the internet.

3 Road Inventory and Condition Baseline

3.1 Purpose of Road Condition Monitoring

Road condition is a key variable for the measurement of social and economic impacts of access provision in rural communities. Improvement in rural roads asset management is expected to translate into improved roads condition. This will result in lower transport costs and improved availability of transport.

3.2 Identification of Project Networks

A road network has been identified in each of the participating areas for GEM study purposes. An inventory of the roads and drainage structures has been prepared. The inventory data are held in paper and electronic form. The GEM Advisory Team is assisting the agencies on the best approach to setting up systems for the management of these data, ensuring that the data are securely stored and is accessible to all users.

3.3 Road Condition Monitoring

According to the project design, the participating roads agencies will undertake road condition monitoring surveys on the GEM road network annually and before the PIT meeting². These surveys are at network level. The GEM Advisory Team is also advising the agencies on project level condition surveys for the preparation of more accurate estimates for physical works, be they rehabilitation, upgrading, periodic or routine maintenance. Advice is being given on undertaking simple surveys such as monthly road patrols for planning routine maintenance activities.

The road condition analysis is based on the conventional approach³ where defects are identified visually and given a score of 1 to 5 on “degree” and “extent”. This enables a condition index to be calculated for each road link and for the network. It also enables the calculation of road asset value. The parameters that are measured in the visual assessment have been selected in accordance with the needs of the project road networks, which comprise predominantly earth and gravel roads. The parameters are:

- Gravel loss⁴
- Usable road width
- Erosion of the carriageway
- Erosion of the side drains
- Potholes
- Corrugations
- Rutting
- Impassability

The baseline data from the participating agencies is included in Annex A-E.

² It is expected that the timing of the condition surveys will be influenced by climatic factors, particularly the rainy seasons, as the project develops and the surveys become part of normal practice in the project areas.

³ As set out in TMH 12 “Standard Visual Assessment Manual for Unsealed Roads”.

⁴ Gravel loss is currently being assessed through the visual assessment in Zambia, Uganda and Sierra Leone. As the agencies develop more capacity, it is expected that the Western Cape practice of physically measuring gravel thickness will be adopted by the other countries.

3.4 Functional and Condition Indices

The visual condition data have been used to calculate the following indices as defined in TMH 22 “Road Asset Management Manual”:

- **“Functional Index”** - an appraisal of the asset in terms of functional characteristics that affect the quality of use, notably comfort (convenience) safety, congestion and operating cost.
- **“Condition Index”** - the numerical rating of an asset depending on its structural integrity or condition, measured as a percentage (calculated separately for the road formation and the pavement).

Table 5 summarises the functional and condition indices for the road network in the project areas derived from the baseline visual condition data.

Table 5: Network Functional and Condition Indices

Index	Chongwe Municipal Council		UNRA		Kamuli District		Tonkolili District	
Functional Index	66%	Fair	79%	Good	81%	Good	41%	Poor
Condition Index (Pavement)	21%	Very Poor	87%	Very Good	91%	Very Good	35%	Poor
Condition Index (Formation)	26%	Very Poor	71%	Good	81%	Good	52%	Fair

According to the baseline data the rural roads networks in Uganda are in considerably better condition than they are in the project districts in Zambia and Sierra Leone. This will be verified through the second round of condition survey in October 2017.

4 Socio-economic Baseline

4.1 Approach

The purpose of the socio-economic study is to establish a link between rural road AM and the well-being of local communities, and to use this evidence to lobby for increased funding for rural roads.

A number of socio-economic measures have been captured for each rural district as part of the baseline survey. The data will be analysed using standard statistical procedures to determine representative values for road sections (where possible), to look for consistencies between measures for the same district (for example by plotting travel times vs. produce cost) and to determine relationships within districts and across districts between socio-economic measures and measures of road condition (for example road roughness and travel times).

The investigation of consistencies between the measures of performance will help to identify inconsistent and possibly erroneous data. It is expected that it will be possible over time to link changes in asset management performance (as captured by the district self-assessment questions) to changes in road condition and thereby improvements in the socio-economic measures of performance. By so doing, it is intended to be able to identify the key measures of socio-economic performance. These may be different between the participating districts due to differences in social demographics and economic activity.

4.2 Chongwe Municipal Council

Socioeconomic baseline data collection in Chongwe was completed in December 2016. Data collection in the ten trading centres in Chongwe can be done in eight weeks given resource availability, including three personnel and a vehicle. The district is looking at the possibility of using trained data collectors under the Planning Department that is responsible for socioeconomic development affairs. The baseline data are included in Annex A.

4.3 Uganda National Roads Authority

UNRA conducted socioeconomic baseline data collection in the period between November 2016 and January 2017. Training of the survey team was carried out by UNRA social development experts. A review of the baseline survey process identified the need for further training of the enumerators to enhance the quality of data from future surveys. The baseline data for UNRA are included in Annex B.

4.4 Kamuli District

Kamuli District conducted the socioeconomic baseline data collection in the period between November 2016 and January 2017 using in-house resources. The baseline data for Kamuli are included in Annex C.

4.5 Tonkolili District

The socioeconomic baseline data collection in Tonkolili District was undertaken between December 2016 and January 2017. The survey team could collect the required data in one trading centre per day. The baseline data for Kamuli are included in Annex D.

According to the district officials, this was their first time to engage in baseline data collection intended to measure socioeconomic impact of investment in rural roads. Training

for the district data collection team was undertaken in November 2016 by a senior Sociologist from SLRA. Also, due to financial challenges at district level, financial support was provided by SLRA to meet the costs of the survey.

Due to survey burnout, many rural communities in Sierra Leone are not keen to participate in surveys as they do not perceive their value to the community. Thus, for data collection to become realistic and effective, it is important to obtain political support at local level as well as to cultivate interviewing skills for data teams. It is important that the teams are conversant in the language of participating communities.

Annex A. Baseline Data – Chongwe Municipal Council (Zambia)

Self-Assessment Questionnaire Scores - Chongwe

Building Block	#	Item Assessed	Agency Score	Advisory Team Score	Mar 17 Joint Review
External	1.1	Stakeholder consultation	3	1	0
	1.2	Council engagement	3	2	2
Institutional	2.1	AM policy development	4	1	2
	2.2	Level of service -in existence	0	0	0
	2.3	Level of service - in use	0	0	0
	2.4	Emergency response plan	2	2	2
	2.5	Staff roles and responsibilities	2	3	1
	2.6	Staff training and capacity building	1	3	1
	2.7	Staff salaries	1	2	1
Financial	3.1	Provision of road maintenance funding	0	2	0
	3.2	Budget funding against perceived need	1	1	0
	3.3	Asset valuation	1	0	1
	3.4	Budget funding - asset value	0	0	0
	3.5	Financial forecasting	2	1	0
	3.6	Accounting system	3	3	1
Managerial	4.1	AM system	0	1	0
	4.2	Maintenance intervention levels	0	0	0
	4.3	Maintenance plans - existence	3	1	1
	4.4	Maintenance plans - methods used	2	1	1
	4.5	Maintenance backlog	1	0	0
	4.6	Traffic forecasting	0	0	0
	4.7	Capital expenditure - basis for	3	1	1
Technical	5.1	Road referencing system - existence	1	2	1
	5.2	Road inventory - existence	2	1	2
	5.3	Road inventory data	1	1	2
	5.4	Road condition assessment	1	0	2
	5.5	Asset utilisation	1	0	0
Operational	6.1	Service delivery mechanisms	3	2	3
	6.2	Maintenance planning	4	1	4
	6.3	Auditing	0	1	0

Assessment of RAM Performance Indicators - Chongwe

Weighting Ranking	Building Block	Max. Possible Score	Agency Score	Mar 17 Joint Review Score	Weighting
1	External	4	3.0	1.0	0.24
2	Institutional	4	1.4	1.0	0.20
3	Financial	4	1.2	0.3	0.17
4	Managerial	4	1.3	0.4	0.15
5	Technical	4	1.2	1.4	0.13
6	Operational	4	2.3	2.3	0.11
Rural Road Asset Management Assessment Score				1.0	1.00
Rural Road Asset Management Rating				Minimum	
Rural Road Preservation Index (RAPI)				0.25	

(Scale: 0 - 1)

Road Condition Data – Chongwe Municipal Council

Road Agency Name:		Chongwe Municipal Council				District			Chongwe	Condition assessment																
GEM Road No	Road No	Road Name	Road Type	Segment No.	Start Km	End Km	Length (km)	Road Length (km)	Gravel Loss		Usable Width		Erosion C-Way		Erosion-S/Drains		Potholes		Corrugations		Rutting		Impassability			
									D	E	D	E	D	E	D	E	D	E	D	E	D	E	D	E		
1		Mpemba - Mulenje	Gravel	1	+0	5+000	5.0	15.0	3	3	1	3	4	4	4	4	3	3	1	1	1	1	1	1	4	
1		Mpemba - Mulenje	Gravel	2	5+000	10+000	5.0		3	3	2	3	4	4	4	5	3	3	1	1	2	2	1	1	4	
1		Mpemba - Mulenje	Earth	3	10+000	15+000	5.0		3	3	2	3	4	4	4	5	3	3	1	1	2	2	1	1	4	
2		Mwalumina - Chongwe River	Gravel	1	+0	5+000	5.0	40.2	3	5	2	1	2	2	1	1	3	3	1	1	2	1	1	1	4	
2		Mwalumina - Chongwe River	Gravel	2	5+000	10+000	5.0		3	5	2	1	2	2	1	1	3	3	1	1	2	1	2	1	4	
2		Mwalumina - Chongwe River	Gravel	3	10+000	15+000	5.0		3	5	1	1	1	1	1	1	2	1	2	2	1	1	1	1	4	
2		Mwalumina - Chongwe River	Gravel	4	15+000	20+000	5.0		3	5	1	1	1	1	1	1	2	1	2	1	1	1	1	1	4	
2		Mwalumina - Chongwe River	Gravel	5	20+000	25+000	5.0		3	5	1	1	1	1	1	1	2	1	2	1	2	3	1	1	4	
2		Mwalumina - Chongwe River	Gravel	6	25+000	30+000	5.0		3	5	3	1	1	1	2	2	2	1	2	1	2	3	1	1	4	
2		Mwalumina - Chongwe River	Gravel	7	30+000	35+000	5.0		4	5	2	2	2	2	3	3	3	2	3	4	1	1	1	1	4	
2		Mwalumina - Chongwe River	Earth	8	35+000	40+200	5.2		4	5	2	2	2	2	3	3	3	2	3	4	1	1	1	1	4	
3		Lukoshi - Nchute	Earth	1	+0	5+000	5.0	17.2	1	1	3	3	2	2	3	3	2	2	1	1	1	1	1	4		
3		Lukoshi - Nchute	Earth	2	5+000	10+000	5.0		1	1	3	3	2	2	3	3	2	2	1	1	1	1	1	1	4	
3		Lukoshi - Nchute	Gravel	3	10+000	15+000	5.0		1	1	2	2	4	4	3	3	2	2	1	1	1	1	1	1	4	
3		Lukoshi - Nchute	Gravel	4	15+000	17+200	2.2		2	2	2	2	2	2	3	3	1	1	1	1	1	1	1	1	4	
4		Ndapula - Lwimba River	Gravel	1	+0	5+000	5.0	5.0	1	1	2	2	3	3	3	3	4	4	1	1	1	1	1	4		
5		Jakapa - Chibwalu	Gravel	1	+0	5+000	5.0	10.0	1	1	4	4	4	4	3	3	4	4	1	1	1	1	1	2	4	
5		Jakapa - Chibwalu	Gravel	2	5+000	10+000	5.0		1	1	3	3	5	5	3	3	5	5	1	1	1	1	1	1	4	
6		Kasubanya	Gravel	1	+0	5+000	5.0	10.0	1	1	2	2	1	1	2	2	1	1	1	1	1	1	1	2	4	
6		Kasubanya	Gravel	2	5+000	10+000	5.0		1	1	2	2	4	4	3	3	3	3	1	1	1	1	1	1	4	
7		Mwampatisha	Gravel	1	+0	5+000	5.0	9.5	2	2	1	1	1	4	1	1	1	1	1	1	1	1	1	2	4	
7		Mwampatisha	Gravel	2	5+000	9+500	4.5		2	2	3	2	4	5	3	4	1	1	1	1	1	1	1	1	2	4
8		Mutumbisha	Gravel	1	+0	4+000	4.0	6.8	2	2	3	3	4	5	1	1	4	4	1	1	1	1	1	2	4	
8		Mutumbisha	Gravel	2	4+000	6+800	2.8		2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	4
9	U13	U13	Gravel	1	+0	4+800	4.8	4.8	2	2	1	1	2	2	1	1	3	2	1	1	1	1	1	2	4	
10		Chishiko - Kabeleka	Gravel	1	+0	4+000	4.0	6.4	2	2	2	1	5	5	5	5	4	4	1	1	2	2	2	2	4	
10		Chishiko - Kabeleka	Gravel	2	4+000	6+000	2.0		2	2	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	4
10		Chishiko - Kabeleka	Gravel	3	6+000	6+400	0.4		2	2	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	4
11	U4	Kalulu	Gravel	1	+0	5+500	5.5	5.5	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	2	4	
12		Matipula	Gravel	1	+0	2+900	2.9	6.1	1	1	2	2	3	3	2	2	3	2	3	1	1	1	1	2	4	
12		Matipula	Gravel	2	2+900	6+100	3.2		2	2	3	2	4	4	2	2	4	3	3	2	1	1	1	1	2	4
13	U18	Mapulanga	Earth	1	+0	5+000	5.0	15.5	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	4		
13	U18	Mapulanga	Earth	2	5+000	10+000	5.0		1	1	1	1	1	1	1	1	1	2	1	1	2	1	2	4		
13	U18	Mapulanga	Gravel	3	10+000	15+500	5.5		1	1	3	2	3	3	3	2	2	1	1	1	3	3	3	3	4	

Economic Growth through Effective Road Asset Management – Consolidated Baseline Study Report

14	U9	T4 - Kapete	Gravel	1	+0	4+000	4.0	13.0	2	3	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	3	4
14	U9	T4 - Kapete	Gravel	2	4+000	8+000	4.0		1	2	1	1	1	2	1	1	1	1	2	3	1	1	3	4			
14	U9	T4 - Kapete	Gravel	3	8+000	13+000	5.0		1	1	1	1	1	1	1	1	1	1	2	1	1	3	4				
15		Mupelekese	Gravel	1	+0	5+000	5.0	32.3	1	1	1	1	1	1	1	2	3	2	5	1	1	3	4				
15		Mupelekese	Earth	2	5+000	10+000	5.0		1	1	1	1	1	1	1	2	3	3	5	1	1	3	4				
15		Mupelekese	Earth	3	10+000	15+000	5.0		1	1	1	1	1	1	1	2	3	3	5	1	1	3	4				
15		Mupelekese	Earth	4	15+000	20+000	5.0		3	5	1	1	3	2	4	5	2	2	4	5	1	1	3	4			
15		Mupelekese	Earth	5	20+000	25+000	5.0		1	1	1	1	1	1	1	3	3	3	5	1	1	3	4				
15		Mupelekese	Earth	6	25+000	30+000	5.0		1	1	1	1	1	1	1	1	1	1	1	3	5	3	4				
15		Mupelekese	Earth	7	30+000	32+300	2.3		1	1	1	1	1	1	1	1	1	1	1	3	1	3	4				
16	U11	Chiyota	Earth	1	+0	5+000	5.0		9.5	2	2	1	1	1	2	1	1	1	3	1	2	3	4				
16	U11	Chiyota	Earth	2	5+000	9+500	4.5	2		4	1	2	2	1	2	1	3	3	1	2	2	3	4				
17	U6	Corner Bar - Watergreen	Earth	1	+0	4+300	4.3	4.3	2	2	1	2	1	3	1	3	1	1	1	2	3	4					
18	U5	Chikwela - Kapuka	Gravel	1	+0	4+500	4.5	6.2	3	1	1	3	4	3	4	2	1	1	1	1	2	3	4				
18	U5	Chikwela - Kapuka	Gravel	2	4+500	6+200	1.7		4	1	1	1	4	5	4	5	1	1	1	1	2	2	3	4			
19	A1	RD480 - Kasisi	Gravel	1	+0	5+000	5.0	30.2	3	3	1	1	1	1	1	3	2	3	5	1	1	3	4				
19	A1	RD480 - Kasisi	Gravel	2	5+000	10+000	5.0		3	2	1	1	1	1	1	3	2	3	4	1	1	3	4				
19	A1	RD480 - Kasisi	Earth	3	10+000	15+000	5.0		3	2	1	1	1	1	1	3	2	3	4	1	1	3	4				
19	A1	RD480 - Kasisi	Earth	4	15+000	20+000	5.0		3	3	1	1	1	1	1	3	2	3	5	1	1	3	4				
19	A1	RD480 - Kasisi	Earth	5	20+000	25+000	5.0		3	5	1	1	2	1	1	4	2	5	5	5	5	3	4				
19	A1	RD480 - Kasisi	Gravel	6	25+000	30+000	5.0		3	5	3	1	2	2	1	1	4	4	1	1	5	5	3	4			
19	A1	RD480 - Kasisi	Gravel	7	30+000	30+200	0.2		3	5	3	1	2	2	1	1	4	3	1	1	5	5	3	4			
20	U8	T4 - Kagwila	Gravel	1	+0	5+700	5.7	5.7	3	4	1	1	3	3	3	3	1	1	1	1	2	2	4	4			
								D - DEGREE/SEVERITY																			
DEFECTS RATING CRITERIA								1. Slight 2. Slight to Warning 3. Warning 4. Warning to Severe 5. Severe																			
								E - DEFECT EXTENT/OCCURRENCE/QUANTITY																			
								% of length: 1. <5% 2. 5-10% 3. 10-25% 4. 25-50% 5 >50%																			

Socioeconomic Data for Chongwe Municipal Council

Question		Trading Centre										
		Units	1	2	3	4	5	6	7	8	9	10
	General											
1	Name of trading centre/village		Kanakantapa	Mpango	Kapete	Chilyabale	Nchute	Mulalika	Mwalumina	Lwimba	Chiyota	Soko Bar
2	GPS coordinates											
3	Map coordinates											
4	Population	No.	14,265	8,867	1,448	6,768	3,572	9,545	4,613	7,426	8,867	2,894
5	Distance from nearest paved road	km	6.6	10	7	16	14	0	6	10	12	16.4
6	Distance from district centre. <i>Name of centre:</i> Chongwe	km	6	22	13	30	40	18	29	20	42	28
7	Average travel time to district centre (by different modes of transport)	Min.	20	35	25	55	60	40	45	30	65	35
8	Name of the road serving the trading centre/village		Matipula	Mpango	T4 - Kapete	Mwalumina	Nchute-Lukoshi	Ndapula - Lwimba	Mwampatisha	Kasubanya	Mapulanga	RD 480 - Kasisi
9	How many days of the year is the road closed due to rains?	Days	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Availability and cost of transport												
10	No. of private transport operators serving the trading centre/village											
10.1	Light vehicle - Vans	No.	6	3	7	3	4	3	5	4	6	8
10.2	Bus/combi	No.	1	3	0	0	0	0	0	0	2	4
10.3	Motorcycle (boda-boda)	No.	6	3	3	5	3	4	5	4	5	4
10.4	Freight transport /trucks	No.	3	3	2	4	3	3	4	4	6	5
11	No. of available trips to district centre per day (on a normal day)											
11.1	Light vehicle - Vans	No.	3	2	5	2	2	3	3	2	2	2
11.2	Bus/combi	No.	1	0	0	0	0	0	0	0	1	3
11.3	Freight transport /trucks	No.	4	4	2	3	4	3	3	3	3	3
12	No. of available trips to district centre per day (on a market day)											
12.1	Light vehicle	No.	4	3	6	3	4	2	3	2	3	5
12.2	bus/combi	No.	1	0	0	0	0	0	3	3	2	3
12.3	Freight transport /trucks	No.	4	5	3	5	1	4	3	3	4	2
13	Fares on public transport to the district centre (passenger-km)											
13.1	Light vehicle - per trip	ZMK	5.00	10.00	10.00	10.00	15.00	20.00	15.00	10.00	15.00	10.00
13.2	Bus/combi - per trip	ZMK	8.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00	12.00

Question	Trading Centre											
	Units	1	2	3	4	5	6	7	8	9	10	
13.3	Motorcycle (boda-boda)	ZMK	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
14	Cost of freight transport to the district centre (ton-km)											
14.1	Truck (tonnes)- per load	ZMK	300.00	300.00	300.00	550.00	600.00	500.00	600.00	600.00	500.00	250.00
14.2	Light vehicle (tonnes)-- per load	ZMK	150.00	200.00	150.00	300.00	300.00	350.00	350.00	400.00	250.00	150.00
14.3	IMTs /motorcycle (tonnes)	ZMK	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Price of goods in the trading centre/village		Kanakantapa	Mpango	Kapete	Chilyabale	Nchute	Mulalika	Mwalumina	Lwimba	Chiyota	Soko Bar
15	Prices of three items exported from the village (e.g. potatoes, rice, maize, charcoal)											
15.1	<i>Item 1 (name)- state units: 25kg Charcoal</i>	ZMK	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
15.2	<i>Item 2 (name)- state units: 50kg Maize</i>	ZMK	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00
15.3	<i>Item 3 (name)- state units: 10kg Rice</i>	ZMK	130.00	130.00	130.00	130.00	130.00	130.00	130.00	130.00	130.00	130.00
16	Prices of three items imported into the village (e.g. petrol, soap, batteries, seed, fertiliser)											
16.1	<i>Item 1 (name)- state units: 50kg fertilizer</i>	ZMK	245.00	245.00	245.00	245.00	245.00	245.00	245.00	245.00	245.00	245.00
16.2	<i>Item 2 (name)- state units: 10 litres Petrol</i>	ZMK	125.00	125.00	125.00	125.00	125.00	125.00	125.00	125.00	125.00	125.00
16.3	<i>Item 3 (name)- state units: 10kg SEEDCO seed (Maize)</i>	ZMK	160.00	160.00	160.00	160.00	160.00	160.00	160.00	160.00	160.00	160.00
	Education- nearest school - Name of school		Chongwe Basic	Mupelekese	Kapete	Chilyabale	Lukoshi	Mulalika	Mwalumina	Ndapula	Chiyota	Kasenga
17	Average time to reach the nearest school from the trading centre by different modes of transport (by gender and age)	Min.	5	10	20	10	10	20	20	10	30	5
18	No. of pupils enrolled at the nearest school (gender disaggregated)	No.	112	100	100	95	115	110	100	100	95	120
19	Average monthly pupil attendance rate for past year (gender disaggregated)	No.	111	100	98	94	111	108	98	98	93	118
20	No. of staff employed at the school (gender disaggregated)	No.	27	27	30	27	27	26	29	26	31	33
21	Average monthly staff attendance rate for the past year (gender disaggregated)	No.	27	27	30	27	27	26	29	26	31	33
	Road safety											
22	Is road safety awareness taught to children at the school?		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
23	Are road safety awareness presentations made to adults in the village?		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
24	No. of accidents on the road serving the trading centre /village for past year	No.	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

Question	Trading Centre											
	Units	1	2	3	4	5	6	7	8	9	10	
		Kanakantapa	Mpango	Kapete	Kampekete	Nchute	Katoba	Mwalumina	Lwimba	Mpango	Kasenga	
25	Average time to reach the nearest health centre from the trading centre by different modes of transport (by gender and age)	Min.	20	30	15	25	30	25	15	10	45	30
26	Average no. of health workers at clinic each month for the past year (gender disaggregated)	No.	4	2	1	2	1	2	2	3	2	1
27	Average no. of patients treated each month for the past year (gender disaggregated)	No.	523	409	524	388	386	385	386	477	225	406
28	Is there an ambulance service available from the clinic to the district hospital?		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Agriculture											
29	What is the average no. of visits per mth by an extension worker to the village?	No.	2	2	2	2	2	2	2	2	2	2
30	Price of main cash crop produce in the district centre (per kg) - Maize	ZMK	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80
31	Price of main cash crop produce in the village/trading centre (per kg)	ZMK	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
32	Farm-gate price of main cash crop produce in the village (per kg)	ZMK	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Economic activities - non-farm											
33	Factories, local industries /cottage industries in the village/trading centre (type & no.)	No.	Block making -3	Nil	Nil	Nil	Beef/ chicken - 5	Nil	Nil	Nil	Welding/ block making - 1	Welding - 2, Dairy -1
34	No. of shops / kiosks in the village/trading centre	No.	9	5	6	8	6	5	7	4	9	7
	Price of goods in the district centre (same as priced in the village/trading centre)		Price									
35	Prices of the three items exported from the village											
35.1	Item 1 (name)- state units: 50 kg - maize (bag)	ZMK	80.00									
35.2	Item 2 (name)- state units: 25 kg charcoal (bag)	ZMK	50.00									
35.3	Item 3 (name)- state units: 90kg Groundnuts (bag)	ZMK	180.00									
36	Prices of the three items imported into the village											
36.1	Item 1 (name)- state units: 2 kg Packet of sugar	ZMK	25.00									
36.2	Item 2 (name)- state units: 50 kg pocket of cement	ZMK	65.00									
36.3	Item 3 (name)- state units: 25 kg breakfast – mealie-meal	ZMK	100.00									

Annex B. Baseline Data – UNRA

Self-Assessment Questionnaire Scores - UNRA

RAM Building Block	#	Item Assessed	Agency Score	Advisory Team Score	May 17 Joint Review
External	1.1	Stakeholder consultation	4	4	2
	1.2	Council and Parliament engagement	1	1	1
Institutional	2.1	AM policy development	3	3	2
	2.2	Level of service - existence	1	1	1
	2.3	Level of service - use	4	4	1
	2.4	Emergency response plan	1	1	2
	2.5	Staff roles and responsibilities	3	3	1
	2.6	Staff training and capacity building	4	4	2
	2.7	Staff salaries	1	1	4
Financial	3.1	Provision of road maintenance funding	1	1	3
	3.2	Budget funding against perceived need	0	0	3
	3.3	Asset valuation	2	2	0
	3.4	Budget funding - asset value	0	0	0
	3.5	Financial forecasting	2	2	0
	3.6	Accounting system	4	4	3
Managerial	4.1	AM system	4	4	1
	4.2	Maintenance intervention levels	4	4	0
	4.3	Maintenance plans - existence	4	4	3
	4.4	Maintenance plans - methods used	4	4	2
	4.5	Maintenance backlog	4	4	1
	4.6	Traffic forecasting	4	4	0
	4.7	Capital expenditure - basis for	4	4	2
Technical	5.1	Road referencing system - existence	3	3	4
	5.2	Road inventory - existence	4	4	2
	5.3	Road inventory data	3	3	2
	5.4	Road condition assessment	4	4	1
	5.5	Asset utilisation	4	4	1
Operational	6.1	Service delivery mechanisms	4	4	3
	6.2	Maintenance planning	4	4	0
	6.3	Auditing	3	3	2

Assessment of RAM Performance Indicators - UNRA

Weighting Ranking	RAM Building Block	Max. Possible Score	Agency Score	Advisory Team Score	May 17 Joint Review	Weighting
1	External	4	2.5	2.5	1.5	0.24
2	Institutional	4	2.4	2.4	1.9	0.20
3	Financial	4	1.5	1.5	1.5	0.17
4	Managerial	4	4.0	4.0	1.3	0.15
5	Technical	4	3.6	3.6	2.0	0.13
6	Operational	4	3.7	3.7	1.7	0.11
Rural Road Asset Management Assessment Score					1.6	
Rural Road Asset Management Rating					Core	
Rural Road Preservation Index (RAPI)					0.41	
						(Scale: 0 - 1)

Road Condition Data – UNRA

Road Agency Name:		Uganda National Road Agency (UNRA)			District		Jinja																		
GEM Road No	Road No	Road Name	Road Type	Segment No.	Start Km	End Km	Length (km)	Road Length (km)	Gravel Loss		Usable Width		Erosion C-Way		Erosion-S/Drains		Potholes		Corrugations		Rutting		Impassability		
									D	E	D	E	D	E	D	E	D	E	D	E	D	E	D	E	
1		Iganga - Kamuli	Gravel	1	+0	5+000	5.00	57.0	1	1	1	1	1	2	1	1	0	0	2	2	2	2	1	4	
1		Iganga - Kamuli	Gravel	2	5+000	10+000	5.00		1	1	1	1	1	2	1	1	0	0	2	2	2	2	1	4	
1		Iganga - Kamuli	Gravel	3	10+000	15+000	5.00		1	1	1	1	1	2	1	1	0	0	2	2	2	2	1	4	
1		Iganga - Kamuli	Gravel	4	15+000	20+000	5.00		1	1	1	1	1	2	1	1	0	0	2	2	2	2	1	4	
1		Iganga - Kamuli	Gravel	5	20+000	25+000	5.00		1	1	1	1	1	2	1	1	0	0	2	2	2	2	1	4	
1		Iganga - Kamuli	Gravel	6	25+000	30+000	5.00		1	1	1	1	1	2	1	1	0	0	2	2	2	2	1	4	
1		Iganga - Kamuli	Gravel	7	30+000	35+000	5.00		1	1	1	1	1	2	1	1	0	0	2	2	2	2	1	4	
1		Iganga - Kamuli	Gravel	8	35+000	40+000	5.00		1	1	1	1	1	2	1	1	0	0	2	2	2	2	1	4	
1		Iganga - Kamuli	Gravel	9	40+000	45+000	5.00		1	1	1	1	1	2	1	1	0	0	2	2	2	2	1	4	
1		Iganga - Kamuli	Gravel	10	45+000	50+000	5.00		1	1	1	1	1	1	1	1	0	0	1	2	1	2	1	4	
1		Iganga - Kamuli	Gravel	11	50+000	55+000	5.00		3	3	1	1	1	1	1	1	2	2	1	1	1	1	1	1	4
1		Iganga - Kamuli	Gravel	12	55+000	57+000	2.00		2	2	1	1	1	1	1	1	2	2	1	1	1	1	1	1	4
2		Kamuli - Bukungu	Earth	1	+0	5+000	5.00	67.0	1	1	1	1	1	2	1	1	1	2	1	2	1	2	1	4	
2		Kamuli - Bukungu	Earth	2	5+000	10+000	5.00		1	1	1	1	1	2	1	1	1	2	1	2	1	2	1	4	
2		Kamuli - Bukungu	Earth	3	10+000	15+000	5.00		1	1	1	1	1	2	1	1	1	2	1	2	1	2	1	4	
2		Kamuli - Bukungu	Earth	4	15+000	20+000	5.00		1	1	1	1	1	2	1	1	1	2	1	2	1	2	1	4	
2		Kamuli - Bukungu	Earth	5	20+000	25+000	5.00		1	1	1	1	1	2	1	1	1	2	1	2	1	2	1	4	
2		Kamuli - Bukungu	Earth	6	25+000	30+000	5.00		1	1	1	1	1	2	1	1	1	2	1	2	1	2	1	4	
2		Kamuli - Bukungu	Earth	7	30+000	35+000	5.00		1	1	1	1	1	2	1	1	1	2	1	2	1	2	1	4	
2		Kamuli - Bukungu	Earth	8	35+000	40+000	5.00		1	1	1	1	1	2	1	1	1	2	1	2	1	2	1	4	
2		Kamuli - Bukungu	Earth	9	40+000	45+000	5.00		1	1	1	1	1	2	1	1	1	2	1	2	1	2	1	4	
2		Kamuli - Bukungu	Earth	10	45+000	50+000	5.00		1	1	1	1	2	2	1	1	2	2	2	2	2	2	1	4	
2		Kamuli - Bukungu	Earth	11	50+000	55+000	5.00		1	1	1	1	2	2	1	1	2	2	2	2	2	2	1	4	
2		Kamuli - Bukungu	Earth	12	55+000	60+000	5.00		1	1	1	1	2	2	1	1	2	2	2	2	2	2	1	4	
2		Kamuli - Bukungu	Earth	13	60+000	65+000	5.00		1	1	1	1	2	2	1	1	2	2	2	2	2	2	1	4	
2		Kamuli - Bukungu	Earth	14	65+000	67+000	2.00		1	1	1	1	2	2	1	1	2	2	2	2	2	2	1	4	
3		Kamuli - Namasagali	Gravel	1	+0	5+000	5.00	22.0	4	4	1	1	2	2	1	1	2	2	2	2	2	2	1	4	
3		Kamuli - Namasagali	Gravel	2	5+000	10+000	5.00		4	4	1	1	2	2	1	1	2	2	2	2	2	2	1	4	
3		Kamuli - Namasagali	Gravel	3	10+000	15+000	5.00		4	4	1	1	2	2	1	1	2	2	2	2	2	2	1	4	
3		Kamuli - Namasagali	Gravel	4	15+000	20+000	5.00		4	4	1	1	2	2	1	1	2	2	2	2	2	2	1	4	

Economic Growth through Effective Road Asset Management – Consolidated Baseline Study Report

3	Kamuli - Namasagali	Gravel	5	20+000	22+000	2.00	47.0	4	4	1	1	2	2	1	1	2	2	2	2	2	2	1	4		
4	Nabirunda - Kidera	Gravel	1	+0	5+000	5.00		4	4	1	1	2	2	2	2	2	2	2	2	2	2	2	1	4	
4	Nabirunda - Kidera	Gravel	2	5+000	10+000	5.00		4	4	1	1	2	2	2	2	2	2	2	2	2	2	2	1	4	
4	Nabirunda - Kidera	Gravel	3	10+000	15+000	5.00		4	4	1	1	2	2	2	2	2	2	2	2	2	2	2	1	4	
4	Nabirunda - Kidera	Gravel	4	15+000	20+000	5.00		4	4	1	1	2	2	2	2	2	2	2	2	2	2	2	1	4	
4	Nabirunda - Kidera	Gravel	5	20+000	25+000	5.00		4	4	1	1	2	2	2	2	2	2	2	2	2	2	2	1	4	
4	Nabirunda - Kidera	Gravel	6	25+000	30+000	5.00		4	4	1	1	2	2	2	2	2	2	2	2	2	2	2	1	4	
4	Nabirunda - Kidera	Gravel	7	30+000	35+000	5.00		4	4	1	1	2	2	2	2	2	2	2	2	2	2	2	1	4	
4	Nabirunda - Kidera	Gravel	8	35+000	40+000	5.00		4	4	1	1	2	2	2	2	2	2	2	2	2	2	2	1	4	
4	Nabirunda - Kidera	Gravel	9	40+000	45+000	5.00		4	4	1	1	2	2	2	2	2	2	2	2	2	2	2	1	4	
4	Nabirunda - Kidera	Gravel	10	45+000	47+000	2.00	4	4	1	1	2	2	2	2	2	2	2	2	2	2	2	1	4		
5	Buwenge - Nakabugu	Gravel	1	+0	5+000	5.00	46.0	3	3	1	1	1	1	1	1	0	0	0	0	0	0	1	4		
5	Buwenge - Nakabugu	Gravel	2	5+000	10+000	5.00		3	3	1	1	1	1	1	1	0	0	0	0	0	0	0	1	4	
5	Buwenge - Nakabugu	Gravel	3	10+000	15+000	5.00		4	4	1	1	2	1	1	1	0	0	1	1	2	1	1	1	4	
5	Buwenge - Nakabugu	Gravel	4	15+000	20+000	5.00		4	4	1	1	2	1	1	1	0	0	1	1	2	1	1	1	4	
5	Buwenge - Nakabugu	Gravel	5	20+000	25+000	5.00		5	5	1	1	1	1	1	1	2	1	0	0	3	3	1	1	4	
5	Buwenge - Nakabugu	Gravel	6	25+000	30+000	5.00		5	5	1	1	1	1	1	1	2	1	0	0	3	3	1	1	4	
5	Buwenge - Nakabugu	Gravel	7	30+000	35+000	5.00		4	4	1	1	1	1	1	1	0	0	0	0	0	0	1	1	4	
5	Buwenge - Nakabugu	Gravel	8	35+000	40+000	5.00		4	4	1	1	1	1	1	1	0	0	0	0	0	0	1	1	4	
5	Buwenge - Nakabugu	Gravel	9	40+000	46+000	6.00		4	4	1	1	2	1	1	1	0	0	0	0	0	0	1	1	4	
6	Kaliro - Kamuli	Earth	1	+0	5+000	5.00	44.5	2	2	1	1	2	2	3	3	2	1	2	1	3	3	1	4		
6	Kaliro - Kamuli	Earth	2	5+000	10+000	5.00		2	2	1	1	1	3	1	3	1	1	1	2	3	4	1	1	4	
6	Kaliro - Kamuli	Earth	3	10+000	15+000	5.00		2	2	1	1	1	3	1	3	1	1	1	2	3	4	1	1	4	
6	Kaliro - Kamuli	Earth	4	15+000	21+400	6.40		1	1	1	1	3	2	1	1	0	0	0	0	1	2	1	1	4	
6	Kaliro - Kamuli	Earth	5	21+400	28+000	6.60		2	2	1	1	1	3	2	2	1	2	1	1	1	0	0	1	1	4
6	Kaliro - Kamuli	Earth	6	28+000	31+700	3.70		2	2	1	1	3	2	1	1	3	3	1	1	1	0	0	1	1	4
6	Kaliro - Kamuli	Earth	7	31+700	37+700	6.00		4	4	1	1	2	2	1	1	2	2	2	2	3	3	1	1	4	
6	Kaliro - Kamuli	Earth	8	37+700	41+500	3.80		4	4	1	1	1	1	1	1	2	4	2	2	3	4	1	1	4	
6	Kaliro - Kamuli	Earth	9	41+500	44+500	3.00		4	4	1	1	1	1	1	1	2	4	2	2	3	4	1	1	4	
7	Kaliro - Nawa - Irundu	Gravel	1	+0	5+000	5.00	50.2	2	2	1	1	1	3	3	3	1	1	1	1	3	3	1	1	4	
7	Kaliro - Nawa - Irundu	Gravel	2	5+000	12+000	7.00		2	2	1	1	1	3	3	3	1	1	1	1	3	3	1	1	4	
7	Kaliro - Nawa - Irundu	Gravel	3	12+000	15+000	3.00		2	2	1	1	1	3	3	3	1	1	1	1	3	3	1	1	4	
7	Kaliro - Nawa - Irundu	Gravel	4	15+000	22+000	7.00		2	2	1	1	1	3	3	3	1	1	1	1	3	3	1	1	4	
7	Kaliro - Nawa - Irundu	Gravel	5	22+000	30+000	8.00		4	4	1	1	1	1	3	3	2	2	2	2	3	3	1	1	4	
7	Kaliro - Nawa - Irundu	Gravel	6	30+000	32+000	2.00		5	5	1	1	3	4	3	4	4	4	4	4	4	3	1	1	4	
7	Kaliro - Nawa - Irundu	Gravel	7	32+000	36+000	4.00		5	5	1	1	3	3	3	3	2	2	2	2	3	2	1	1	4	
7	Kaliro - Nawa - Irundu	Gravel	8	36+000	41+000	5.00		5	5	1	1	3	3	3	3	2	2	2	2	3	2	1	1	4	
7	Kaliro - Nawa - Irundu	Gravel	9	41+000	45+000	4.00		3	3	1	1	3	3	3	3	2	2	2	2	3	2	1	1	4	
7	Kaliro - Nawa - Irundu	Gravel	10	45+000	50+200	5.20		3	3	1	1	2	2	2	2	2	1	0	0	2	1	1	1	4	

Economic Growth through Effective Road Asset Management – Consolidated Baseline Study Report

8	Kamuli - Lyingo	Gravel	1	+0	5+000	5.00	46.5	1	1	1	3	1	3	1	3	3	3	1	2	0	0	1	4
8	Kamuli - Lyingo	Gravel	2	5+000	10+000	5.00		5	5	1	1	1	1	1	1	3	3	3	2	1	5	1	4
8	Kamuli - Lyingo	Gravel	3	10+000	15+000	5.00		4	4	1	1	3	1	3	1	1	2	1	2	3	4	1	4
8	Kamuli - Lyingo	Gravel	4	20+000	25+000	5.00		4	4	1	1	3	3	3	3	2	1	2	1	3	3	1	4
8	Kamuli - Lyingo	Gravel	5	25+000	30+000	5.00		5	5	1	1	1	1	1	1	0	0	0	0	2	3	1	4
8	Kamuli - Lyingo	Gravel	6	30+000	35+000	5.00		4	4	1	1	3	3	3	3	3	2	2	3	3	3	1	4
8	Kamuli - Lyingo	Gravel	7	35+000	40+000	5.00		4	4	1	1	4	2	4	2	0	0	0	0	1	3	1	4
8	Kamuli - Lyingo	Gravel	8	40+000	46+500	6.50		2	2	1	1	1	3	1	3	3	3	1	2	2	2	1	4
DEFECTS RATING CRITERIA							D - DEGREE/SEVERITY										E - DEFECT EXTENT/OCCURRENCE/QUANTITY						
							1. Slight 2. Slight to Warning 3. Warning 4. Warning to Severe 5. Severe										% of length: 1. <5% 2. 5-10% 3. 10-25% 4. 25-50% 5 >50%						

Socioeconomic Data - Trading Centres on UNRA Network

Indicator	Trading Centre										
	1	2	3	4	5	6	7	8	9	10	
General											
1 Name of trading centre/village	Buyende	Bulopa	Irundu	Iyingo	Kidera	Nawantale	Namasagali	Namwendwa	Nawaikoke	Nakabugu	
2 GPS coordinates (utm wgs84)	517869.165816 012, 129469.704130 34	528149.20860 8952, 93836.528856 0419	535382.25472263 6, 138698.74771520 7	533982.24995 512, 143898.77464 5519	498720.070 276898, 148332.801 138607	516838.1616 284, 937731, 111705.617 173623	493199.044 5596, 024431, 120669.654 687932	529825.21850 4605	545161.298 024431, 120669.654 687932	533544.2329 25641, 88253.50130 87308	
3 Map coordinates (utm arc1960)	517787, 129771	528067, 94138	535300, 139000	533900, 144200	498638, 148634	516756, 138004	493117, 112007	529743, 101960	545079, 120971	533462, 88555	
4 Population (from the census results)	Males: 20,732, Females: 21,721 Total: 42,453	Males: 14,280, Females: 14,592 Total: 28,872	Couldn't be established	0	Males: 31,729, Females: 33,019 Total: 64,748	Males: 26,412, Females: 27,680 Total: 54,092	Males: 18,563, Female: 18,961 Total: 37,524	Males: 27,343, Females: 29,495 Total: 56,838	Males: 30,839 Females: 32,746 Total: 63,585	Couldn't be established	
5 Distance from nearest paved road (someone must drive through)	26 km	24 km	45 km	49 km	0	15.8 km	18 km	15 km	28 km	25 km	
6 Distance from district centre. <i>Name of centre: Buyende</i>	1 km	24 km	37 km	39 km	35 km	15.8 km	24 km	15 km	28 km	29 km	
7 Average travel time to district centre (by different modes of transport)											
1. light vehicle	None	None	2.5 hours	None	None	3 hours	None	30 minutes	30 minutes	30 minutes	
2. Bicycles	1 hours	3 hours	3 hours	3 hours	4 hours	2 hours	2 hours	5 hours	2 hours	1 hours	
3. Boda-boda	50 minutes	1 hours	2.5 hours	1 hours	2 hours	1 hours	30 minutes	1 hours	20 minutes	30 minutes	
4. Taxi	50 minutes	1 hours	2.5 hours	3.5 hours (to Kamuli)	1 hours	1.5 hours	30 minutes	2 hours	50 minutes	30 minutes	
5. Other (specify)	0	0	0	0	2 hours	5 hours	0	7 hours	0	3 hours	
8 Name of the road serving the trading centre/village	Kamuli road	Cabula road	Irundu - Kaliro - Ilanga road	Iyingo - Kamuli road	Bukungu - Kamuli road	Nawantale road	Namasagali - Budumbula road	Namwendwa - Kamuli road	Irundu road	Kiyunga road	
9 How many days of the year is the road closed due to rains?	3 months	3 seasons	0	Twice (April and October)	twice (April and August)	2 months	2 seasons	8 days	Once (June - July)	8 days	
Availability and cost of transport											
10 No. of private transport operators serving the trading centre/village											
10.1 Light vehicle (Small vehicles park operators)	None	None	None	0	None	0	None	50	None (cars	8	

Economic Growth through Effective Road Asset Management – Consolidated Baseline Study Report

Indicator	Trading Centre										
	1	2	3	4	5	6	7	8	9	10	
									pass through from Kaliro to Irundu)		
10.2	Bus/combi (taxi park operators)	4	3	20	0	15	0	1	4 bus, 10 taxis	6	1 bus, 2 taxis
10.3	Motorcycle (boda-boda) (different boda-boda parks)	60	30	200	20	80	30	80	250	80	300
10.4	Bicycles (bicycle Operators)	6	None	15	None	10	0	None	15	None	20
10.5	Freight transport /trucks (lorry / trucks parks operators)	20	3	10	None	7	1 Isuzu, 5 Isuzu Canter, 5 Fuso	20 Tatas	140	5	1 Dyna, 3 Fuso
11	No. of available trips to district centre per day (on a normal day)										
11.1	Light vehicle (Small vehicles park operators / Administrative office)	None	None	None	None	None	0	None	5	None	3 trips
11.2	Bus/combi (taxi park / administrative office)	1	2	2	1	3	0	3	4	1	1 trip bus, 2 trips taxi
11.3	Motorcycle (boda-boda) (different boda-boda parks)	4	3	4	3	3	2	6	3	3	9
11.4	Freight transport /trucks (lorry / trucks parks)	2	1	None	None	1	1	2	1	1	7
12	No. of available trips to district centre per day (on a market day)										
12.1	Light vehicle (small vehicles park)	None	None	None	None	None	3	None	5	None	20
12.2	Bus/combi (taxi park)	6	2 - Fridays	2	1	3	0	1	6	3	1
12.3	Freight transport /trucks (lorry / trucks parks)	2	1	1	0	1	1	2	2	1	14
	Motorcycle (boda-boda) (different boda-boda parks)	0	0	0	4	5	0	0	0	6	0
13	Fares on public transport to the district centre (passenger-km) in Uganda shillings										
13.1	Light vehicle (small vehicles park)	None	None	None	None	None	0	None	2000	2500	3000
13.2	Bus/combi (taxi park)	4000	3000	5000	5000 (To Kamuli)	4000 - 5000	0	4000	3000	3000	4000
13.3	Motorcycle (boda-boda) (different boda-boda parks)	4000	5000	8000	15000 (To Buyende)	8000 - 10000	6000	5000	3000	5000	2000
13.4	Bicycles (bicycle Operators)	0	0	3000	0	0	0	0	0	0	0
14	Cost of freight transport to the district centre (ton-km)										
14.1	Truck (.... tons)	60000	4000 for each	0	0	200000	400000	100000 for	50000	5000	50000

Economic Growth through Effective Road Asset Management – Consolidated Baseline Study Report

Indicator	Trading Centre										
	1	2	3	4	5	6	7	8	9	10	
		luggage (Market day)			(From Kamuli)		transporting Sugarcane mainly				
14.2	Light vehicle (...tons)	0	None	0	0	None	0	None	40000	None	40000
14.3	IMTs /motorcycle (...tons)	0	5000	20000	20000	12000	6000	None	4000	6000	4000
	Bicycles (bicycle Operators)	0	0	1000	0	0	0	0	0	0	0
Price of goods in the trading centre/village in Uganda shillings											
15	Prices of three items exported from the village (e.g. potatoes, rice, maize, charcoal) (To be established from the sub-county extension staff)										
15.1	Item 1 (name)- state units:	Maize 1200 per kg	Maize 500 per kg	Maize 3 sacks	Maize 20 sacks	Maize 100 sacks (100 kg) 800000	Cattle 1.5 - 2 million, goats (80000 - 150,000)	Maize 500 per kg	Maize 700 per kg	Maize 3 sacks	Maize 1000 per kg
15.2	Item 2 (name)- state units:	Millet 1700 per kg	Coffee 2000 per kg	Cotton 10 kg	Sweet potatoes 7 sacks	Cotton 2000 kg (200000 kg) 1500 per kg	Coffee 2000 per kg	Ground nuts 3500 per kg	Coffee 2000 per kg	Cassava 1 Truck	Coffee 2000 per kg
15.3	Item 3 (name)- state units:	Rice 2000 per kg	Sugarcane Tata lorry 100,000	Cassava 70 kg	Cassava 5 sacks	Cassava 100 sacks (100 kg) 800000	Sugarcane 1 ton 125,000	Beans 23500 per kg	Rice 1600 per kg	Sweet potatoes 1 Truck	Sugarcane 1 acre 1000,000
16	Prices of three items imported into the village (e.g. petrol, soap, batteries, seed, fertiliser) (To be established from the sub-county extension staff)										
16.1	Item 1 (name)- state units:	Sugar 2400 per kg	Sugar 4000 per kg	Soap 5 boxes	Soap 4 boxes	Soap 10 boxes	Sugar 4000 per kg	Sugar 4000 per kg	Salt 1500 per kg	Sugar 3 sacks	Petrol 3000 per litre
16.2	Item 2 (name)- state units:	Cooking oil 5000 per litre	Cooking oil 4000 per litre	Cooking oil 20 Jerrycans (5 litres each)	Cooking oil 3 Jerrycans (5 litres each)	Wheat flour 20 cartons	Salt 600 per 0.5 kg	Soap 4000 per bar	Petrol 4200 per litre	Cooking oil 10 Jerrycans (20 litres each)	Soap 2000 per bar
16.3	Item 3 (name)- state units:	Salt 800 per kg	Salt 1400 per kg	Sugar 5 sacks (50 kg each)	Sugar 5 sacks (50 kg each)	Sugar 10 sacks (50 kg each)	Soap 3500 per bar	Salt 1200 per kg	Soap 3000 per bar	Soda 10 crates	Sugar 4000 per kg
Education- nearest school - Name of school: (to be collected from the nearest school)		Buyende Primary School	Wansanle Primary	Irundu Township Primary School	Iyingo Primary School	Step by Step Primary	Bwase Primary	Namasagali College staff	Kidiki Mixed Primary	Nawaikoike Mixed	Nakabugu Primary

Indicator	Trading Centre										
	1	2	3	4	5	6	7	8	9	10	
		School Bulopa			School	School	children's Primary School	School	Primary School	School	
17	Average time to reach the nearest school from the trading centre by different modes of transport (indicate the different modes of transport).										
	1. Walking	5 minutes	30 -45 minutes	1 hour	30 minutes	1 - 2 hour	20 minutes	10 minutes	20 minutes	1 hour	10 minutes
	2. Boda-boda	2 minutes	5 -6 minutes	15 minutes	0	0	5 minutes	3 minutes	5 minutes	30 minutes	5 minutes
	3. Bicycle	3 minutes	10 -15 minutes	30 minutes	15 - 20 minutes	0	10 minutes	6 minutes	10 minutes	40 minutes	7 minutes
	4. Others (specify)	0	0	0	0	0	0	0	0	0	0
18	No of pupils enrolled at the nearest school (gender disaggregated) from the school	Total (909) Males (454) Female (455)	Total (750) Males (450) Female (300)	Total (1155) Males (569) Female (586)	Total (710) Males (300) Female (410)	Total (250) Males (70) Female (180)	Total (250) Males (135) Female (115)	Total (891) Males (435) Female (456)	Total (1005) Males (526) Female (479)	Total (990) Males (425) Female (565)	Total (1232) Males (630) Female (602)
19	Average monthly pupil attendance rate for past year (gender disaggregated)	Total (717) Males (347) Female (370)	Total (450) Males (200) Female (250)	Total (900) Males (380) Female (520)	Total (600) Males (120) Female (480)	Total (220) Males (100) Female (110)	Total (198) Males (100) Female (98)	Total (690) Males (340) Female (350)	Total (1011) Males (482) Female (529)	Total (730) Males (380) Female (350)	Total (950) Males (600) Female (350) for 2015
20	No of staff employed at the school (gender disaggregated)	Total (17) Males (13) Female (4)	Total (11) Males (5) Female (6)	Total (13) Males (10) Female (3)	Total (9) Males (7) Female (2)	Total (12) Males (7) Female (5)	Total (6) Males (5) Female (1)	Total (11) Males (7) Female (4)	Total (19) Males (7) Female (12)	Total (15) Males (12) Female (3)	Total (20) Males (15) Female (5)
21	Average monthly staff attendance rate for the past year (gender disaggregated)	Total (15) Males (12) Female (3)	Total (11) Males (5) Female (6)	Total (11) Males (9) Female (2)	Total (6) Males (4) Female (2)	Total (8) Males (5) Female (3)	Total (5) Males (4) Female (1) 80%	Total (9) Males (5) Female (4)	Total (16) Males (6) Female (10)	Total (15) Males (12) Female (3)	Total (16) Males (12) Female (4) 80%
Road safety (to be established from the DEOs, CDOs, SAsSs and the traffic police officers)											
22	Is road safety awareness taught to children at the school?	Yes	Yes	Yes (Literacy 1 - Lower classes; Social studies - Upper classes)	Yes (Social studies and school assemblies)	Yes (Literacy 1 - Lower classes; Social studies - Upper classes)	no	Yes	no	Yes (Social Studies subject)	yes, community policy drivers
23	Are road safety awareness presentations made to adults in the village?	Yes	Yes	Yes (once a month)	Yes (once a month)	Yes (twice a month)	no	Yes	no	Yes (Twice a month)	yes, traffic officers and community

Indicator	Trading Centre										
	1	2	3	4	5	6	7	8	9	10	
											liaison offices
24	No. of accidents on the road serving the trading centre /village for past year	0	20 accidents	28 accidents	10 accidents	35 -40 accidents	30 accidents	20 accidents	no information	20 accidents	15 cases, 5 fatal
Health - nearest health centre/clinic- Name of health centre/clinic: (to be established from the Health facility)		Buyende III	Bulopa III	Irundu III	Irundu III	Kidera IV	Bawoli III	Namasagali III	Namawade IV	Nawaikoke III	Kiyunuga III
25	Average time to reach the nearest health centre from the trading centre by different modes of transport	0	0	0	0	0	0	0	0		0
	1. light vehicle	None	3 minutes	0	0	0	0	None	5 minutes	0	15 minutes
	2. Bicycles	15 minutes	5 minutes	1.5 hours	1.5 hours	30 minutes	30 minutes	10 minutes	15 minutes	1 - 2 hours	30 minutes
	3. Boda-boda	7 minutes	3 minutes	45 minutes	45 - 60 minutes	15 minutes	10 minutes	5 minutes	10 minutes	30 - 45 minutes	20 minutes
	4. Taxi	None	None	0	0	0	0	None	5 minutes	0	0
	5. Other (specify) Walking	0	0	30 minutes	1 hours	1 hour	2 hours	0	30 minutes	1 hour	1 hours
26	Average no of health workers at health centre each month for the past year (gender disaggregated)	Total (15) Males (6) Female (9)	Total (15) Males (8) Female (7)	Total (17) Males (6) Female (11)	Total (17) Males (6) Female (11)	Total (40) Males (24) Female (16)	Total (10) Males (2) Female (8)	Total (12) Males (5) Female (8)	Total (28) Males (15) Female (13)	Total (16) Males (11) Female (5)	Total (42) Males (19) Female (23)
27	Average no of patients treated each month for the past year (gender disaggregated)	Total (1200) Males (400) Female (800)	Total (3000) Males (800) Female (2200)	Total (1500) Males (600) Female (900)	Total (1500) Males (600) Female (900)	Total (2000) Males (700) Female (1300)	Total (2000) Males (800) Female (1200)	Total (8000) Males (3000) Female (5000)	Total (2000) Males (200) Female (1800)	Total (1000) Males (200) Female (300) Children (500) below age (5)	(OPD, in-patient) Total (150, 90) Males (70, 30) Female (80, 60)
28	Is there an ambulance service available from the health centre to the district hospital?	No	No	No - It is very expensive to hire one	No - It is very expensive to hire one and use bodas	yes, but shared with the whole district	no	No	Doctor's vehicle (Prado), bodas	No - they use bodas	Double cabins, pickups
Agriculture											
29	What is the average no of visits per month by an extension worker to the village?	8 times	4 times in 9 months	None	None	Twice in a year	0	4 times	0	2 times in a week	0
30	Price of main cash crop produce in the district centre (per kg)	Maize 1200 per kg	Coffee 2000 per kg	Maize 900 per kg	Sweet potatoes 60000 per sack	Maize 700 per kg	Coffee 2000 per kg	Maize 500 per kg	Sweet potatoes 250 per kg	Cassava 600 per kg 600 per kg	Coffee 2200 per kg
31	Price of main cash crop produce in the village/trading centre (per kg)	Maize 1200 per kg	Maize 500 per kg	Maize 800 per kg	Sweet potatoes	Maize 700 per kg	Cassava 550 per kg	Maize 200 per kg	Rice 1200 per kg	Sweet potatoes	Coffee 2000 per kg

Indicator	Trading Centre										
	1	2	3	4	5	6	7	8	9	10	
				60000 per sack						100,000 per sack	
32	Farm-gate price of main cash crop produce in the village (per kg)	Maize 500 per kg	Maize 300 per kg	Maize 800 per kg	Sweet potatoes 20000 per sack	Maize 800 per kg	Maize 750 per kg	Maize 200 per kg	Maize 700 per kg	Sweet potatoes 500 per kg	Maize 700 per kg
Economic activities - non-farm											
33	Factories, local industries /cottage industries in the village/trading centre (type & no.) create a table for type and number	maize mill (5) Milk cooler (1)	maize mill (4) Rice mill (3) Coffee mill (2)	Shops (10) Repair shops (7) Welding (2) Carpentry (4) maize mill (3) Rice mill (2)	0	Welding (8) Carpentry (10) Ground nut mill (2)	Welding (2) Maize mill (1) Carpentry (2) Bakery (1)	maize mill (4) Rice mill (1) Honey (5) Juice (1)	Maize mill (7) Coffee mill (1) Carpentry (17)	None	Ginning mills (4) Carpentry (2) Coffee factory (1)
34	No. of shops / kiosks in the village/trading centre	45 shops	220 shops	100 shops	12	120 shops	40 shops, 45 kiosks	70 shops	370 shops	50 shops	36
Price of goods in the district centre (same items as priced in the village/trading centre)											
35	Prices of the three items exported from the village	0	0	0	0	0	0	0	0	0	0
35.1	Item 1 (name)- state units:	Maize 1200 per kg	Maize 500 per kg	Maize 80000 per sack 70kg	Maize (7 sacks) 80000 per sack	Maize (100 sacks) 800 per kg	Sugar cane (1 tonne) 125000 per ton	Maize 500 per kg	Maize 700 per kg	Maize 60,000 per sack	Coffee 2000 per kg
35.2	Item 2 (name)- state units:	Millet 1700 per kg	Coffee 2000 per kg	Cassava 42,900 per sack 70kg	Cassava (5 sacks) 50,000 per sack	Cassava (100 sacks) 800 per kg	Coffee 2000 per kg	Groundnuts 3500 per kg	Coffee 2000 per kg	Cassava 600,000 per truck	Sugarcane 1,000,000 per acre
35.3	Item 3 (name)- state units:	Rice 2000 per kg	Sugar cane (Tata lorry) 100000	Cotton 52,500 per sack 10kg	Sweet potatoes (7 sacks) 60,000 per sack	Cotton (2000 sacks) 1500 per kg	Cattle 1.5 - 2 million, goats (80,000 - 150,000)	Beans 2500 per kg	Beans 3000 per kg	Sweet potatoes 1,000,000 per truck	Maize 1000 per kg
36	Prices of the three items imported into the village										
36.1	Item 1 (name)- state units:	Sugar 4000 per kg	Sugar 4000 per kg	170,000 per sack (50 kg)	Sugar (5 sacks) 173,000 per sack (50 kg)	Sugar 180,000 per sack (50 kg)	Soap 3500 per bar	Sugar 4000 per kg	Soap 4000 per bar	Sugar 170,000 per sack (50 kg)	Soap 2000 per bar
36.2	Item 2 (name)- state units:	Salt 800 per kg	Cooking oil 4000 per litre	83,000 per Jerrycan (20 kg)	Cooking oil (3 jerry cans) 88,000 per Jerrycan (20 kg)	Wheat flour 49,500 per carton	Sugar 4000 per kg	Soap 1200 per kg	Sugar 4000 per litre	Cooking oil 83,000 per Jerrycan (20 kg)	Petrol 3000 per litre

	Indicator	Trading Centre									
		1	2	3	4	5	6	7	8	9	10
36.3	Item 3 (name)- state units:	Cooking oil 5000 per litre	Salt 1400 per kg	Soap 58000 per box	Soap (4 boxes) 60000 per box	Soap 59000 per box	Salt 600 per 0.5 kg	Salt 4000 per kg	Salt 1500 per kg	Soda	Soap 600 per 0.5 kg

Annex C. Baseline Data – Kamuli (Uganda)

Self-Assessment Questionnaire Scores - Kamuli

Item Assessed	Agency Score	Advisory Team Score	Mar 17 Joint Review
Stakeholder consultation	3	1	3
Council engagement	3	2	3
AM policy development	2	0	2
Level of service - existence	1	0	0
Level of service - use	1	0	0
Emergency response plan	1	1	1
Staff roles and responsibilities	2	2	0
Staff training and capacity building	0	1	0
Staff salaries	1	1	1
Provision of road maintenance funding	2	1	2
Budget funding against perceived need	1	1	1
Asset valuation	1	0	0
Budget funding - asset value	1	0	0
Financial forecasting	0	1	0
Accounting system	3	2	2
AM system	0	0	0
Maintenance intervention levels	1	0	0
Maintenance plans - existence	4	1	3
Maintenance plans - methods used	2	1	1
Maintenance backlog	1	0	0
Traffic forecasting	0	0	0
Capital expenditure - basis for	3	1	1
Road referencing system - existence	0	1	0
Road inventory - existence	2	1	2
Road inventory data	1	1	3
Road condition assessment	2	1	2
Asset utilisation	1	0	1
Service delivery mechanisms	4	2	3
Maintenance planning	4	1	0
Auditing	4	1	0

Assessment of RAM Performance Indicators - Kamuli

Weighting Ranking	Building Block	Max. Possible Score	Agency Score	Advisory Team Score	Mar 17 Joint Review	Weighting
1	External	4	3.0	1.5	3.0	0.24
2	Institutional	4	1.1	0.7	0.6	0.20
3	Financial	4	1.3	0.8	0.8	0.17
4	Managerial	4	1.6	0.4	0.7	0.15
5	Technical	4	1.2	0.8	1.6	0.13
6	Operational	4	4.0	1.3	1.0	0.11
Rural Road Asset Management Assessment Score					1.4	1.00
Rural Road Asset Management Rating					Core	
Rural Road Preservation Index (RAPI)					0.35	

(Scale: 0 - 1)

Road Condition Data – Kamuli

Road Agency Name:		Kamuli District Council				District			Kamuli																			
GEM Road No	Road No	Road Name	Road Type	Segment No.	Start Km	End Km	Length (km)	Road Length (km)	Gravel Loss		Usable Width		Erosion C-Way		Erosion-S/Drains		Potholes		Corrugations		Rutting		Impassability					
									D	E	D	E	D	E	D	E	D	E	D	E	D	E	D	E				
1		Bulunda - Kakindu	Gravel	1	+0	5+000	5.00	13.2	3	3	1	1	2	2	2	2	2	2	1	1	1	1	1	4				
1		Bulunda - Kakindu	Gravel	2	5+000	10+000	5.00		3	3	1	1	2	2	2	2	2	2	1	1	1	1	1	4				
1		Bulunda - Kakindu	Earth	3	10+000	13+200	3.20		3	3	1	1	2	2	2	2	2	2	1	1	1	1	1	4				
2		Balowoli - Namasagali	Gravel	1	+0	5+000	5.00	17.6	3	3	1	1	2	2	2	2	2	2	1	1	1	1	1	4				
2		Balowoli - Namasagali	Gravel	2	5+000	10+000	5.00		3	3	1	1	2	2	2	2	2	2	1	1	1	1	1	4				
2		Balowoli - Namasagali	Gravel	3	10+000	15+000	5.00		3	3	1	1	2	2	2	2	2	2	1	1	1	1	1	4				
2		Balowoli - Namasagali	Gravel	4	15+000	17+600	2.60	17.6	3	3	1	1	2	2	2	2	2	2	1	1	1	1	1	4				
3		Balowoli - Kyamatende	Gravel	1	+0	5+000	5.00		3	3	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
3		Balowoli - Kyamatende	Gravel	2	5+000	10+000	5.00		3	3	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
3		Balowoli - Kyamatende	Gravel	3	10+000	15+000	5.00	22.7	3	3	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
3		Balowoli - Kyamatende	Earth	4	15+000	17+600	2.60		3	3	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
4		Nawantale - Kibuye	Earth	1	+0	5+000	5.00		2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
4		Nawantale - Kibuye	Earth	2	5+000	10+000	5.00	22.7	2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
4		Nawantale - Kibuye	Gravel	3	10+000	15+000	5.00		2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
4		Nawantale - Kibuye	Gravel	4	15+000	20+000	5.00		2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
4		Nawantale - Kibuye	Gravel	5	20+000	22+700	2.70	15.0	2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
5		Kasambara - Bugulumbya	Gravel	1	+0	5+000	5.00		2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
5		Kasambara - Bugulumbya	Gravel	2	5+000	10+000	5.00		2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
5		Kasambara - Bugulumbya	Gravel	3	10+000	15+000	5.00	8.7	2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
6		Kasambira - Wankole	Gravel	1	+0	5+000	5.00		2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
6		Kasambira - Wankole	Gravel	2	5+000	8+700	3.70		2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
7		Naminage - Bulange	Gravel	1	+0	5+000	5.00	10.0	2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
7		Naminage - Bulange	Gravel	2	5+000	10+000	5.00		2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
8		Namaganda - Bugonda	Gravel	1	+0	5+000	5.00	10.0	2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
8		Namaganda - Bugonda	Gravel	2	5+000	10+000	5.00		2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
9		Namwendwa - Ndalike	Gravel	1	+0	5+000	5.00	8.5	2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
9		Namwendwa - Ndalike	Gravel	2	5+000	8+500	3.50		2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
10		Namwedwa - Kyeeya	Gravel	1	+0	5+000	5.00	10.0	2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				
10		Namwedwa - Kyeeya	Gravel	2	5+000	10+000	5.00		2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	4				

DEFECTS RATING CRITERIA

D - DEGREE/SEVERITY

1. Slight 2. Slight to Warning 3. Warning 4. Warning to Severe 5. Severe

E - DEFECT EXTENT/OCCURRENCE/QUANTITY

% of length: 1. <5% 2. 5-10% 3. 10-25% 4. 25-50% 5 >50%

Socioeconomic Data – Trading Centres on Kamuli District Network

Indicator	Units	Trading centre/village								
		1	2	3	4	5	6	7	8	9
General										
Name of trading centre/village		Kiwungu	Namaira	Nabulezi	Kagumba	Wandegeya	Nawandyo	Namaganda	Kiyunga	Ndalike
GPS coordinates		E0506387, N0101369, H1076	E0508291, N0113218, H1122	E0505068, N017557, H1090m	E0506106, N0121286, H1074m	E0521887, N0088183, H1120m	E1519899, N0085210, H1089m	E1524434, N0097937, H1124m	E0507261, N0087269, H1089m	E0529561, N0106526, H1088m
Map coordinates										
Population	No.	6147	3855	7150	7718	5660	7102	3761	7103	8813
Distance from nearest paved road	Km	6	14	19	27	5	8	17	11	24
Distance from district centre. <i>Name of centre: Kamuli</i>	Km	9	14	19	27	17	20	19	24	24
Average travel time to district centre (by different modes of transport) <i>Boda</i>	Min	30	30	60	60	40	45	45	45	50
Name of the road serving the trading centre/village		Bulunda-Kakindu	Balawoli-Namasagali	Balawoli-kymatende	Nawantale-Kibuye	Kasambira-Bugulumbya	Kasambira-Wankole	Naminage-Bulange	Namaganda-Bugondha	Namwendwa-Ndalike
How many days of the year is the road closed due to rains?		NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL
Availability and cost of transport										
No. of private transport operators serving the trading centre/village										
Light vehicle	No.	0	0	1	1	0	0	0	0	2
Bus/combi	No.	0	0	0	0	0	0	0	1	1
Motorcycle (boda-boda)	No.	70	50	30	40	40	60	70	80	150
Freight transport /trucks (10 tonnage)	No.	5	10	3	6	11	5	4	3	6
No. of available trips to district centre per day (on a normal day)										
Light vehicle	No.	0	0	2	2	0	0	0	0	4
Motorcycle (boda-boda)	No.	210	150	60	80	120	180	280	320	450
Bus/Taxi		0	0	0	0	0	0	0	0	2
Freight transport /trucks (10 Tonnage)	No.	5	10	3	6	11	5	4	3	6
No. of available trips to district centre per day (on a market day)										
Light vehicle	No.	0	0	2	2	0	0	0	0	4
bus/Taxi	No.	0	0	0	0	0	0	0	0	2
Freight transport /trucks	No.	5	10	3	6	11	5	4	3	6
Fares on public transport to the district centre (passenger-km)										

Indicator	Units	Trading centre/village								
		1	2	3	4	5	6	7	8	9
Light vehicle	UGX	0	0	150	185	0	0	0	208	83
Bus/combi	UGX	0	0	0	0	0	0	0	0	62
Motorcycle (boda-boda)	UGX	166	179	150	259	588	500	131	208	83
Cost of freight transport to the district centre (ton-km)										
Truck (10 tons)	UGX	1111	1785	1250	741	1176	2000	789	2083	416
Light vehicle (...tons) Taxi fare per passenger	UGX		1785	1250	556				2916	416
IMTs /motorcycle (...tons) one person per freight	UGX	1667	3571	2500	2222	2941	2500	1315	2500	1041
Prices of goods in the trading centre										
Prices of three items exported from the village (e.g. potatoes, rice, maize, charcoal)		600	600	700	700	600	600	600	600	700
<i>Coffee (wet red bean coffee per Kg)</i>	UGX	1,000	1,000	1,000	1,200	1,200	1,200	1,000	1,000	1,000
<i>Maize (maize grains per Kg)</i>	UGX	1,100	1,000	1,000	1,100	1,200	1,200	1,100	1,000	1,000
<i>Rice (processed rice per Kg)</i>	UGX	2,500	2,400	2,400	2,400	2,400	2,600	2,400	2,500	2,200
Prices of three items imported into the village (e.g. petrol, soap, batteries, seed, fertiliser)										
Salt (A sachet)	UGX	600	600	700	700	600	600	600	600	700
<i>Petrol (litre)</i>	UGX	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
<i>Soap (1kg White Star Soap)</i>	UGX	3,800	3,800	4,000	4,000	4,000	3,800	3,800	3,800	3,700
<i>Sugar (1kg unpacked)</i>	UGX	4,600	4,500	4,400	4,600	4,000	4,000	4,400	4,000	4,400
Education - nearest school - Name of school:		Kiwungu	Namaira	Nabulezi	Kagumba	Wandegeya	Nawandyo	Namaganda	Kiyunga	Ndalike
Average time to reach the nearest school from the trading centre by different modes of transport (by gender and age)	M (Min)	15	20	5	2	5	15	5	15	15
	F (Min)	20	25	5	2	5	20	5	20	20
No of pupils enrolled at the nearest school (gender disaggregated)	M	279	326	382	316	109	388	298	394	455
	F	234	332	456	313	82	383	269	459	438
Average monthly pupil attendance rate for past year (gender disaggregated)	M	313		399	300	19	401	268	403	487
	F	298		433	338	25	423	247	450	427
No of staff employed at the school (gender disaggregated)	M	5	9	4	9	4	6	4	5	9
	F	5	1	2	1	4	3	8	6	6
Average monthly staff attendance rate for the past year (gender disaggregated)	M	60%	70%	50%	70%	75%	60%	70%	80%	70%
	F	70%	80%	50%	55%	60%	70%	55%	65%	58%
Road Safety										
Is road safety awareness taught to children at the school?		No	No	No	No	No	No	No	No	No
Are road safety awareness presentations made to adults in the village?		No	No	No	No	No	No	No	No	No

Indicator	Units	Trading centre/village								
		1	2	3	4	5	6	7	8	9
No. of accidents on the road serving the trading centre /village for past year	No.	0	0	4	0	5	3	0	6	0
Health - nearest health centre/clinic - name:		Butansi HCIII	Namaira HCII	Nabulezi HCII	Kagumba HCII	Bugulumbya HCIII	Nawandyo HCII	Kinawampere HCII	Kiyunga HCII	Kinu HCII
Average time to reach the nearest health centre from the trading centre by different modes of transport (by gender and age)	M (Min)	20	25	4	4	50	7	15	30	35
	F (Min)	25	30	5	5	60	8	20	40	40
Average no of health workers at clinic each month for the past year (gender disaggregated)	M	7	1	0	1	11	0	2	2	4
	F	12	2	2	4	6	3	3	3	1
Average no. of patients treated each month for the past year (gender disaggregated)	M	1941	300	119	216	1078	542	482	287	304
	F	1209	156	72	138	743	459	226	311	756
Is there an ambulance service available from the clinic to the district hospital?		No	No	No	No	No	No	No	No	No
Agriculture										
What is the average no. of visits per mth by an extension worker to the village?	No.	8	8	8	8	6	4	6	4	4
Price of main cash crop produce in the district centre (per kg)	UGX	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300
Price of main cash crop produce in the village/trading centre (per kg)	UGX	1,200	1,100	1,200	1,200	1,200	1,200	1,000	1,100	1,100
Farm-gate price of main cash crop produce in the village (per kg)	UGX	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Economic activities - non-farm										
Factories, local industries /cottage industries in the village/trading centre (type & no.)	No.	4	1	2	3	2	1	4	4	3
No. of shops / kiosks in the village/trading centre	No.	33	40	12	5	20	20	36	75	39
Price of goods in the district centre (same items as priced in the village/trading centre)										
Prices of 3 items exported from the village										
Coffee (wet red bean coffee per Kg)	UGX	1300								
Maize (maize grains per Kg)	UGX	1300								
Rice (processed per Kg)	UGX	2800								
Prices of 3 items imported into the village										
Salt (A sachet)	UGX	600								
Petrol (litre)	UGX	3400								
Soap (1kg White Star Soap)	UGX	3600								
Sugar (1kg unpacked)	UGX	4000								

Annex D. Baseline Data - Tonkolili District (Sierra Leone)

Self-Assessment Questionnaire Scores - Tonkolili

Building Block	#	Item Assessed	Agency Score	Advisory Team Score	Mar 17 Joint Review Score
External	1.1	Stakeholder consultation	3	1	3
	1.2	Council engagement	1	2	3
Institutional	2.1	AM policy development	0	0	0
	2.2	Level of service - in existence	3	0	0
	2.3	Level of service - in use	3	0	1
	2.4	Emergency response plan	2	1	2
	2.5	Staff roles and responsibilities	3	2	1
	2.6	Staff training and capacity building	2	1	0
	2.7	Staff salaries	1	2	1
Financial	3.1	Provision of road maintenance funding	0	1	0
	3.2	Budget funding against perceived need	4	0	1
	3.3	Asset valuation	1	0	0
	3.4	Budget funding - asset value	2	0	1
	3.5	Financial forecasting	1	1	1
	3.6	Accounting system	1	2	1
Managerial	4.1	AM system	1	0	0
	4.2	Maintenance intervention levels	0	0	0
	4.3	Maintenance plans - existence	3	1	1
	4.4	Maintenance plans - methods used	1	1	1
	4.5	Maintenance backlog	1	0	0
	4.6	Traffic forecasting	0	0	0
	4.7	Capital expenditure - basis for	0	1	1
Technical	5.1	Road referencing system - existence	0	1	1
	5.2	Road inventory - existence	0	1	2
	5.3	Road inventory data	0	1	1
	5.4	Road condition assessment	0	0	0
	5.5	Asset utilisation	0	0	0
Operational	6.1	Service delivery mechanisms	3	2	3
	6.2	Maintenance planning	4	1	0
	6.3	Auditing	3	0	0

Assessment of RAM Performance Indicators - Tonkolili

Weighting Ranking	Building Block	Max. Possible Score	Agency Score	Advisory Team Score	Mar 17 Joint Review Score	Weighting
1	External	4	2.0	1.5	3.0	0.24
2	Institutional	4	2.0	0.9	0.7	0.20
3	Financial	4	1.5	0.7	0.7	0.17
4	Managerial	4	0.9	0.4	0.4	0.15
5	Technical	4	0.0	0.6	0.8	0.13
6	Operational	4	3.3	1.0	1.0	0.11
RAM Assessment Score					1.2	
RAM Rating					Core	
Rural Road Preservation Index (RRPI)					0.31	
						(Scale: 0 - 1)

Road Condition Data – Tonkolili District

Road Agency Name:	Tonkolili District Council							District		Tonkolili																	
GEM Road No	Road No	Road Name	Road Type	Segment No.	Start Km	End Km	Length (km)	Road Length (km)	Gravel Loss	Usable Width	Erosion C-Way	Erosion S/Drains	Potholes	Corrugations	Rutting	Impassability											
									D	E	D	E	D	E	D	E	D	E	D	E	D	E	D	E	D	E	
1	F1201	Massingbi - Mayolla	Gravel	1	+0	5+000	5.0	9.4	2	4	1	2	1	2	1	2	1	2	1	2	1	1	1	1	2	1	4
1	F1201	Massingbi - Mayolla	Gravel	2	5+000	9+400	4.4		4	5	1	2	3	4	5	5	2	3	1	2	1	2	1	2	1	4	
2	F1202	Makoni - Manasie	Gravel	1	+0	5+200	5.2	5.2	1	1	1	2	1	2	1	2	1	2	1	2	1	1	1	1	2	1	4
3a	F1203A	Makoni Line - Mamansu Sanka	Gravel	1	+0	5+000	5.0	15.8	3	4	1	2	4	5	5	5	3	4	2	3	3	4	1	4			
3a	F1203A	Makoni Line - Mamansu Sanka	Gravel	2	5+000	10+000	5.0		3	4	1	2	4	5	5	5	3	4	2	3	3	4	1	4			
3a	F1203A	Makoni Line - Mamansu Sanka	Gravel	3	10+000	15+800	5.8		4	5	1	2	4	5	5	5	4	5	2	3	4	5	1	4			
3b	F1203B	Masimbi - MS Junction	Gravel	1	+0	5+000	5.0	11.4	5	5	3	4	5	5	5	5	5	5	3	4	5	5	1	4			
3b	F1203B	Masimbi - MS Junction	Gravel	2	5+000	11+400	6.4		4	5	3	4	5	5	5	5	5	5	3	4	5	5	1	4			
4	F1204	Makali - Makong	Earth	1	+0	5+000	5.0	9.5	5	5	3	4	5	5	5	5	5	5	5	5	5	5	5	1	4		
4	F1204	Makali - Makong	Earth	2	5+000	9+500	4.5		5	5	3	4	5	5	5	5	5	5	5	5	5	5	5	1	4		
5	F1205	Matotoka - Mangebana - Mathamp	Gravel	1	+0	5+000	5.0	20.8	4	3	1	2	2	3	5	5	2	3	2	3	2	3	1	4			
5	F1205	Matotoka - Mangebana - Mathamp	Gravel	2	5+000	10+000	5.0		4	3	1	2	2	3	5	5	2	3	2	3	2	3	1	4			
5	F1205	Matotoka - Mangebana - Mathamp	Earth	3	10+000	15+000	5.0		4	4	1	2	4	4	5	5	5	5	2	3	2	3	1	4			
5	F1205	Matotoka - Mangebana - Mathamp	Earth	4	15+000	20+800	5.8		4	5	1	2	4	5	1	5	5	5	3	4	3	3	1	4			
6	F1206	Matotoka - Mathonkara - Makelleh	Gravel	1	+0	5+000	5.0	24.0	1	2	1	2	1	2	1	2	1	2	3	4	3	3	1	4			
6	F1206	Matotoka - Mathonkara - Makelleh	Gravel	2	5+000	10+000	5.0		3	3	1	2	3	4	5	5	3	4	4	5	3	3	1	4			
6	F1206	Matotoka - Mathonkara - Makelleh	Gravel	3	10+000	15+000	5.0		3	4	3	4	3	4	5	5	4	5	4	5	4	5	1	4			
6	F1206	Matotoka - Mathonkara - Makelleh	Earth	4	15+000	20+000	5.0		4	5	3	4	3	4	5	5	5	5	4	5	4	5	1	4			
6	F1206	Matotoka - Mathonkara - Makelleh	Earth	5	20+000	24+000	4.0		4	5	2	2	4	4	5	5	5	5	4	5	4	5	1	4			
7	F1207	Mayepoh - Maraka - Rapoli	Gravel	1	+0	5+000	5.0	25.0	2	3	2	2	2	3	3	4	2	2	2	3	2	2	1	4			
7	F1207	Mayepoh - Maraka - Rapoli	Gravel	2	5+000	10+000	5.0		2	3	2	2	2	3	4	5	2	3	2	3	2	2	1	4			
7	F1207	Mayepoh - Maraka - Rapoli	Gravel	3	10+000	15+000	5.0		3	4	2	2	2	3	5	5	4	4	3	4	4	5	1	4			
7	F1207	Mayepoh - Maraka - Rapoli	Earth	4	15+000	20+000	5.0		3	4	3	4	4	5	5	5	5	5	3	4	4	5	1	4			
7	F1207	Mayepoh - Maraka - Rapoli	Earth	5	20+000	25+000	5.0		4	5	3	4	4	5	5	5	5	5	3	4	4	5	1	4			
8	F1208	Magbolu Ferry - Yele	Earth	1	+0	5+000	5.0	26.7	4	5	4	5	5	5	5	5	5	5	5	5	5	5	1	4			
8	F1208	Magbolu Ferry - Yele	Earth	2	5+000	10+000	5.0		4	5	4	5	5	5	5	5	5	5	5	5	5	5	1	4			
8	F1208	Magbolu Ferry - Yele	Gravel	3	10+000	15+000	5.0		4	5	2	2	3	4	5	5	4	5	2	3	5	5	1	4			
8	F1208	Magbolu Ferry - Yele	Gravel	4	15+000	20+000	5.0		3	4	2	2	3	4	5	5	3	3	2	3	2	3	1	4			
8	F1208	Magbolu Ferry - Yele	Gravel	5	20+000	25+000	5.0		3	4	2	2	2	3	3	4	3	3	2	3	2	3	1	4			
8	F1208	Magbolu Ferry - Yele	Gravel	6	25+000	26+700	1.7		2	3	2	2	2	3	3	4	3	3	2	3	2	3	1	4			

Economic Growth through Effective Road Asset Management – Consolidated Baseline Study Report

9	F1209	Magbaraka - Magbas	Gravel	1	+0	5+000	5.0	7.5	3	4	2	3	2	3	3	4	2	3	2	2	2	3	1	4	
9	F1209	Magbaraka - Magbas	Gravel	2	5+000	7+500	2.5		3	4	2	3	2	3	5	5	3	4	2	2	2	3	1	4	
10	F1210	Matham - Masanga	Gravel	1	+0	5+000	5.0	6.9	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	4	
10	F1210	Matham - Masanga	Gravel	2	5+000	6+900	1.9		1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	4	
11	F1211	Matham - Kalmaroh - Mabontor	Gravel	3	+0	5+000	5.0	26.6	3	4	3	4	3	3	5	5	3	4	3	4	3	4	1	4	
11	F1211	Matham - Kalmaroh - Mabontor	Gravel	4	5+000	10+000	5.0		3	4	3	4	3	3	5	5	3	4	3	4	3	4	1	4	
11	F1211	Matham - Kalmaroh - Mabontor	Gravel	5	10+000	15+000	5.0		3	4	3	4	3	3	5	5	3	4	3	4	3	4	1	4	
11	F1211	Matham - Kalmaroh - Mabontor	Gravel	6	15+000	20+000	5.0		4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	1	4
11	F1211	Matham - Kalmaroh - Mabontor	Earth	7	20+000	26+600	6.6		4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	1	4
12	F1212	Gbfaya - Nerekekoro - Tonkolili	Gravel	1	+0	5+000	5.0	20.8	3	2	3	2	3	2	5	5	3	2	3	2	3	2	1	4	
12	F1212	Gbfaya - Nerekekoro - Tonkolili	Gravel	2	5+000	10+000	5.0		3	2	3	2	3	2	5	5	3	2	3	2	3	2	1	4	
12	F1212	Gbfaya - Nerekekoro - Tonkolili	Gravel	3	10+000	15+000	5.0		3	2	3	2	3	2	5	5	3	2	3	2	3	2	1	4	
12	F1212	Gbfaya - Nerekekoro - Tonkolili	Gravel	4	15+000	20+800	5.8		3	2	3	2	3	2	5	5	3	2	3	2	3	2	1	4	
13	F1213	Magbosie - Robangbut	Gravel	1	+0	5+000	5.0	12.3	3	4	5	5	2	3	5	5	2	2	3	3	3	3	1	4	
13	F1213	Magbosie - Robangbut	Gravel	2	5+000	10+000	5.0		3	4	4	5	2	3	5	5	3	3	3	4	3	4	1	4	
13	F1213	Magbosie - Robangbut	Earth	3	10+000	12+300	2.3		4	5	5	5	3	4	5	5	5	5	3	4	5	5	1	4	
14	F1214	Yonibana - Petifu	Gravel	1	+0	5+000	5.0	6.6	3	5	3	4	3	4	5	5	3	3	4	5	2	3	1	4	
14	F1214	Yonibana - Petifu	Gravel	2	5+000	6+600	1.6		3	5	4	5	4	5	5	5	5	5	4	5	2	3	1	4	
15	F1215	Yonibana - Roten	Gravel	1	+0	5+000	5.0	9.5	4	5	2	3	4	5	5	5	3	4	3	4	3	3	1	4	
15	F1215	Yonibana - Roten	Gravel	2	5+000	9+500	4.5		4	5	2	3	4	5	5	5	4	4	4	5	2	3	1	4	

DEFECTS RATING CRITERIA

D - DEGREE/SEVERITY
 1. Slight 2. Slight to Warning 3. Warning 4. Warning to Severe 5. Severe

E - DEFECT EXTENT/OCCURRENCE/QUANTITY
 % of length: 1. <5% 2. 5-10% 3. 10-25% 4. 25-50% 5 >50%

Socioeconomic Data Tonkolili District

No.		Units	Names of Village Centres									
			1	2	3	4	5	6	7	8	9	10
	General											
1	Name of trading centre/village		Makong	Manasi	Mamaso sanko	Masanga	Mangebana Centre	Petifu Fula Masa	Mafurabi	Mayira	Magbass	Masombrie
2	GPS coordinates											
3	Map coordinates											
4	Population	No.	4,574	1,450	4,200	5,340	1,700	2,500	520	5,320	3,450	7,000
5	Distance from nearest paved road	km	8	4	10	13.3	12.5	10	42.5	31.4	9.5	41.6
6	Distance from district centre. <i>Name of centre: Magburaka Town</i>	km	44	48	42.5	15	12.4	70	48	36.9	9.4	43.6
7	Average travel time to district centre (motorbike, car, truck)	Minutes	80	105	110	22	45	121	150	165	45	80
8	Name of the road serving the trading centre/village		Makali - Makong	Makoni - Manasi	Markoni - Mamaso sanko	Matham road	Matotoka Mangebana Road	Yoni Bana - Petifu road	Old ferry road	Mile 91 - Mayira road	Magburaka - Magbass	Masombrie - Magburaka road
9	How many days of the year is the road closed due to rains?		45		2	7	2		2	10	4	3
Availability and cost of transport												
10	No. of private transport operators serving the trading centre/village	No.	70	25	59	50	95	15	38	64	25	104
10.1	Light vehicle	No.	0	0	4	0	11	0	5	32	0	1
10.2	Bus/combi (Poda Poda)	No.	0	0	0	0	0	0		2	0	
10.3	Motorcycle /boda-boda (Okada)	No.	70	25	55	50	80	15	30	0	22	100
10.4	Freight transport /trucks	No.	0	0	0	0	4	0	3	30	3	3
11	No. of available trips to district centre per day (on a normal day)	No.	10	10	40	50	25	8	22	4	8	65
11.1	Light vehicle	No.	0	0	2	0	5	0	1	4	0	1
11.2	Bus/combi (Poda Poda)	No.	10	0	0	0	0	0	20	0	0	0
11.3	Freight transport /trucks	No.	0	0	0	0	2	0	1	0	0	1
	Motorcycle (bodaboda) /okada		10	10	38	50	18	8		4	8	63
12	No. of available trips to district centre per day (on a market day)	No.	70	0	4	0	87	15	38	7	25	98
12.1	Light vehicle	No.	0	0	0	0	0	0	5	7	0	1
12.2	Bus/combi (Poda Poda)	No.	0	0	0	0	13	0	0	0	0	0
12.3	Freight transport /trucks	No.	0	0	0	0	6	0	3	0	3	3

Economic Growth through Effective Road Asset Management – Consolidated Baseline Study Report

12.4	Motorcycle (bodaboda) /okada		70		4		68	15	30	0	22	94
13 Fares on public transport to the district centre (passenger-km)		Le/person										
13.1	Light vehicle	Le/person	40,000	25,000	25,000	7,000	10,000	0	35,000	15,000	3,000	15,000
13.2	Bus/combi (Poda Poda)	Le/person	0	0	0	0	0	0		0	0	
13.3	Motorcycle (boda-boda) / Okada	Le/person	25,000	20,000	30,000	5,000	20,000	30,000	30,000	30,000	3,000	20,000
14 Cost of freight transport to the district centre (ton-km) Rice		Le/50kg										
14.1	Truck (.... tons)	Le/50kg					30,000		70,000		60,000	80,000
14.2	Light vehicle (...tons) Rice	Le/50kg		10,000	5,000	2,000	60,000		100,000	100,000		100,000
14.3	IMTs /motorcycle (...tons) Rice	Le/50kg	12,000	25,000	10,000	3,000		80,000	150,000	150,000	40,000	150,000
Price of goods in the trading centre/villages												
15	Prices of three items exported from the village (e.g. potatoes, rice, maize, charcoal)											
	<i>Item 1 (name)-state: potatoes (per plastic)</i>	Le/50kg	2,000	1,000	2,000	1,000	1000	1,000	2,000	1,000	2,000	20,000
15.2	<i>Item 2 (name)-state units: Rice (butter cup): Palm Oil (improved variety IV & Normal N)</i>	Le/butter cup	1,200	1,300	1,300	1,200	1,400	1,300	1,000	1,200	1,000	1,300
		Le/pint (IV)	1,500	1,200	2,000	1,700	1,500	1,500	1,300	1,500	1,300	1,500
		Le/pint (N)	2,000	2,000	2,500	2,000	2,300	2,200	1,700	1,900	2,000	2,300
15.3	<i>Item 3 (name)- state units: Chackcoal (C) & Pepper (P)</i>	Le/50kg (C)		80,00		10,000	15,000	9,000			10,000	12,000
		Le/cup (P)	1,700	2,000	1,500	1,500	1,700	2,000	2,000	1,800	2,000	2,000
16	Prices of three items imported into the village (e.g. petrol, soap, batteries, seed, fertiliser)											
16.1	<i>Item 1 (name)- state units: Petrol (per litre) official price was Le 3,750</i>	Le/Litre	8,500	7,000	7,000	5,000,	5,000	6,000	7,000	7,000	6,500	7,000
16.2	<i>Item 2 (name)- state units: Bathing soap (BS) and battery (big size (BB), medium size (BM))</i>	Le/BS								3,000		
		Le/BB	7,000	6,000	5,000	6,000		3,000	3,000		2,500	3,000
		Le/BM	4,000	3,000	3,000	2,500	1,500		2,500		2,000	2,000
16.3	<i>Item 3 (name)- state units: Battery (big size (BB) and medium size (BM)) & Exercise book (EB), Rice (R)</i>	Le/BB	5,000					3000		3,000	3,000	
		Le/BM	2,500	2,000	2,500			2,500		2,500		
		Le/EB				1,500	800					
		Le/50kg (R)							200,000			
17 Education- nearest school - Name of school:			SDA Primary School	TDC Primary School	R.C Primary school		TDC Primary school		SLMB Primary School	SLMB Primary School		MPM Primary School
18	Average time to reach the nearest school from the trading centre by different modes of transport (Foot - F, Motorbike - MB)	Min. (F)	25				10	0	15	30	10	25
		Min. (MB)		45								
19	No. of pupils enrolled at the nearest school (gender disaggregated)	Male	5	191			120	205	42	220	154	22
		Female	3	165	3	257	95	105	33	200	201	30

Economic Growth through Effective Road Asset Management – Consolidated Baseline Study Report

20	Average monthly pupil attendance rate for past year (gender disaggregated)	Male	150				110	199	35	105	98	20
		Female	200				82	103	32	301	200	
21	No. of staff employed at the school (gender disaggregated)	Male		7	5	5	2	3	3	2	5	4
		Female		3	4	4	5	3	2	7	4	
22	Average monthly staff attendance rate for the past year	No./%	80%	90%	301	100%	5		2	102	298	100%
Road safety												
23	Is road safety awareness taught to children at the school?		No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
24	Are road safety awareness presentations made to adults in the village?		No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
25	No. of accidents on the road serving the trading centre /village for past year	No.		35	32	25	0		8	5		20
Health - nearest health centre/clinic- Name of health centre/clinic:					PHU	PHU	Mangebana Community Health centre (CHC)		PHU	PHU	Magbass PHU	Masombrie community health post
26	Average time to reach the nearest health centre from the trading centre by different modes of transport (gender disaggregated)	Min. (M)			5		8	1	30	5	15	10
		Min. (F)			8		10	4	45	5	15	15
27	Average no. of health workers at clinic each month for the past year (gender disaggregated)	Male				25	2	1,014	3	2	2	2
		Female			1,000	27	3	1,516	2	7	6	5
28	Average no. of patients treated each month for the past year (gender disaggregated)	Male				500	55		500	1,000	1,001	1,000
		Female				500	185		800	1,100	1,842	3,000
29	Is there an ambulance service available from the clinic to the district hospital?				No	Yes	Yes	No	Yes	No	No	Yes
Agriculture												
30	What is the average no. of visits per month by an extension worker to the village?	No.	4		4	8	2			4	8	3
31	Price of main cash crop produce in the district centre: Rice (R), Groundnuts (G)	Le/50kg (R)	160,000	150,000	NA	160,000	190,000	160,000	200,000	160,000	160,000	NA
		Le/50kg (G)			160,000							
32	Price of main cash crop produce in the village/trading centre: Rice (R), Groundnuts, Cassava (C)	Le /50kg (R)					170,000				150,000	
		Le/50kg (G)	150,000	90,000		150,000			150,000			
		Le/50kg (C)						90,000		90,000		
33	Farm-gate price of main cash crop produce in the village: Rice (R), Groundnut (G)	Le /50kg (R)					150,000					
		Le/50kg (G)	120,000	NA	NA	110,000	NA	NA	110,000	60,000	130,000	NA
Economic activities - non-farm												
34	Factories, local industries /cottage industries in the village/trading centre (type & no.)											
35	No. of shops (S) / kiosks (K) in the	No.	NA	NA	7	7	2	NA	NA	NA	6	7 (+15S)

	village/trading centre											
36 Prices of the three items exported from the village												
36.1	Item 1 (name)- state units: Rice	Le/ butter cup	1,000	1,000	2,000	1,000	1,200	1,300	1,100	1,300	1,000	1,700
36.2	Item2 (name) -state unit: Charcoal	Le/ 50kg	1,000	1,000	2,000	1,000	1,200	1,000	1,000	1,000	1,000	800
36.3	Item 3 (name)- state units: Potatoes	Le/ 50kg	2,000	1,000	2,000	1,000	1,500	1,000	1,000	1,000	2,000	5,000
37 Prices of the three items imported into the village												
37.1	Item 1 (name)- state units: Petrol (P), Battery (big size (BS), medium size (BM))	Le / Litre		6,500			3,750	6,500		7,000		
		Le/BS	1,200		1,200				1,200		1,200	1,500
		Le/BM							1,000			1,000
37.2	Item 2 (name)- state units: Battery (big size (BS), medium size (BM))	Le/BS	1,500	3,000		1,500		3,000	1,300	3,000	1,500	1,200
		Le/BM	1,000		1,000		1,000	2,500		2,500		
37.3	Item 3 (name)- state units: Exercise book (80 pages)	Le/ book	1,500		1,500	1,300	500	3,000	1,500	3,000	500	500

Annex E. Baseline Data – Western Cape

Self-Assessment Questionnaire Scores – Western Cape

Building Block	#	Item Assessed	Agency Score	Advisory Team Score
External	1.1	Stakeholder consultation	2	2
	1.2	Council engagement	4	2
Institutional	2.1	AM policy development	3	2
	2.2	Level of service - existence	2	2
	2.3	Level of service - use	4	3
	2.4	Emergency response plan	2	3
	2.5	Staff roles and responsibilities	1	3
	2.6	Staff training and capacity building	1	3
	2.7	Staff salaries	3	3
Financial	3.1	Provision of road maintenance funding	3	3
	3.2	Budget funding against perceived need	1	3
	3.3	Asset valuation	2	3
	3.4	Budget funding - asset value	1	3
	3.5	Financial forecasting	3	3
	3.6	Accounting system	4	3
Managerial	4.1	AM system	4	3
	4.2	Maintenance intervention levels	3	3
	4.3	Maintenance plans - existence	4	3
	4.4	Maintenance plans - methods used	4	3
	4.5	Maintenance backlog	2	3
	4.6	Traffic forecasting	2	2
	4.7	Capital expenditure - basis for	1	3
Technical	5.1	Road referencing system - existence	1	4
	5.2	Road inventory - existence	2	4
	5.3	Road inventory data	3	3
	5.4	Road condition assessment	3	3
	5.5	Asset utilisation	4	4
Operational	6.1	Service delivery mechanisms	3	3
	6.2	Maintenance planning	4	3
	6.3	Auditing	2	2

Assessment of RAM Performance Indicators – Western Cape

Weighting Ranking	Building Block	Max. Possible Score	Agency Score	Advisory Team Score
1	External	4	3.0	2.0
2	Institutional	4	2.3	2.7
3	Financial	4	2.3	3.0
4	Managerial	4	2.9	2.9
5	Technical	4	2.6	3.6
6	Operational	4	3.0	2.7
Rural Road Asset Management Assessment Score				2.7
Rural Road Asset Management Rating				Mature
Rural Road Preservation Index (RAPI)				0.68

Road Condition Data – Western Cape

Road Condition data for the Western Cape is included in a separate PDF file.

Socioeconomic Data – Western Cape

The Western Cape is not collecting social and economic data.