



AfCAP
Africa Community Access Partnership



Economic Growth through Effective Road Asset Management

Report on 2017 RAM Assessment
Support Visits to TARURA, Tanzania



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Cover Image: Scenes from support visits to Tanzania

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Abstract

The Africa Community Access Partnership (AFCAP) is providing technical assistance to achieve improvements in asset management performance on selected rural roads networks in Sierra Leone, Zambia and Uganda, with reference to the Western Cape Province in South Africa.

During a project implementation meeting held in South Africa in November 2016, the countries that were present were encouraged to conduct road asset management performance self-assessments. Three districts in Tanzania subsequently submitted their self-assessments using the GEM questionnaire. Since then, a new organisation, TARURA¹, was set up in Tanzania to manage roads that previously were the responsibility of the District Councils. The GEM project has assisted TARURA to fully understand the RAM assessment questionnaire and carry out a detailed self-assessment of its own organisation, with the view of eventually being considered for participation in the GEM project.

The GEM Advisor visited TARURA in October and December 2017 and presented GEM project in greater detail whilst assisting TARURA through a preliminary self-assessment process. Fruitful workshops were held in two locations: Mwanza and Dar es Salaam. The interactions further underlined the importance of obtaining early stakeholder buy-in when rolling out the GEM project to other countries.

The result of the two workshops was that TARURA was rated as **CORE** in terms of Asset Management Maturity Level, scoring a Rural Access Sustainability Index (RASI) of 0.47 of a scale of 0-1 and a Rural Accessibility Sustainability Grading (RASG) of D (Poor).

Following identification of significant gaps in TARURA's asset management capacity, the workshops resolved to recommend that TARURA joins the GEM project as it would assist in addressing gaps identified in TARURA's performance, as well as to provide TARURA with an opportunity to share knowledge with other participating countries. It is recommended that TARURA's desire to join the GEM project be favourably considered. This can be achieved under the current management structure of the CDS advisory team, with some additional resources added to the current service contract. This would require a review of current activities by the Tanzania ReCAP representatives and prioritisation of GEM. The addition of further countries (in addition to Tanzania) may require a review of the structure of the CDS team, with the inclusion of "local" GEM advisers in each of the participating countries.

¹Tanzania Rural and Urban Roads Agency

Key Words

Asset Management, Asset Value, Rural Roads, TARURA, Self-Assessment, Rural Access, Sustainability Index

Acronyms, Units and Currencies

\$	United States Dollars
AFCAP	Africa Community Access Partnership
AM	Asset Management
ARMFA	African Road Maintenance Fund Association
ASCAP	Asia Community Access Partnership
CDS	Civil Design Solutions
DFID	Department for Further International Development
DM	District Municipality
DROMAS	District Road Maintenance Management System
GDP	Gross Domestic Product
GPS	Global positioning system
IAMM	Infrastructure Asset Management Manual
ILO	International Labour Organization
IQL	Information Quality Level
IRAT	Improving Rural Access in Tanzania
IRI	International Roughness Index
LVR	Low Volume Road
MLG	Ministry of Local Government
NRFA	National Road Fund Administration
PMU	Project Management Unit
PO-RALG	President’s Office – Regional and Local Government
RAI	Rural Access Index
ReCAP	Research for Community Access Partnership
RI	Roughton International
SDG	Strategic Development Goal
TANROADS	Tanzania National Roads Agency
TARURA	Tanzania Rural and Urban Roads Agency
UK	United Kingdom (of Great Britain and Northern Ireland)
UKAid	United Kingdom Aid (Department for International Development, UK)
UoB	University of Birmingham

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1 Introduction

1.1 Background to the Project

Cardno Emerging Markets is managing a programme of Research for Community Access Partnership (ReCAP) on behalf of the Department for International Development (DFID). The programme includes research and capacity building activities in Africa (Africa Community Access Programme – AfCAP) and Asia (Asia Community Access Programme – ASCAP). Cardno signed a contract with Civil Design Solutions (CDS) of Mauritius to provide consultancy services for the delivery of a regional research project on improved asset 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 as part of AfCAP. Sierra Leone, Uganda, Zambia and the Western Cape are participating in the project, but the research process and outcomes are being shared with other AfCAP-participating countries through regional meetings of the Project Implementation Team (PIT). If the project is successful it is expected that the research process will be rolled out on a wider basis on Africa and SE Asia. The African Road Maintenance Fund Association (ARMFA) is expected to provide an oversight role and a possible longer term institutional home. The Implementation Phase of the project commenced in July 2016 and will run for 29 months.

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 sub-national 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 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 destinies. 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 funded by UK Aid through AfCAP.

1.5 Purpose of this Report

During the PIT meeting held in the Western Cape, South Africa, in November 2016, the countries that were present were encouraged to conduct road asset management performance self-assessments. This included countries that were not full participants in GEM. Three districts in Tanzania subsequently submitted their self-assessments using the GEM questionnaire and the results were analysed. As experience on the project showed that unaided self-assessments were of limited value, approval was granted by AfCAP for the GEM Project to assist the districts to fully understand the questions and provide accurate responses. It was believed that the GEM intervention would contribute significantly to broadening the perspective on road asset management and consolidating the districts' benefits from using DROMAS² and implementation of the DFID-funded IRAT³ project.

The interaction with roads agencies in Tanzania would also assist ReCAP PMU in defining a methodology to be adopted in rolling out the GEM project to other ReCAP countries. This is in line with the uptake and embedment strategy that is fundamental to the ReCAP Way Forward Strategy to 2020

This report covers two support visits made by Charles T. Bopoto, a member of the GEM Advisory Team, to Tanzania, over the following periods: 16th to 21st October 2017 and 04th to 14th December 2017.

Details of the itineraries of the visits and the persons who participated in the workshops are given in **Annex A** and **Annex B** respectively.

²District Road Maintenance Management System.

³ Improving Rural Access in Tanzania

2 Preliminary Visit of October 2017

2.1 Objectives

At the time of approval of support to Tanzania, the objective of the assignment was to visit three districts (Kilindi, Mufindi and Mbinga) to:

- Present an overview of the GEM Project,
- Review the AM Assessment Procedure and conduct brief discussions of RAM Self-Assessment Results for the three districts,
- Assist the Districts to update their AM Self-Assessment status and discuss the results,
- Present a brief on GEM’s procedures for Road Condition Assessment and Asset Valuation, and
- Assist the districts to identify AM gaps and prepare mitigation plans.
- Undertake a preliminary assessment of the implications to roll-out in other ReCAP countries.

An executive agency known as Tanzania Rural and Urban Roads Agency (TARURA) had since been formed by the time of the visits. However, the objectives of the visits largely remained the same. The approach was revised such that the GEM Advisor would firstly meet with the TARURA CEO and senior staff and structure the subsequent visit to maximise the benefit to TARURA.

2.2 Activities Undertaken

The following activities were undertaken during the first visit of October 2017:

- Introductory meetings were held at TARURA Head Office with the Executive Director, Directors of Development, Maintenance and Planning,
- A further interactive meeting was then held with the Executive Director and his team during which the GEM RAM Self-Assessment Tool was presented and discussed. The meeting went through the questionnaire Building Block 1 – External Issues, thus giving the executives a perspective of the structuring of the tool,
- A visit was made to Kilindi District, one of the three districts that had completed the questionnaire; meetings were held with the Council Manager/Engineer and his team as well as with the Acting Director of the Council, and
- A site visit was undertaken to an EU funded road upgrading project being executed by the Kilindi Council TARURA Office.

2.3 Visit Major Findings and Outcomes

The major findings of the visit were:

- Since the expression of interest by representatives of PO-RALG⁴ in the GEM Project in 2016, a new organisation, TARURA, has been set up to manage roads that previously

⁴President’s Office – Regional and Local Government: Local Government ministry.

were the responsibility of the District Councils. The organisation is in the process of establishing itself. All engineering personnel at district level have been transferred to TARURA and are now operating independently of the councils,

- TARURA senior management expressed interest in becoming part of the GEM Project; an application to join was to be lodged,
- In examining Building Block 1 of the RAM Assessment, TARURA senior management scored the organisation at 62%,
- It was observed that TARURA could use the RAM Self-Assessment Tool as a self-auditing tool at various levels of the organisation and could invite other peer organisations to give an external view,
- The visit to the district revealed that Councils would still be involved in the preparation of annual plans through presenting their priorities to TARURA for consideration, as well as participation in Regional Road Boards,
- The Council Manager/Engineer was well versed with the District Road Management System (DROMAS) which was currently being used for capturing inventory information, condition survey data and contract management records. The modules for project prioritisation etc were still under development,
- The new set up had freed the Council Manager/Engineer from a range of council responsibilities, and input into road maintenance activities had now become more focussed; also, payments to contractors were now being more speedily settled,
- Kilindi district was responsible for 846kms of which only 2% were engineered gravel roads; the roads were described as being in fair to poor condition,
- Within the district, TANROADS was responsible for 230kms of gravel roads,
- TARURA does not hold any equipment of its own and procures/hires from the private sector as and when required, or engages contractors on specific upgrading projects,
- The Council Manager/Engineer's team was very lean and needed more support staff such as technicians, clerks of works, site checkers, etc,
- It was agreed that TARURA would be represented at the forthcoming AFCAP IRIM Meeting that was to be held in Uganda in November 2017,

2.4 Planning of 2nd Visit RAM Self-Assessment Sessions/Meetings:

As there had been far-reaching institutional changes since the expression of interest in joining the GEM project by representatives of PO-RALG in 2016, discussions were held with the designated TARURA coordinators and the following options for the second visit were set for the consideration by senior management as the way forward:

- Option 1: The visit to the two districts in the south would be undertaken from the 4th to 14th of December with the same objectives as listed above,
- Option 2: Two meetings would be held over the period 4th to 14th December at two convenient locations. At the meetings, the GEM representative would assist the Regional

Coordinators and some Council Managers/Engineers (20-25 participants) to apply the RAM Self-Assessment tool to their current situations. The outcome would be the identification of AM gaps and drafting of a plan of action to address the same. Applications for assistance from AfCAP to address the gaps could then be made.

TARURA was to confirm the preferred option and proceed with necessary arrangements.

3 RAM Assessment Visit of December 2017

3.1 Background

TARURA decided to adopt Option 2 outlined above and the decision was supported by AfCAP management. Two workshops were therefore planned for Mwanza (Northern Tanzania) and Dar es Salaam (Southern and Central Tanzania).

3.2 Rationale for RAM Assessment Process to be Adopted

Selected road agencies in Sierra Leone, Zambia and Uganda are participating in the GEM project. In 2016 and 2017, these agencies undertook the RAM self-assessment exercise. At the same time, the GEM advisory team, following several visits to the agencies, also assessed the RAM maturity level of the agencies. The process culminated in the holding of joint reviews of the assessments by the agencies and the advisory team.

The above approach was not adopted in the case of Tanzania as it would not yield any significant value taking into account the limited time that was available as well as the institutional changes that had given birth to TARURA. The approach adopted instead brought together a large number of knowledgeable middle level management from various regions who, through highly interactive workshop processes, were able to give a good indication of the RAM maturity status of the new organisation.

3.3 Objectives

The objectives of the two RAM self-assessment meetings were set as follows:

- To present an overview of the GEM Project to the participants,
- To present details of the RAM Maturity Assessment tool and assist the participants to undertake a process of self-assessment,
- Assist the meetings to identify AM gaps and prepare preliminary mitigation plans,
- Briefly present the Road Condition and Assessment and Asset Valuation tool to the workshop participants, and
- To give an overview of the tool for monitoring socio-economic impact of interventions on the road networks.

3.4 Activities Undertaken

Two meetings were held at the two locations mentioned above and during each meeting the following activities were undertaken:

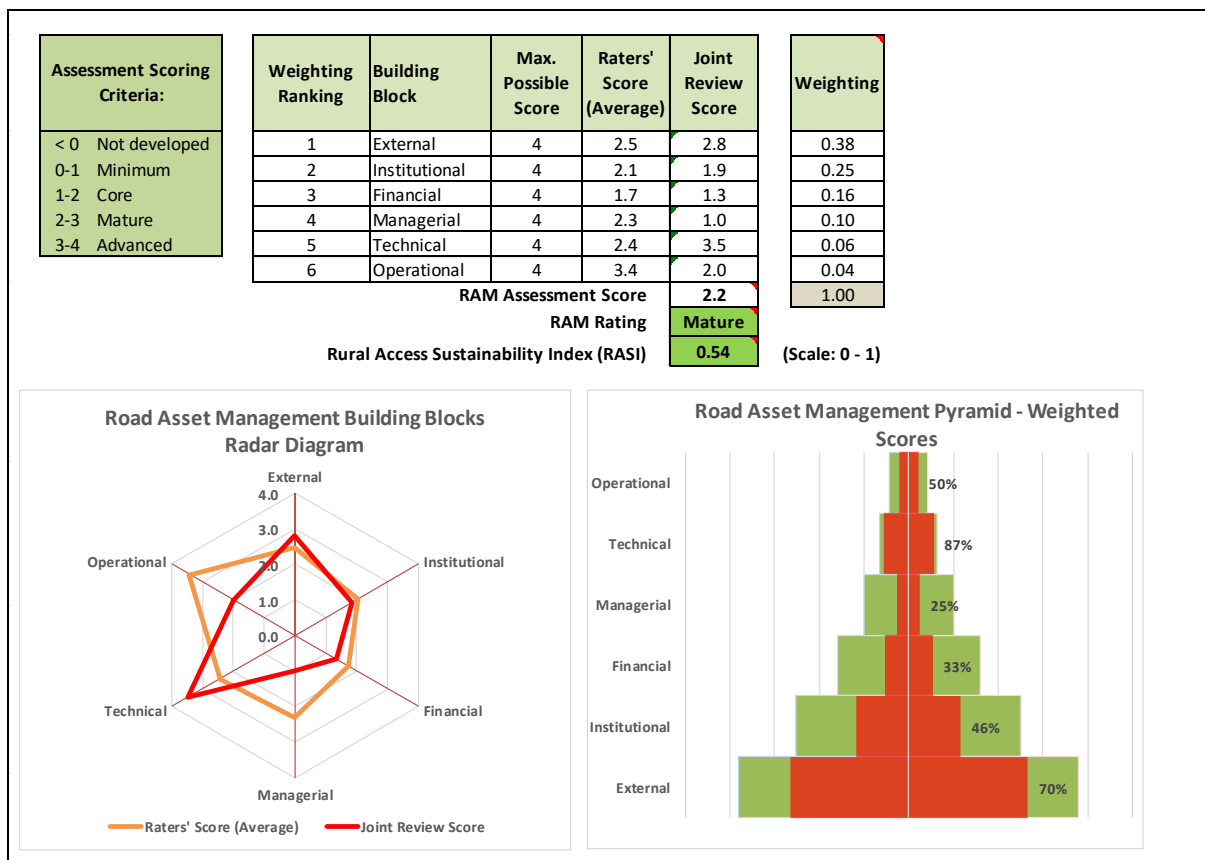
- A presentation was made by the GEM Advisor on the background to the GEM project. This also included a presentation on Road Condition Assessment and Asset Valuation as well socio-economic impact monitoring. The PowerPoint presentation employed is given as **Annex E**.

- A detailed review was then made of the RAM Assessment Procedure in workshop format, with participants encouraged to freely contribute to the discussions.
- The participants were then given the opportunity to complete the questionnaire as individuals, with guidance from the GEM Advisor. This was seen as advantageous in that it encouraged each participant to read and fully understand the structure of the tool.
- The results from the individual assessments were then collated and averaged out, followed by a joint review by all participants as group.
- The participants, with the guidance of the GEM Advisor, proceeded to establish their RAM Maturity Status and the AM gaps. Lists of actions that needed to be taken to address the gaps were prepared for consideration by senior management.
- The participants then discussed the potential benefits of joining the GEM project and made resolutions that would be recommended to senior management.
- Site visits to ongoing and recently completed projects were undertaken.

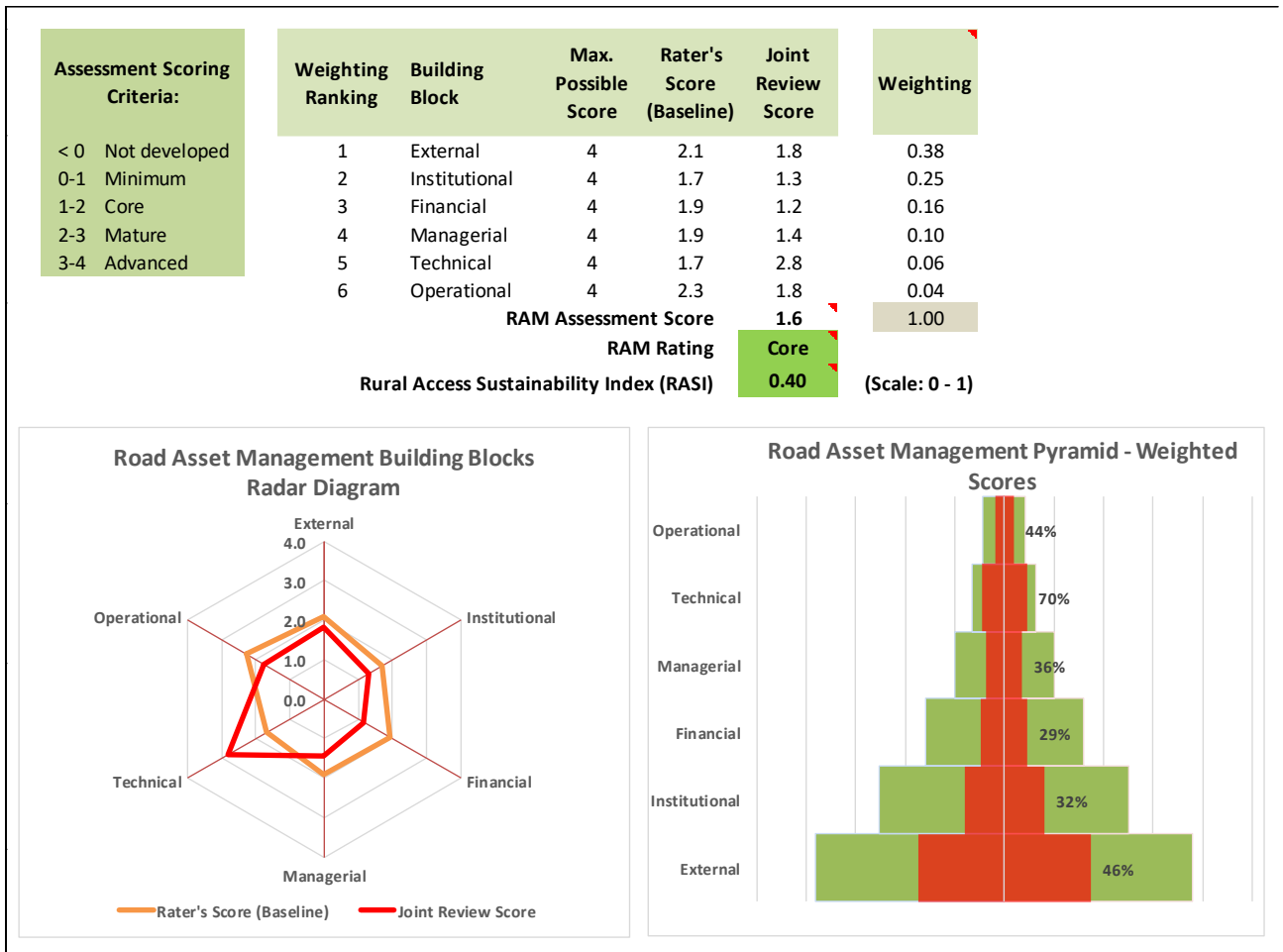
3.5 RAM Assessment Results

The results of the RAM self-assessment exercise were as given in the tables and charts below.

3.5.1 Mwanza Workshop

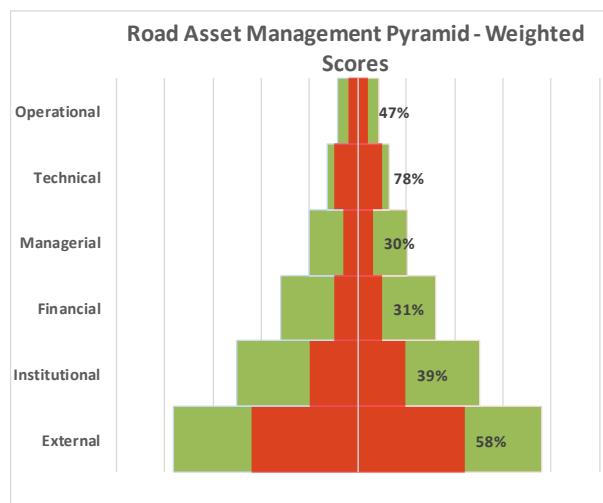
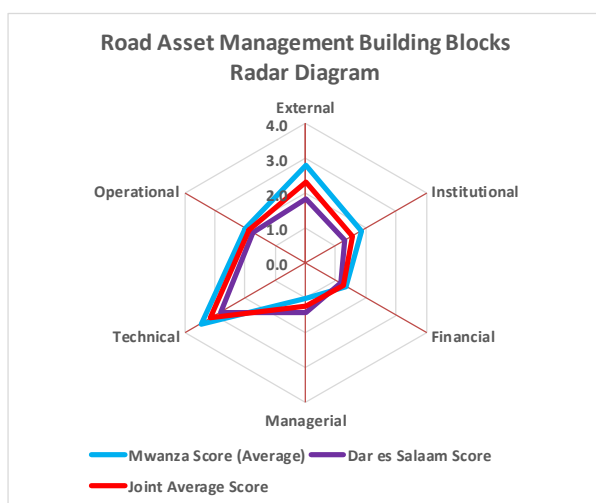


3.5.2 Dar es Salaam Workshop



3.5.3 Combined Final RAM Status for TARURA

Assessment Scoring Criteria:	Weighting Ranking	Building Block	Max. Possible Score	Mwanza Score (Average)	Dar es Salaam Score	Joint Average Score	Weighting
<0 Not developed	1	External	4	2.8	1.8	2.3	0.38
0-1 Minimum	2	Institutional	4	1.9	1.3	1.6	0.25
1-2 Core	3	Financial	4	1.3	1.2	1.3	0.16
2-3 Mature	4	Managerial	4	1.0	1.4	1.2	0.10
3-4 Advanced	5	Technical	4	3.5	2.8	3.1	0.06
	6	Operational	4	2.0	1.8	1.9	0.04
RAM Assessment Score						1.9	1.00
RAM Rating						Core	
Rural Access Sustainability Index (RASI)						0.47	(Scale: 0 - 1)



The weightings for each building block were discussed in the workshops but there was insufficient time to reach consensus. The weightings used for the analysis are based on those used by the other GEM countries.

3.5.4 Rural Access Sustainability Index and Grade for TARURA:

Rural Access Sustainability Indices		Rural Access Sustainability Grades	
AM Building Block	Index	AM Building Block	Grade
External	0.58	External	C
Institutional	0.39	Institutional	D
Funding	0.31	Funding	D
Managerial	0.30	Managerial	D
Technical	0.78	Technical	B
Operations	0.47	Operations	D
Rural Access Sustainability Index (RASI)	0.47	Rural Access Sustainability Grade (RASG)	D

KEY:					
RASI Scale	<0.30	0.30-0.55	0.55-0.70	0.70-0.85	>0.85
RASG Scale	E	D	C	B	A
Remark	V. Poor	Poor	Fair	Good	V. Good

Detailed completed questionnaires for the two workshops and analysis are included as **Annex C (Mwanza) and D (Dar es Salaam)**.

3.6 AM Gap Analysis Results

As mentioned above the workshops undertook a gap analysis exercise thereby identifying weaknesses in each of the building blocks that would need to be addressed.

Detailed results of the actions identified as necessary to address the AM gaps are given in the table below and overleaf.

No.	RAM Aspect		Action to address Gaps – Mwanza	Action to address Gaps – Dar es Salaam
1	General	1.1	Apply to join the GEM Project	Apply to join the GEM Project
2	External	2.1	Finalise preparation of a rural road maintenance strategy guided by the National Transport Policy and TARURA Strategic Plan	Review national policy to clearly reflect responsibilities for management of rural roads
		2.2	Develop a communication strategy that caters for rural communities	Update national policy to identify adequate funding sources for road maintenance
		2.3		TARURA to develop a communication strategy
3	Institutional	3.1	Develop an Asset Management Policy	Establish an Asset Management Policy that takes stakeholder needs into account, and is linked to TARURA's vision and mission
		3.2	Set Level-of Service parameters in consultation with road users and other stakeholders	Develop Level of Service criteria based on stakeholder expectations
		3.3	Develop and formalize an Emergency Response Plan	Recruit adequately qualified staff to undertake AM responsibility
		3.4	Align roles and responsibilities with the Asset Management Policy, strategies etc	Develop a capacity building programme for AM encompassing all levels of responsibility in TARURA
		3.5	Implement capacity development programmes and continuous training in: <ul style="list-style-type: none"> • Prioritisation of project • Economic analysis • Multi-criteria analysis • Asset valuation • Project management • Report preparation • Traffic modelling • Mapping of road network • Climate resilience 	Improve conditions of service of staff; retain experienced staff
		3.6	Improve staff remuneration; retain staff	
4	Funding	4.1	Establish a rational formula for fund allocation between TARURA and TANROADS	Review allocation formula to TARURA from the Road Fund to at least 40-50%, prepare justification

No.	RAM Aspect		Action to address Gaps – Mwanza	Action to address Gaps – Dar es Salaam
		4.2		Carry out asset valuation of the TARURA network
		4.3		TARURA to aim to fund more than 90% of maintenance requirements
		4.4		Undertake financial forecasting for all TARURA activities
5	Managerial	5.1	Improve DROMAS and request training in HDMIV	Set appropriate intervention levels for all classes of works: provision and maintenance
		5.2	Draft a Rural Road Rehabilitation Manual	Use multi-criteria analysis (MCA) in prioritizing road provision and maintenance works
		5.3	Development skills in preparation of mid and long-term road maintenance, rehabilitation and upgrading plans	Carry out demand forecasting of traffic
		5.4		Prepare rolling multi-year road provision and maintenance programmes
		5.5		Introduce techniques that prioritise road maintenance works using socio-economic analysis procedures
6	Technical	6.1	Finalise proposal for research project in materials	Measure gravel loss during annual road condition surveys
		6.2	Develop protocol for measuring gravel loss	Establish deterioration models for all types of road, undertake necessary research
		6.3		Establish service lives for each class and type of asset
7	Operations	7.1	Update road maintenance manual	Review reporting procedures for maintenance works and consider preparation of daily maintenance reports
		7.2		Service providers to TARURA should be ISO certified
		7.3		Review service delivery mechanisms annually

The actions identified by the participants at the two workshops will need to be analysed and rationalised in the event that Tanzania becomes a participant in GEM. This could include:

- Linkages to other ReCAP initiatives. For example, a MCA system for road prioritisation has been developed under ReCAP in Bangladesh and customisation to Tanzania could be investigated.
- Inputs from a Road Financing Expert could be tested in Tanzania in developing a framework for improved motivation of funds from Road Fund allocations by Districts. This could then be passed on to other lead districts for implementation and customisation of a generic framework.

3.7 TARURA AM Maturity Status

The results from the RAM Maturity Status Self-assessment indicated the following:

- Taking the two workshops as representative of TARURA as an organisation, TARURA was rated as **CORE** in terms of Asset Management Maturity Level, scoring a Rural

Access Sustainability Index (RASI) of 0.47 of a scale of 0-1 and a Rural Accessibility Grading of D (Poor).

- TARURA is a new organisation and its maturity status can be viewed as reflecting the previous status quo when rural and urban roads were provided and maintained by local authorities.
- TARURA, since its formation, is being guided by the national transport policy which, to its credit, recognises the importance of including rural communities in the provision and maintenance of community roads.
- The policy mentioned above was found by the participants to the workshops to be weak and would require review to emphasize the provision of adequate funds for road maintenance, focus on clearing of backlog maintenance and make it a requirement for road agencies to adopt asset management approaches.
- TARURA managerial capacity was found weakest of the building blocks and this was due to the absence of an established Asset Management System. The absence of the systems is also reflected in the low scoring under the Institutional Building block wherein there is no defined AM Policy or Strategy.
- As expected, the workshops identified funding for rural road maintenance as being less than 30% of requirements; the participants also expressed the sentiment that the allocation of funds from the Road Fund to TARURA was currently favouring TANROADS although TARURA's road network was viewed as equally important; it was seen as necessary that a transparent formula for allocation of funds be developed.
- TARURA was relatively strong technically, this being a direct result of the use of DROMAS in maintenance management.

3.8 Site Visits

3.8.1 Mwanza

Participants visited five locations on the recently completed cobblestone roads in the suburbs of Mwanza City. The roads, which have a design life of 100 years, were completed over nine years ago and consist of the following structure: 8m width; 20cm gravel sub-base layer; 20cm sand bedding, 20cm x 20cm x 15cm (thickness) cobblestones. The road structure was performing well and had largely been maintenance-free to date.

Participants in the visit noted the extensive use of rock which was an abundantly available local material. The local communities also benefitted from the projects through supply of the cobblestones which were prepared using labour-based methods.



3.8.2 Dar es Salaam

Participants visited three roads in the Temeke Municipal Council area. Upgrading works were ongoing on the primary routes in an urban setting, improving the roads from gravel to surfaced standard. The projects are being funded under a special project being supported by the World Bank. On one of the projects a concrete pavement was provided over a section which had sub-surface water problems. Sub-surface drains were installed.

The following aspects of the projects, amongst others, generated debate amongst the participants: location of drain outfalls and types, design of drain walls with seemingly inadequate reinforcement, compaction close to structures, construction zone HSE issues, lack of traffic calming measures in built-up areas.



3.9 Recommendations on Way Forward

3.9.1 Discussion with TARURA Coordinators

Following the conclusion of the workshops the GEM Adviser and the TARURA Coordinators discussed the way forward and this was defined as follows:

- TARURA Co-ordinators would carry the recommendations of the workshops to senior management in the workshop report.
- An application was likely to be made for TARURA to join the GEM Project.
- The following options were to be considered in structuring the project:
 - Option 1: Select ONE district and part of its network for monitoring;
 - Option 2: Select TWO districts, one with weak RAM capacity and the other with strong RAM capacity;
 - Select TWO or THREE districts in each of the North and South regions of the country;

- Option 4: Select ONE Region for monitoring (all districts).
- Following acceptance to join the GEM project the following activities were seen as key:
 - Carrying out baseline activities – road inventorying, condition surveys, socio-economic data collection, data analysis, detailed RAM assessment.
 - Preparation and implementation of a RAM Capacity Development Plan.
 - Participating in GEM programmes and activities.

3.9.2 Recommendation on TARURA joining the GEM Project

It is recommended that TARURA be accepted as a new member of the GEM project.

The organisation has identified the benefits of participating in the project and are also conscious of the potential for knowledge sharing with other participating countries especially emanating from their relatively successful implementation of DROMAS.

3.9.3 Recommendations on GEM Project Roll-out Approach

The support to Tanzania (TARURA) provided pointers towards the rolling out of the GEM Project to other countries as follows:

- In introducing the project into a new country it is important to obtain early buy-in and support from stakeholders and senior management of road agencies. High level meetings were held with the Executive Director of TARURA which resulted in clear instructions to subordinates to participate in the RAM self-assessment exercise.
- In countries where local authorities are responsible for rural roads, support should be sought from the parent local government ministry, councillors and senior managers right from the onset.
- It is important to point out to potential GEM participants that the project does not provide funds for works etc. Road agencies will be expected to provide own budgets towards improving their RAM capacity. Road agency staff easily default to associating any donor funded project with provision of free funding for various aspects of road provision, maintenance and management.
- Notwithstanding the above, consideration should be given by AfCAP to providing training and secondment opportunities for participating road agencies staff's staff. This can be achieved through participating in training courses in South Africa's Western Cape area and elsewhere.
- The GEM Advisory team plays a crucial role in assisting the potential participants to appreciate the importance of adopting RAM approaches. Workshops similar to those held in Tanzania can be a very useful tool in quickly bringing road agencies to understand the principles of RAM. The workshops must not be prescriptive, nor should they be seen as training sessions. Greater benefits will be yielded from taking a participatory approach. It is recommended that similar workshops be held in countries expressing interest in joining the GEM project.

- Whilst the GEM project is seen as a research project, the response of road agency staff has been that of immediate use of the principles of RAM in day to day work, and the expressing of the desire to share knowledge amongst the participating countries. It is recommended that the practical elements of the GEM project be brought to the forefront and the agencies be assisted to share knowledge through webinars, bilateral country visits, chat groups etc.
- The inclusion of Tanzania in the GEM project can probably be achieved under the current management structure of the CDS advisory team, albeit with some additional resources added to the existing contract. These would need to be taken from the existing budget allocated by ReCAP to Tanzania and would therefore require a re-prioritisation of activities by Tanzania.
- The inclusion of countries in addition to Tanzania may require a modification to the advisory team structure as regular travelling to all countries by the current team may not be feasible. One option that has been suggested is to recruit “local” GEM Advisers in each of the participating countries, who would support the participating roads agencies. The local advisers would be supported by the current GEM team, acting as “trainers of trainers”.

Annex A: Visits Itineraries

1st Visit - October 2017

Day	Activity	Participants
Mon. 16 October 17	Travel to Dar es Salaam	C. Bopoto
Tues. 17 October 17	am. Travel to Dodoma Meetings in Dodoma with TARURA <ul style="list-style-type: none"> • Objectives of visit • Overview of GEM • Review of AM Assessment Procedure • Brief discussions on Self-Assessment Results pm. Travel to Kilindi District	C. Bopoto TARURA staff, relevant stakeholders, C Bopoto TARURA representative, C Bopoto
Wed. 18 October 17	Working meetings/interactions at Kilindi District Offices <ul style="list-style-type: none"> • Objectives of visit • Overview of GEM • Overview of GEM Project • Brief on Road Condition Assessment and Asset Valuation • Review of AM Assessment Procedure • Presentation of Self-Assessment Results 	TARURA staff, Kilindi district staff, relevant stakeholders, C Bopoto
Thurs. 19 October 17	Working meetings/interactions at Kilindi District Offices <ul style="list-style-type: none"> • District AM Self-Assessment Update and discussion of results • Identification of AM Gaps • Prepare draft Work Plan Site Visit to ongoing project/s.	TARURA staff, Kilindi district staff, relevant stakeholders, C Bopoto TARURA staff, Kilindi district staff, C Bopoto
Fri. 20 October 17	am. Wrap up meeting at Kilindi District Offices pm. Travel to Dar es Salaam and Depart	TARURA staff, Kilindi district staff, C Bopoto C. Bopoto

2nd Visit – November 2017

Day	Activity	Participants
Tues. 05 October 17	Travel to Mwanza	C. Bopoto, TARURA Staff
Wed. 06 Dec to Fri. 08 Dec.	Working meetings/interactions/site visits in Mwanza <ul style="list-style-type: none"> • Objectives of visit • Overview of GEM • Overview of GEM Project • Brief on Road Condition Assessment and Asset Valuation • Review of AM Assessment Procedure • Presentation of Districts Self-Assessment Results • District AM Self-Assessment Update and discussion of results • Identification of AM Gaps • Prepare draft Work Plan • Site Visits 	TARURA staff, relevant stakeholders, C Bopoto
Sat. 09 Dec – Sun 10 Dec.	Travel to Dar es Salaam	C. T. Bopoto, TARURA coordinating staff
Mon. 11 Dec – Wed 13 Dec	Working meetings/interactions/site visits in Dar es Salaam <ul style="list-style-type: none"> • Objectives of visit • Overview of GEM • Overview of GEM Project • Brief on Road Condition Assessment and Asset Valuation • Review of AM Assessment Procedure • Presentation of Districts Self-Assessment Results • District AM Self-Assessment Update and discussion of results • Identification of AM Gaps • Prepare draft Work Plan • Site Visits 	TARURA staff, relevant stakeholders, C Bopoto
Thurs. 14 Dec.	am. Wrap up meeting at TARURA Offices pm. Depart	TARURA staff, C Bopoto C. Bopoto

Annex B: Workshop Participants

Mwanza Workshop

THE UNITED REPUBLIC OF TANZANIA
TRAINING FOR GROWTH THROUGH EFFECTIVE ROAD ASSET MANAGEMENT
MWANZA REGIONAL'S CONFERENCE HALL

REGISTRATION FORMS DATE: 6/12/2017

S/N	NAME	NAME OF INSTITUTION	POSITION	SALARY SCALE	EMAIL ADDRESS	SIGNATURE
1.	Eng. CHARLES T. BOLOTO	AFAP-GEM	RAM ENG.	—	charlesboloto@yahoo.co.uk	
2.	Eng. KUNYARANYARA EMS	TARURA RC-SIHINYANGA	REGIONAL COORD.	LSSE	ezikel.kunyaramyara@tarura.go.tz	
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15.	Eng. Francisco L. Magoti	TARURA-MWANZA	Regional coordinator	TGS F	magoti177@yahoo.com	

Dar es Salaam Workshop

THE UNITED REPUBLIC OF TANZANIA
 TRAINING FOR GROWTH THROUGH EFFECTIVE ROAD ASSET MANAGEMENT
 IDD NYUNDO CONFERENCE HALL - TEMEKE MUNICIPAL COUNCIL

REGISTRATION FORMS

DATE: 11th Dec, 2017

S/N	NAME	NAME OF INSTITUTION	POSITION	SALARY SCALE	EMAIL ADDRESS	SIGNATURE
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Annex C: Completed RAM Self-Assessment Questionnaire: MWANZA

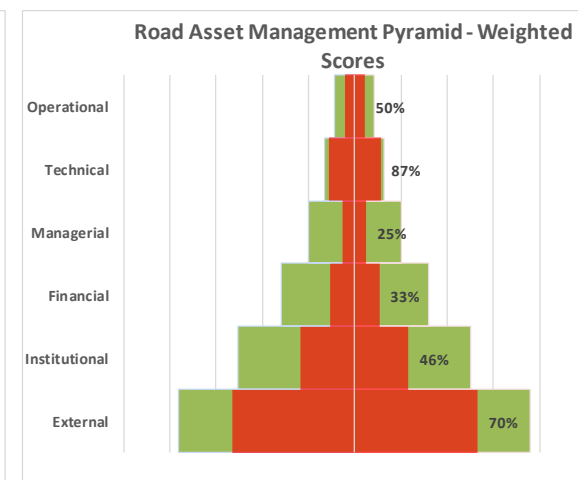
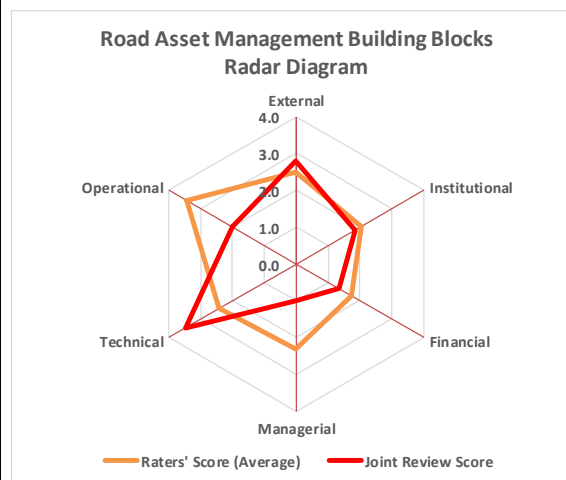
AFCPA GEM Project: Road Asset Management Assessment: Tanzania - TARURA, MWANZA Workshop

Building Block	#	Item Assessed	Raters' Score (Average)	Joint Review Score
External	1.1	National policy for rural roads	3.3	4.0
	1.2	Existence of rural road maintenance strategy	2.0	3.0
	1.3	Stakeholder consultation	2.9	2.9
	1.4	Tabling of budgets	2.9	4.0
	1.5	Reporting back to stakeholders	2.0	1.0
	1.6	Involvement in programmes at local level	1.8	1.8
Institutional	2.1	AM policy development	2.5	1.0
	2.2	Level of service - in existence	1.7	1.0
	2.3	Level of service - in use	2.3	1.0
	2.4	Emergency response plan	3.0	3.0
	2.5	Staff roles and responsibilities	1.6	2.0
	2.6	Staff training and capacity building	2.0	4.0
	2.7	Staff salaries	1.3	1.0
Financial	3.1	Provision of road maintenance funding	2.1	2.0
	3.2	Budget funding against perceived need	1.1	1.0
	3.3	Asset valuation	1.6	0.0
	3.4	Budget funding - asset value	1.0	0.0
	3.5	Financial forecasting	1.3	1.0
	3.6	Accounting system	3.4	4.0
Managerial	4.1	AM system	2.8	2.0
	4.2	Maintenance intervention levels	2.3	0.0
	4.3	Maintenance plans - existence	3.3	1.0
	4.4	Maintenance plans - methods used	2.4	1.0
	4.5	Maintenance backlog	1.7	2.0
	4.6	Traffic forecasting	2.1	0.0
	4.7	Capital expenditure - basis for	1.7	1.0
Technical	5.1	Road referencing system - existence	2.1	4.0
	5.2	Road inventory - existence	2.3	2.3
	5.3	Road inventory data	3.0	4.0
	5.4	Road condition assessment	2.1	4.0
	5.5	Asset utilisation	2.7	3.0
Operational	6.1	Service delivery mechanisms	3.3	4.0
	6.2	Maintenance planning	3.8	0.0
	6.3	Reporting	3.3	0.0
	6.4	Auditing	3.3	4.0

Assessment Scoring Criteria:	
< 0	Not developed
0-1	Minimum
1-2	Core
2-3	Mature
3-4	Advanced

Weighting Ranking	Building Block	Max. Possible Score	Raters' Score (Average)	Joint Review Score	Weighting
1	External	4	2.5	2.8	0.38
2	Institutional	4	2.1	1.9	0.25
3	Financial	4	1.7	1.3	0.16
4	Managerial	4	2.3	1.0	0.10
5	Technical	4	2.4	3.5	0.06
6	Operational	4	3.4	2.0	0.04
RAM Assessment Score				2.2	
RAM Rating				Mature	
Rural Access Sustainability Index (RASI)				0.54	

(Scale: 0 - 1)



ROAD ASSET SELF ASSESSMENT QUESTIONNAIRE: Mwanza Workshop	
TANZANIA RURAL AND URBAN ROAD AGENCY	Dec-17
BUILDING BLOCK 1: EXTERNAL	
<p>Key objective: Facilitate delivery of a broad range of benefits to rural communities through effective interaction with external stakeholders.</p> <p>Element: AM policy and strategy</p> <p>Issue: The existence of an AM policy that is:</p> <ul style="list-style-type: none"> • Relevant to the rural transport sector; • Supported by senior decision makers; • Adopted at the highest level in government. <p>Element: Stakeholder engagement</p> <p>Issue: Engagement with stakeholders by means of informed consultations and a culture of open communications and knowledge sharing in order to:</p> <ul style="list-style-type: none"> • Understand their needs and expectations by helping to identify local requirements, alternatives and solutions to problems; • Lobby political support for adequate AM plans and related maintenance funding; • Influence the development of the district’s AM strategies; • Communicate the district’s programmes and targets; • Assess how the district’s performance is rated by stakeholders. 	FINAL SCORE C/F TO SUMMARY

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
1.1 (a)	Is there a national policy for rural roads which has been adopted by the central government?	YES			1				4
1.1 (b)	Does the national policy define the roles and responsibilities of the agencies responsible for managing rural roads?	YES				1			
1.1 (c)	Does the national policy identify funding sources that are adequate for maintenance of the rural road network?	YES					1		
1.1 (d)	Does the national policy define stakeholder groups to be consulted in the management of rural roads?	YES						1	
1.2 (a)	Is there a national policy for maintenance of rural roads?	YES			1				3
1.2 (b)	Does the rural roads maintenance policy require the development of a strategy for undertaking sustainable rural road maintenance?	YES					1		
1.2 (c)	Does the rural roads maintenance strategy ensure that rural road improvement is linked to a simultaneous commitment to the annual maintenance costs?	YES						1	
1.2 (d)	Does the rural roads maintenance strategy require the rural road agencies to minimise the total costs of ownership by adopting whole-life approaches (leading to optimum balance between capital and recurrent budgets)?	NO							

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
1.3 (a)	Does the agency generally communicate with road users, local inhabitants and local businesses/stakeholders?	YES			1				2
1.3 (b)	Does the agency conduct consultations with members of the public (road users, local inhabitants and local businesses) at least annually?	YES				1			
1.3 (c)	Does the agency use a range of techniques to communicate with stakeholders e.g. surveys, public notices, community radio, media releases, newsletters, telephone hotlines and social media?	NO							
1.3 (d)	Does the agency have developed strategies and guidelines for community consultation and information dissemination?	NO							
1.4 (a)	Does the agency actively seek participation of local stakeholders and road users in the preparation of strategic plans, programmes and budgets for road works?	YES			1				4
1.4 (b)	Does the agency present its strategic plans at Ministry/ Parliament meetings to map out plans for short, medium and long-term programmes?	YES					1		
1.4 (c)	Does the agency actively participate in inter-sectoral/ministerial and inter-agency district development programmes at regional and national level through established structures?	YES						1	

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
1.4 (d)	Does the agency table road budgets at ministry meetings before implementing works?	YES							1
1.5 (a)	Does the agency table periodic roadworks progress reports to the Ministry for information?	YES			1				2
1.5 (b)	Does the agency maintain a public display of road works acquittal reports for accessing by the public?	YES				1			
1.6 (a)	Does the agency actively communicate with the local government ministry, districts and the Road Fund through established structures on road preservation matters?	YES			1				2
1.6 (b)	Does the agency participate through established structures at regional and national level in development programmes for other sectors?	YES				1			

BUILDING BLOCK 2: INSTITUTIONAL										
Key objective:		Successful implementation of road asset preservation practice through support of the district executives, an adequate organisational structure, adequate number of trained staff.							FINAL SCORE C/F TO SUMMARY	
Element:		AM policy and strategy								
Issue:		<ul style="list-style-type: none"> <input type="checkbox"/> The existence of an AM policy and strategy that is supported by senior leadership; <input type="checkbox"/> Need to recruit and retain capable staff by offering competitive salaries; <input type="checkbox"/> An appropriate organisational structure with an adequate complement of appropriately trained staff with the necessary core competencies; <input type="checkbox"/> The extent to which staff involved in the process understand and support it and are willing to contribute and improve it; <input type="checkbox"/> KPIs that can be used to measure the quality of the service the agency provides; <input type="checkbox"/> Means (funding) for outsourcing of all strategic, non-core activities (e.g. instrumented surveys such as roughness and deflection measurements). 								

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
2.1 (a)	Does the agency have an informal AM policy and associated strategy?	YES			1				
2.1 (b)	Does the agency have a formal AM policy?	NO							1
2.1 (c)	Does the agency's AM policy align with its corporate vision and mission?	NO							

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
2.1 (d)	Does the agency's AM policy take into account stakeholder needs and expectations?	NO							
2.2(a)	Have the basic levels of service been defined?	YES			1				
2.2 (b)	Are the differing requirements of stakeholders understood?	NO							1
2.2 (c)	Are stakeholders/road users consulted when determining the levels of service?	NO							
2.2 (d)	Is the level of service consultation strategy developed and implemented?	NO							
2.3 (a)	Is the contribution of the road network to the road agency's objectives defined?	YES			1				1
2.3 (b)	Are the levels of service linked to measures of asset performance?	NO							
2.3 (c)	Is the cost to fulfil the level of service requirements known?	NO							
2.3 (d)	Are the levels of service integral to decision making and business planning?	NO							
2.4 (a)	Are emergency responses understood by key members of staff?	YES			1				3
2.4 (b)	Does the agency have a formal emergency response plan?	NO	Instruction via letter						
2.4 (c)	Is the safety of infrastructure routinely assessed?	YES					1		
2.4 (d)	Are formal debriefs given to appropriate staff after severe damage to infrastructure as a result of a traffic accident (e.g. bridge strike) or climate induced event (e.g. washout)?	YES						1	

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
2.5 (a)	Does the agency's organisational structure identify roles, responsibilities and competencies of key staff, aligned with its AM policy, strategies, objectives and plans?	NO		0					
2.5 (b)	Are the roles, responsibilities and organisational commitment for AM documented and communicated to all relevant people?	NO							
2.5 (c)	Does the agency have an adequate complement of appropriately qualified staff with designated responsibilities to undertake its AM mandate?	YES					1		
2.5 (d)	Is the agency able to outsource its non-core activities (e.g. instrumented surveys such as roughness and deflections)?	YES						1	
2.6 (a)	Does the agency offer training opportunities for staff?	YES			1				
2.6 (b)	Does AM specific training occur for primary staff?	YES				1			
2.6 (c)	Has the agency implemented an on-going training programme to address required AM competencies?	YES					1		
2.6 (d)	Is there a formal AM capacity building programme which is routinely monitored?	YES						1	
2.7 (a)	Are agency engineer salaries less than 50% of comparable private sector positions?	YES							
2.7 (b)	Are agency engineer salaries 50-80% of comparable private sector positions?	NO							
									2
									4
									0

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
2.7 (c)	Are agency salaries roughly the same as comparable private sector positions?	NO							
2.7 (d)	Are RA salaries greater than comparable private sector positions?	NO							

BUILDING BLOCK 3: FINANCIAL									
Key objective: The achieve stable, adequate and sustainable funding for maintenance. Element: Financial arrangements Issue: <ul style="list-style-type: none"> <input type="checkbox"/> A stable, adequate and sustainable source(s) of funding for maintenance; <input type="checkbox"/> Annual asset valuation of road infrastructure assets; <input type="checkbox"/> Costing framework for determining unit costs of works; <input type="checkbox"/> Budgeting and programming processes; <input type="checkbox"/> Prioritised maintenance investment plan; <input type="checkbox"/> Risk strategy to address potential consequences of inadequate funding (e.g. emergency response); <input type="checkbox"/> Financial accounting and auditing of expenditure. 									
									FINAL SCORE C/F TO SUMMARY

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
3.1 (a)	Does the agency depend only on the consolidated fund for road maintenance?	NO			1				
3.1 (b)	Is the funding received from the consolidated fund related to road asset condition and performance?	NO							2
3.1 ©	Does the agency get a fixed share of its maintenance funding requirement from a Road Fund and/or central government?	YES					1		

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
3.1 (d)	Does the agency get a variable share of its maintenance funding requirement from the Road Fund and/or central government that is related to road asset condition and performance?	NO							
3.2 (a)	Is the percentage of the budgeted funding for routine and periodic maintenance obtained < 30 % of that required?	YES			1				
3.2 (b)	Is the percentage of the budgeted funding obtained 30% - 59% of that required?	NO							1
3.2 ©	Is the percentage of the budgeted funding obtained 60% - 89% of that required?	NO							
3.2 (d)	Is the percentage of the budgeted funding obtained 90% - 100% of that required?	NO							
3.3 (a)	Does the agency carry out asset valuation?	NO		0					
3.3 (b)	If the agency carries out asset valuation, is the value of the agency's road asset decreasing?	NO							
3.3 ©	If the agency carries out asset valuation, is the value of the agency's road asset stable?	NO							0
3.3 (d)	If the agency carries out asset valuation, is the value of the agency's road asset increasing?	NO							
3.4 (a)	Is the percentage of the maintenance funding obtained? 0.1% of the asset value of the road network?	N/A							0

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
3.4 (b)	Is the percentage of the maintenance funding obtained? 0.5% of the asset value of the road network?	N/A							
3.4 ©	Is the percentage of the maintenance funding obtained? 1 % of the asset value of the road network?	N/A							
3.4 (d)	Is the percentage of the maintenance funding obtained? 1.5% of the asset value of the road network?	N/A							
3.5 (a)	Does the agency carry out annual and multi-annual financial forecasting for maintenance and rehabilitation works?	YES			1				
3.5 (b)	Are the financial forecasts for maintenance works and rehabilitation works based on current Asset Management Plan (AMP) outputs?	NO							
3.5 ©	Are the financial forecasts for maintenance works based on current comprehensive AMPs with reasoned supporting assumptions?	NO							1
3.5 (d)	Are the financial forecasts for maintenance and rehabilitation works based on current comprehensive advanced AMPs with detailed supporting assumptions and high confidence in accuracy?	NO							
3.6 (a)	Does the agency operate an accounting system?	YES			1				4

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
3.6 (b)	Are the annual accounts finalised within the first quarter of the following year?	YES				1			
3.6 ©	Are the accounts audited annually?	YES					1		
3.6 (d)	Are the accounts published annually?	YES						1	

BUILDING BLOCK 4: MANAGERIAL						
<p>Key objective: Successful implementation of road asset preservation practice through support of the district executives, an adequate organisational structure, adequate number of trained staff</p> <p>Element: Network management</p> <p>Issue:</p> <ul style="list-style-type: none"> ☐ Use of appropriate AM system that contains: <ul style="list-style-type: none"> ○ Network definition (road and bridge inventory information), ○ Network condition (roads and bridges) ○ Network usage (traffic) ○ Financial/cost information on works activities ○ Storage, update, analysis and reporting of data collected ☐ Appropriate levels of service and intervention standards that determine gaps in network performance? ☐ Prioritised annual, medium (3- 5yrs) and long term (> 5 yrs) maintenance and development plans and related investment plans? ☐ A risk management strategy (for unfunded works); ☐ Annual reporting on the overall management of the road asset (AM plan); ☐ Demand forecasting. 						FINAL SCORE C/F TO SUMMARY

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
4.1 (a)	Does the roads agency have an AM system(s) in place which can store current and historical asset inventory, condition and asset utilization data (e.g. traffic)?	YES			1				
4.1 (b)	Does the AM system enable treatment cost and historical maintenance information to be stored and accessed?	YES				1			2
4.1 ©	Does the AM system allow for the comparison of the current condition of assets with intervention levels to determine maintenance requirements?	NO							
4.1 (d)	Can the AM system facilitate the prioritisation of road sections requiring maintenance?	NO							
4.2 (a)	Has the road agency developed intervention levels for all its principal asset types which require periodic maintenance (carriageway, shoulders, bridges, culverts)?	NO			0				0
4.2 (b)	Are the intervention levels directly associated with defined levels of service?	NO							
4.2 (c)	Have the intervention levels been determined using an economic analysis.	NO							
4.2 (d)	Have the intervention levels been determined using socio-economic-political (i.e. multi-criteria) analysis?	NO							
4.3 (a)	Does the agency produce annual maintenance and development plans?	YES				1			1

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
4.3 (b)	Does the agency produce annual prioritised maintenance and development plans?	NO							
4.3 (c)	Does the agency provide prioritised medium term (3-5 year) maintenance plans?	NO							
4.3 (d)	Does the agency provide prioritised long term (> 5 year) maintenance plans?	NO							
4.4 (a)	Does the agency keep records of maintenance and rehabilitation work activities?	YES			1				
4.4 (b)	Is maintenance and rehabilitation planned and prioritised according to asset condition?	NO							1
4.4 (c)	Is maintenance and rehabilitation prioritised using a cost benefit approach?	NO							
4.4 (d)	Is maintenance and rehabilitation expenditure prioritised using techniques which consider economic and social benefit?	NO							
4.5 (a)	Does the agency keep a record of maintenance works backlog?	YES			1				
4.5 (b)	Does the agency have a strategy to reduce maintenance backlog based on a percentage of the available development budget?	YES					1		2
4.5 (c)	Does the agency prioritise the reduction of maintenance backlog using an economic analysis process?	NO							

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
4.5 (d)	Does the agency prioritise the reduction of maintenance backlog using risk management techniques?	NO							
4.6 (a)	Does the agency carry out basic demand (traffic) forecasting?	NO		0					
4.6 (b)	Are the forecasts of traffic demand based on traffic counts carried out in the last 5 years using robust economic indicators (e.g. GDP)?	NO							0
4.6 ©	Is traffic demand forecast based on mathematical analysis of historical trends?	NO							
4.6 (d)	Are primary economic factors used when forecasting demand?	NO							
4.7 (a)	Does the agency schedule capital projects using staff judgement, taking into consideration government policy and political drivers?	YES			1				
4.7 (b)	Are projects identified using input from operational staff, estimates of service lives, traffic demand modelling and accident analysis?	NO							1
4.7 ©	Are major capital projects for the next 10 years identified and prioritised taking into account socio-political-economic requirements?	NO							
4.7 (d)	Does the agency use advanced formalised socio- economic-political decision-making techniques to identify major capital expenditure?	NO							

BUILDING BLOCK 5: TECHNICAL					
Key objective: Identification and description of road assets including inventory, condition data and performance monitoring; and availability of data to network managers. Element: Road network database Issue: <ul style="list-style-type: none"> <input type="checkbox"/> Existence of a road referencing system; <input type="checkbox"/> Existence of a classified road inventory; <input type="checkbox"/> Standard procedures for developing a road inventory, data collection and performance monitoring; <input type="checkbox"/> Use of asset register to store all road asset information. 					
					FINAL SCORE C/F TO SUMMARY

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT							
5.1 (a)	Does the agency have a road referencing system based on routes and nodes between centres of population?	YES			1					4
5.1 (b)	Is the road referencing system based on road sections (< 1 km) with homogeneous characteristics?	YES				1				
5.1 (c)	Is the road referencing system based on sub-sections (homogenous sections of 200 m lengths)?	YES					1			
5.1 (d)	Is the road referencing system GIS based?	YES						1		
5.2 (a)	Does the agency have an item inventory recording basic road surface types (earth, gravel or sealed)?	YES			1					2
5.2 (b)	Does the agency undertake an inventory of all principal assets (carriageway, shoulders, bridges, culverts, side drains)?	YES				1				
5.2 (c)	Does the inventory include the service lives of all principal assets?	NO								
5.2 (d)	Does the agency have deterioration models for all principal assets?	NO								
5.3 (a)	Is the road inventory based on assumptions or incomplete data?	YES			1					4

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
5.3 (b)	Is there a system of systematic and documented data collection for all principal assets (carriageway, shoulders, bridges, culverts, side drains) on a road by road basis?	YES				1			
5.3 (c)	Is there an established system of systematic and documented data collection for all principal assets (carriageway, shoulders, bridges, culverts, side drains) on a section basis?	YES					1		
5.3 (d)	Is there an established system of systematic and documented data collection for all principal assets on a sub-section basis?	YES						1	
5.4 (a)	Does the agency carry out annual visual condition assessment surveys for carriageways, shoulders of gravel and earth roads?	YES			1				
5.4 (b)	Are the visual condition assessments of gravel and earth carried out in accordance with well documented, standardised procedures?	YES				1			3
5.4 (c)	Does the agency measure gravel loss?	NO							
5.4 (d)	Are the results of the gravel and earth road condition assessment recorded in a computerised AM system?	YES						1	
5.5 (a)	Does the agency estimate asset utilization (traffic) on its network?	YES			1				3

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
5.5 (b)	Does the agency measure asset utilization (traffic) annually on its major roads?	YES				1			
5.5 (c)	Does the agency project asset utilization across its network from annual measures of utilization of a sampled number of roads	NO							
5.5 (d)	Does the agency assess bottlenecks on its network?	YES						1	

BUILDING BLOCK 6: OPERATIONAL					
Key objective: Efficient operations at district level including planning and scheduling of maintenance, procurement of service providers and technical compliance. Element: Procurement of services Issue: <ul style="list-style-type: none"> <input type="checkbox"/> Appropriate type of contract; <input type="checkbox"/> Outsourcing of strategic, non-core activities; <input type="checkbox"/> Maintenance scheduling of works; <input type="checkbox"/> Auditing of maintenance works. 					
					FINAL SCORE C/F TO SUMMARY

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
6.1 (a)	Are service delivery roles within the agency clearly allocated?	YES			1				
6.1 (b)	Does the agency have provision for outsourcing of non-core activities?	YES				1			
6.1 (c)	Are competitive tendering practices used?	YES					1		4
6.1 (d)	Are service delivery mechanisms reviewed annually to identify risks, benefits and costs of various outsourcing options?	YES						1	
6.2 (a)	Does the agency plan day to day maintenance activities?	NO		0					
6.2 (b)	Are the needs of stakeholders considered when scheduling day to day maintenance?	NO							
6.2 ©	Is the planning of day to day maintenance optimised in terms of the availability and use of resources?	NO							0
6.2 (d)	Is day to day planning of maintenance optimised by considering the availability of resources and impacts on road users?	NO							
6.3 (a)	Does the agency prepare day to day reports on road maintenance activities?	NO		0					
6.3 (b)	Does the agency prepare weekly reports on road maintenance activities?	NO							0
6.4 (a)	Does the agency undertake technical audits of designs?	YES			1				4

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
6.4 (b)	Does the agency regularly undertake technical audits of maintenance, construction and rehabilitation works?	YES				1			
6.4 (c)	Does the agency provide guidelines for undertaking the road audits?	YES					1		
6.4 (d)	Does the RA require service suppliers to be ISO 9000 certified?	YES						1	

Annex D: Completed RAM Self-Assessment Questionnaire: DAR ES SALAAM

AFCPA GEM Project: Road Asset Management Assessment: Tanzania - TARURA, DAR ES SALAAM Workshop

Building Block	#	Item Assessed	Rater's Score (Baseline)	Joint Review Score
External	1.1	National policy for rural roads	3.8	2
	1.2	Existence of rural road maintenance strategy	2.3	4
	1.3	Stakeholder consultation	1.7	1
	1.4	Tabling of budgets	1.5	2
	1.5	Reporting back to stakeholders	1.3	1
	1.6	Involvement in programmes at local level	2.0	1
Institutional	2.1	AM policy development	2.0	0
	2.2	Level of service - in existence	1.5	1
	2.3	Level of service - in use	1.3	1
	2.4	Emergency response plan	2.3	4
	2.5	Staff roles and responsibilities	1.5	1
	2.6	Staff training and capacity building	2.0	1
	2.7	Staff salaries	1.3	1
Financial	3.1	Provision of road maintenance funding	1.5	2
	3.2	Budget funding against perceived need	3.3	1
	3.3	Asset valuation	1.0	0
	3.4	Budget funding - asset value	0.0	0
	3.5	Financial forecasting	2.0	0
	3.6	Accounting system	3.7	4
Managerial	4.1	AM system	1.5	3
	4.2	Maintenance intervention levels	1.0	0
	4.3	Maintenance plans - existence	2.8	3
	4.4	Maintenance plans - methods used	2.5	1
	4.5	Maintenance backlog	1.8	2
	4.6	Traffic forecasting	2.0	0
	4.7	Capital expenditure - basis for	1.8	1
Technical	5.1	Road referencing system - existence	1.3	3
	5.2	Road inventory - existence	2.3	2
	5.3	Road inventory data	1.3	3
	5.4	Road condition assessment	1.3	3
	5.5	Asset utilisation	2.3	3
Operational	6.1	Service delivery mechanisms	2.8	3
	6.2	Maintenance planning	2.8	0
	6.3	Reporting	1.3	1
	6.4	Auditing	2.3	3

Assessment Scoring Criteria:

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

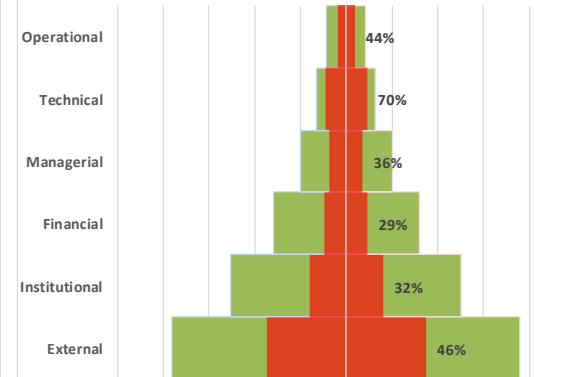
Weighting Ranking

Weighting Ranking	Building Block	Max. Possible Score	Rater's Score (Baseline)	Joint Review Score	Weighting
1	External	4	2.1	1.8	0.38
2	Institutional	4	1.7	1.3	0.25
3	Financial	4	1.9	1.2	0.16
4	Managerial	4	1.9	1.4	0.10
5	Technical	4	1.7	2.8	0.06
6	Operational	4	2.3	1.8	0.04
RAM Assessment Score				1.6	1.00
RAM Rating				Core	
Rural Access Sustainability Index (RASI)				0.40	(Scale: 0 - 1)

Road Asset Management Building Blocks Radar Diagram



Road Asset Management Pyramid - Weighted Scores



ROAD ASSET SELF ASSESSMENT QUESTIONNAIRE: Dar es Salaam Workshop										
TANZANIA RURAL AND URBAN ROAD AGENCY					Dec-17					
BUILDING BLOCK 1: EXTERNAL										
Key objective:		Facilitate delivery of a broad range of benefits to rural communities through effective interaction with external stakeholders.								FINAL SCORE C/F TO SUMMARY
Element:		AM policy and strategy								
Issue:		The existence of an AM policy that is: <ul style="list-style-type: none"> • Relevant to the rural transport sector; • Supported by senior decision makers; • Adopted at the highest level in government. 								
Element:		Stakeholder engagement								
Issue:		Engagement with stakeholders by means of informed consultations and a culture of open communications and knowledge sharing in order to: <ul style="list-style-type: none"> • Understand their needs and expectations by helping to identify local requirements, alternatives and solutions to problems; • Lobby political support for adequate AM plans and related maintenance funding; • Influence the development of the district’s AM strategies; • Communicate the district’s programmes and targets; • Assess how the district’s performance is rated by stakeholders. 								

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
1.1 (a)	Is there a national policy for rural roads which has been adopted by the central government?	YES			1				2

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
1.1 (b)	Does the national policy define the roles and responsibilities of the agencies responsible for managing rural roads?	NO							
1.1 (c)	Does the national policy identify funding sources that are adequate for maintenance of the rural road network?	NO							
1.1 (d)	Does the national policy define stakeholder groups to be consulted in the management of rural roads?	YES							1
1.2 (a)	Is there a national policy for maintenance of rural roads?	YES			1				
1.2 (b)	Does the rural roads maintenance policy require the development of a strategy for undertaking sustainable rural road maintenance?	YES				1			
1.2 (c)	Does the rural roads maintenance strategy ensure that rural road improvement is linked to a simultaneous commitment to the annual maintenance costs?	YES					1		
1.2 (d)	Does the rural roads maintenance strategy require the rural road agencies to minimise the total costs of ownership by adopting whole-life approaches (leading to optimum balance between capital and recurrent budgets)?	YES							1
									4

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
1.3 (a)	Does the agency generally communicate with road users, local inhabitants and local businesses/stakeholders?	YES			1				
1.3 (b)	Does the agency conduct consultations with members of the public (road users, local inhabitants and local businesses) at least annually?	NO							
1.3 (c)	Does the agency use a range of techniques to communicate with stakeholders e.g. surveys, public notices, community radio, media releases, newsletters, telephone hotlines and social media?	NO							1
1.3 (d)	Does the agency have developed strategies and guidelines for community consultation and information dissemination?	NO							
1.4 (a)	Does the agency actively seek participation of local stakeholders and road users in the preparation of strategic plans, programmes and budgets for road works?	NO			0				
1.4 (b)	Does the agency present its strategic plans at Ministry/ Parliament meetings to map out plans for short, medium and long-term programmes?	YES					1		2

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
1.4 (c)	Does the agency actively participate in inter-sectoral/ministerial and inter-agency district development programmes at regional and national level through established structures?	NO	Varies according to region, not standardised						
1.4 (d)	Does the agency table road budgets at ministry meetings before implementing works?	YES						1	
1.5 (a)	Does the agency table periodic roadworks progress reports to the Ministry for information?	YES			1				1
1.5 (b)	Does the agency maintain a public display of road works acquittal reports for accessing by the public?	NO							
1.6 (a)	Does the agency actively communicate with the local government ministry, districts and the Road Fund through established structures on road preservation matters?	YES			1				1
1.6 (b)	Does the agency participate through established structures at regional and national level in development programmes for other sectors?	NO							

BUILDING BLOCK 2: INSTITUTIONAL										
Key objective:		Successful implementation of road asset preservation practice through support of the district executives, an adequate organisational structure, adequate number of trained staff.							FINAL SCORE C/F TO SUMMARY	
Element:		AM policy and strategy								
Issue:		<ul style="list-style-type: none"> ☐ The existence of an AM policy and strategy that is supported by senior leadership; ☐ Need to recruit and retain capable staff by offering competitive salaries; ☐ An appropriate organisational structure with an adequate complement of appropriately trained staff with the necessary core competencies; ☐ The extent to which staff involved in the process understand and support it and are willing to contribute and improve it; ☐ KPIs that can be used to measure the quality of the service the agency provides; ☐ Means (funding) for outsourcing of all strategic, non-core activities (e.g. instrumented surveys such as roughness and deflection measurements). 								

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
2.1 (a)	Does the agency have an informal AM policy and associated strategy?	NO		0					
2.1 (b)	Does the agency have a formal AM policy?	NO							0
2.1 (c)	Does the agency's AM policy align with its corporate vision and mission?	NO							

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
2.1 (d)	Does the agency's AM policy take into account stakeholder needs and expectations?	NO							
2.2(a)	Have the basic levels of service been defined?	YES			1				1
2.2 (b)	Are the differing requirements of stakeholders understood?	NO							
2.2 (c)	Are stakeholders/road users consulted when determining the levels of service?	NO							
2.2 (d)	Is the level of service consultation strategy developed and implemented?	NO							
2.3 (a)	Is the contribution of the road network to the road agency's objectives defined?	YES			1				1
2.3 (b)	Are the levels of service linked to measures of asset performance?	NO							
2.3 (c)	Is the cost to fulfil the level of service requirements known?	NO							
2.3 (d)	Are the levels of service integral to decision making and business planning?	NO							
2.4 (a)	Are emergency responses understood by key members of staff?	YES			1				4
2.4 (b)	Does the agency have a formal emergency response plan?	YES				1			
2.4 (c)	Is the safety of infrastructure routinely assessed?	YES					1		

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
2.4 (d)	Are formal debriefs given to appropriate staff after severe damage to infrastructure as a result of a traffic accident (e.g. bridge strike) or climate induced event (e.g. washout)?	YES							1
2.5 (a)	Does the agency's organisational structure identify roles, responsibilities and competencies of key staff, aligned with its AM policy, strategies, objectives and plans?	NO		0					
2.5 (b)	Are the roles, responsibilities and organisational commitment for AM documented and communicated to all relevant people?	NO							1
2.5 (c)	Does the agency have an adequate complement of appropriately qualified staff with designated responsibilities to undertake its AM mandate?	NO							
2.5 (d)	Is the agency able to outsource its non-core activities (e.g. instrumented surveys such as roughness and deflections)?	YES							1
2.6 (a)	Does the agency offer training opportunities for staff?	YES			1				
2.6 (b)	Does AM specific training occur for primary staff?	NO							
2.6 (c)	Has the agency implemented an on-going training programme to address required AM competencies?	NO							1
2.6 (d)	Is there a formal AM capacity building programme which is routinely monitored?	NO							

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
2.7 (a)	Are agency engineer salaries less than 50% of comparable private sector positions?	YES			1				1
2.7 (b)	Are agency engineer salaries 50-80% of comparable private sector positions?	NO							
2.7 (c)	Are agency salaries roughly the same as comparable private sector positions?	NO							
2.7 (d)	Are RA salaries greater than comparable private sector positions?	NO							

BUILDING BLOCK 3: FINANCIAL									
Key objective: The achieve stable, adequate and sustainable funding for maintenance. Element: Financial arrangements Issue: <ul style="list-style-type: none"> <input type="checkbox"/> A stable, adequate and sustainable source(s) of funding for maintenance; <input type="checkbox"/> Annual asset valuation of road infrastructure assets; <input type="checkbox"/> Costing framework for determining unit costs of works; <input type="checkbox"/> Budgeting and programming processes; <input type="checkbox"/> Prioritised maintenance investment plan; <input type="checkbox"/> Risk strategy to address potential consequences of inadequate funding (e.g. emergency response); <input type="checkbox"/> Financial accounting and auditing of expenditure. 								FINAL SCORE C/F TO SUMMARY	

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
3.1 (a)	Does the agency depend only on the consolidated fund for road maintenance?	NO		0	1				2
3.1 (b)	Is the funding received from the consolidated fund related to road asset condition and performance?	NO							

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
3.1 ©	Does the agency get a fixed share of its maintenance funding requirement from a Road Fund and/or central government?	YES					1		
3.1 (d)	Does the agency get a variable share of its maintenance funding requirement from the Road Fund and/or central government that is related to road asset condition and performance?	NO							
3.2 (a)	Is the percentage of the budgeted funding for routine and periodic maintenance obtained < 30 % of that required?	YES			1				
3.2 (b)	Is the percentage of the budgeted funding obtained 30% - 59% of that required?	NO					0		1
3.2 ©	Is the percentage of the budgeted funding obtained 60% - 89% of that required?	NO					0		
3.2 (d)	Is the percentage of the budgeted funding obtained 90% - 100% of that required?	NO							
3.3 (a)	Does the agency carry out asset valuation?	NO		0					
3.3 (b)	If the agency carries out asset valuation, is the value of the agency's road asset decreasing?	NO							
3.3 ©	If the agency carries out asset valuation, is the value of the agency's road asset stable?	NO							0
3.3 (d)	If the agency carries out asset valuation, is the value of the agency's road asset increasing?	NO							

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
3.4 (a)	Is the percentage of the maintenance funding obtained? 0.1% of the asset value of the road network?	NO		0					
3.4 (b)	Is the percentage of the maintenance funding obtained? 0.5% of the asset value of the road network?	NO							
3.4 ©	Is the percentage of the maintenance funding obtained? 1 % of the asset value of the road network?	NO							0
3.4 (d)	Is the percentage of the maintenance funding obtained? 1.5% of the asset value of the road network?	NO							
3.5 (a)	Does the agency carry out annual and multi-annual financial forecasting for maintenance and rehabilitation works?	NO		0					
3.5 (b)	Are the financial forecasts for maintenance works and rehabilitation works based on current Asset Management Plan (AMP) outputs?	NO							
3.5 ©	Are the financial forecasts for maintenance works based on current comprehensive AMPs with reasoned supporting assumptions?	NO							0
3.5 (d)	Are the financial forecasts for maintenance and rehabilitation works based on current comprehensive advanced AMPs with detailed supporting assumptions and high confidence in accuracy?	NO							

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
3.6 (a)	Does the agency operate an accounting system?	YES			1				
3.6 (b)	Are the annual accounts finalised within the first quarter of the following year?	YES				1			4
3.6 ©	Are the accounts audited annually?	YES					1		
3.6 (d)	Are the accounts published annually?	YES						1	

BUILDING BLOCK 4: MANAGERIAL						
<p>Key objective: Successful implementation of road asset preservation practice through support of the district executives, an adequate organisational structure, adequate number of trained staff</p> <p>Element: Network management</p> <p>Issue:</p> <ul style="list-style-type: none"> ☐ Use of appropriate AM system that contains: <ul style="list-style-type: none"> ○ Network definition (road and bridge inventory information), ○ Network condition (roads and bridges) ○ Network usage (traffic) ○ Financial/cost information on works activities ○ Storage, update, analysis and reporting of data collected ☐ Appropriate levels of service and intervention standards that determine gaps in network performance? ☐ Prioritised annual, medium (3- 5yrs) and long term (> 5 yrs) maintenance and development plans and related investment plans? ☐ A risk management strategy (for unfunded works); ☐ Annual reporting on the overall management of the road asset (AM plan); ☐ Demand forecasting. 						FINAL SCORE C/F TO SUMMARY

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
4.1 (a)	Does the roads agency have an AM system(s) in place which can store current and historical asset inventory, condition and asset utilization data (e.g. traffic)?	YES			1				
4.1 (b)	Does the AM system enable treatment cost and historical maintenance information to be stored and accessed?	YES				1			3
4.1 ©	Does the AM system allow for the comparison of the current condition of assets with intervention levels to determine maintenance requirements?	YES					1		
4.1 (d)	Can the AM system facilitate the prioritisation of road sections requiring maintenance?	NO							
4.2 (a)	Has the road agency developed intervention levels for all its principal asset types which require periodic maintenance (carriageway, shoulders, bridges, culverts)?	NO		0					0
4.2 (b)	Are the intervention levels directly associated with defined levels of service?	NO							
4.2 (c)	Have the intervention levels been determined using an economic analysis.	NO							
4.2 (d)	Have the intervention levels been determined using socio-economic-political (i.e. multi-criteria) analysis?	NO							
4.3 (a)	Does the agency produce annual maintenance and development plans?	YES			1				3

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
4.3 (b)	Does the agency produce annual prioritised maintenance and development plans?	YES				1			
4.3 (c)	Does the agency provide prioritised medium term (3-5 year) maintenance plans?	YES					1		
4.3 (d)	Does the agency provide prioritised long term (> 5 year) maintenance plans?	NO							
4.4 (a)	Does the agency keep records of maintenance and rehabilitation work activities?	YES			1				
4.4 (b)	Is maintenance and rehabilitation planned and prioritised according to asset condition?	NO							
4.4 (c)	Is maintenance and rehabilitation prioritised using a cost benefit approach?	NO							1
4.4 (d)	Is maintenance and rehabilitation expenditure prioritised using techniques which consider economic and social benefit?	NO							
4.5 (a)	Does the agency keep a record of maintenance works backlog?	YES			1				
4.5 (b)	Does the agency have a strategy to reduce maintenance backlog based on a percentage of the available development budget?	YES					1		2
4.5 (c)	Does the agency prioritise the reduction of maintenance backlog using an economic analysis process?	NO							

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
4.5 (d)	Does the agency prioritise the reduction of maintenance backlog using risk management techniques?	NO							
4.6 (a)	Does the agency carry out basic demand (traffic) forecasting?	NO		0					0
4.6 (b)	Are the forecasts of traffic demand based on traffic counts carried out in the last 5 years using robust economic indicators (e.g. GDP)?	NO							
4.6 ©	Is traffic demand forecast based on mathematical analysis of historical trends?	NO							
4.6 (d)	Are primary economic factors used when forecasting demand?	NO							
4.7 (a)	Does the agency schedule capital projects using staff judgement, taking into consideration government policy and political drivers?	YES			1				1
4.7 (b)	Are projects identified using input from operational staff, estimates of service lives, traffic demand modelling and accident analysis?	NO							
4.7 ©	Are major capital projects for the next 10 years identified and prioritised taking into account socio-political-economic requirements?	NO							
4.7 (d)	Does the agency use advanced formalised socio- economic-political decision-making techniques to identify major capital expenditure?	NO							

BUILDING BLOCK 5: TECHNICAL									
Key objective: Identification and description of road assets including inventory, condition data and performance monitoring; and availability of data to network managers. Element: Road network database Issue: <ul style="list-style-type: none"> <input type="checkbox"/> Existence of a road referencing system; <input type="checkbox"/> Existence of a classified road inventory; <input type="checkbox"/> Standard procedures for developing a road inventory, data collection and performance monitoring; <input type="checkbox"/> Use of asset register to store all road asset information. 									FINAL SCORE C/F TO SUMMARY

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
5.1 (a)	Does the agency have a road referencing system based on routes and nodes between centres of population?	YES			1				
5.1 (b)	Is the road referencing system based on road sections (< 1 km) with homogeneous characteristics?	YES				1			3

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
5.1 (c)	Is the road referencing system based on sub-sections (homogenous sections of 200 m lengths)?	NO							
5.1 (d)	Is the road referencing system GIS based?	YES						1	
5.2 (a)	Does the agency have an item inventory recording basic road surface types (earth, gravel or sealed)?	YES			1				
5.2 (b)	Does the agency undertake an inventory of all principal assets (carriageway, shoulders, bridges, culverts, side drains)?	YES	Life??				1		
5.2 (c)	Does the inventory include the service lives of all principal assets?	NO							
5.2 (d)	Does the agency have deterioration models for all principal assets?	NO							
5.3 (a)	Is the road inventory based on assumptions or incomplete data?	YES			0				
5.3 (b)	Is there a system of systematic and documented data collection for all principal assets (carriageway, shoulders, bridges, culverts, side drains) on a road by road basis?	YES					1		
5.3 (c)	Is there an established system of systematic and documented data collection for all principal assets (carriageway, shoulders, bridges, culverts, side drains) on a section basis?	YES						1	

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
5.3 (d)	Is there an established system of systematic and documented data collection for all principal assets on a sub-section basis?	YES							1
5.4 (a)	Does the agency carry out annual visual condition assessment surveys for carriageways, shoulders of gravel and earth roads?	YES			1				
5.4 (b)	Are the visual condition assessments of gravel and earth carried out in accordance with well documented, standardised procedures?	YES				1			
5.4 (c)	Does the agency measure gravel loss?	NO							
5.4 (d)	Are the results of the gravel and earth road condition assessment recorded in a computerised AM system?	YES							1
5.5 (a)	Does the agency estimate asset utilization (traffic) on its network?	YES			1				
5.5 (b)	Does the agency measure asset utilization (traffic) annually on its major roads?	YES				1			
5.5 (c)	Does the agency project asset utilization across its network from annual measures of utilization of a sampled number of roads	NO							
5.5 (d)	Does the agency assess bottlenecks on its network?	YES							1

BUILDING BLOCK 6: OPERATIONAL										
Key objective:	Efficient operations at district level including planning and scheduling of maintenance, procurement of service providers and technical compliance.								FINAL SCORE C/F TO SUMMARY	
Element:	Procurement of services									
Issue:	<ul style="list-style-type: none"> <input type="checkbox"/> Appropriate type of contract; <input type="checkbox"/> Outsourcing of strategic, non-core activities; <input type="checkbox"/> Maintenance scheduling of works; <input type="checkbox"/> Auditing of maintenance works. 									

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
6.1 (a)	Are service delivery roles within the agency clearly allocated?	YES			1				
6.1 (b)	Does the agency have provision for outsourcing of non-core activities?	YES				1			
6.1 (c)	Are competitive tendering practices used?	YES					1		
6.1 (d)	Are service delivery mechanisms reviewed annually to identify risks, benefits and costs of various outsourcing options?	NO							
									3

ITEM NO.	QUESTION	YES/NO	JUSTIFICATION/COMMENT						
6.2 (a)	Does the agency plan day to day maintenance activities?	NO		0					
6.2 (b)	Are the needs of stakeholders considered when scheduling day to day maintenance?	NO							
6.2 ©	Is the planning of day to day maintenance optimised in terms of the availability and use of resources?	NO							0
6.2 (d)	Is day to day planning of maintenance optimised by considering the availability of resources and impacts on road users?	NO							
6.3 (a)	Does the agency prepare day to day reports on road maintenance activities?	NO		0					1
6.3 (b)	Does the agency prepare weekly reports on road maintenance activities?	YES				1			
6.4 (a)	Does the agency undertake technical audits of designs?	YES			1				
6.4 (b)	Does the agency regularly undertake technical audits of maintenance, construction and rehabilitation works?	YES				1			3
6.4 (c)	Does the agency provide guidelines for undertaking the road audits?	YES					1		
6.4 (d)	Does the RA require service suppliers to be ISO 9000 certified?	NO							

Annex E: PowerPoint Presentation for Workshop



Economic Growth through Effective Road Asset Management (GEM)

SUPPORT VISIT TO TANZANIA RURAL AND URBAN ROAD AGENCY (TARURA)

Mwanza & Dar es Salaam, Tanzania
06-13 December, 2017



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Purpose and Objectives of Visit and Meetings



Purpose:

- Support and follow up on Tanzania's initiative to join the AFCAP GEM Project

Objectives:

- Present an overview of the GEM Project,
- Outline structure of GEM RAM Monitoring Tools,
- Assist TARURA to establish current RAM maturity level via an interactive workshop format, also AM identify gaps,
- Define preliminary plan for TARURA's participation in the GEM Project,
- Undertake field visit to nearby on-going works.



Private and confidential 3

Programme



Day 1:

- GEM Overview
- Introduction to RAM Assessment Questionnaire
- Completion of Self Assessment Questionnaire

Day 2:

- Review of Self Assessment Results
- RAM Gap Analysis
- Definition of Way Forward

Day 3:

- Field Visit, Closure



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Programme (Possible Revision)



Day 1:

- GEM Overview
- Introduction to RAM Assessment Questionnaire
- Completion of Self Assessment Questionnaire
- Review of Self Assessment Results

Day 2:

- **Road Condition Monitoring and Asset Valuation**
- RAM Gap Analysis and Definition of Way Forward

Day 3:

- Field Visit, Closure



What is the GEM Project??



What is the GEM Project?

ReCAP: AfCAP Project
Funding: UKAID/DfID
Managed by: CARDNO - Pretoria
Implementation Consultant: Civil Design Solutions (CDS)
Consultant's GEM Advisory Team:

- Rob Geddes – Team Leader
- K. Gongera - Engineer
- C. T. Bopoto - Engineer
- C. Lema – Economist/Sociologist

UKaid
for the better people

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Purpose and Objectives of the GEM Project

Purpose	Time Frame
To achieve economic and social benefits for local communities as a result of <u>improved performance</u> in rural road asset management.	27 months (to end 2018)







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Approach



- Focus more on improved performance in road asset management than on any specific road asset management system.
- Encourage greater accountability of road agencies to road users and other stakeholders.
- Provide opportunities for the road agencies to improve their own performance.
- Encourage road agencies in Sub-Saharan Africa to share knowledge, experiences and carry out peer reviews of each other.



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Project Areas




- Four rural road agencies participating in three countries:
 - Tonkolili District in Sierra Leone
 - Chongwe District in Zambia
 - Uganda National Roads Authority (UNRA)
 - Kamuli District in Uganda
- Western Cape identified as adopting best practice.

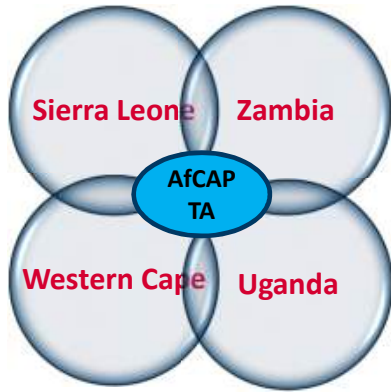



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Project Implementation Team




The PIT (made up of representatives from each country) is responsible for the implementation of the project and for reporting to AFCAP PMU and other stakeholders

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Implementation Phase



STAGE 1

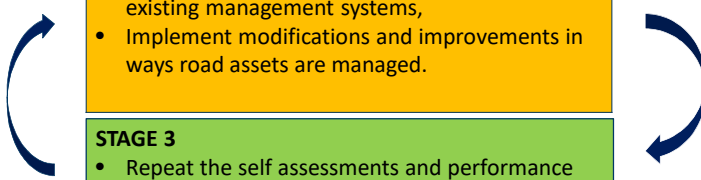

- Identify target road networks
- Conduct baseline studies:
 - Self-assessment of asset management performance,
 - Road condition and asset value ,
 - Social and economic data.

STAGE 2

- Analyse the strengths and weaknesses of existing management systems,
- Implement modifications and improvements in ways road assets are managed.

STAGE 3

- Repeat the self assessments and performance monitoring,
- Discuss progress with sector stakeholders and PIT.

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Implementation Phase



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Implementation Phase



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Implementation Phase



Implementation Phase



Implementation Phase



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Implementation Phase



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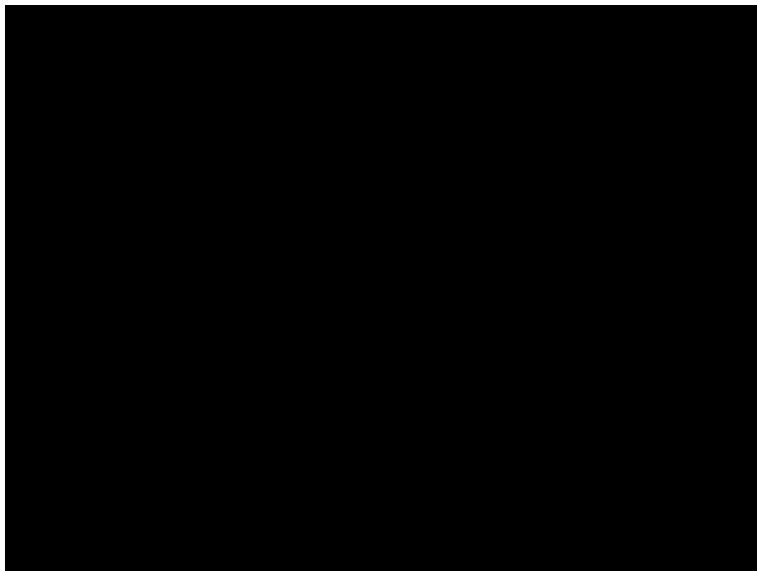
Implementation Phase



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Implementation Phase



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Vision for the Project




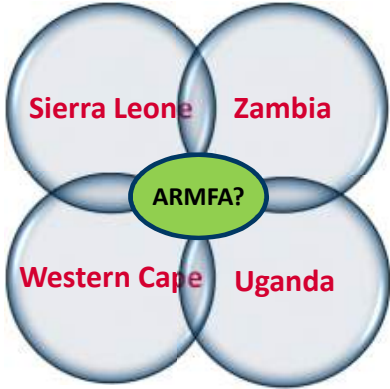

Roll Out
Repeat the process adding more countries and study areas.....

Added Value
Improved performance in rural road asset management in the project areas leads to a demand for improved performance in other areas and other types of infrastructure within the same country.



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Project Sustainability?



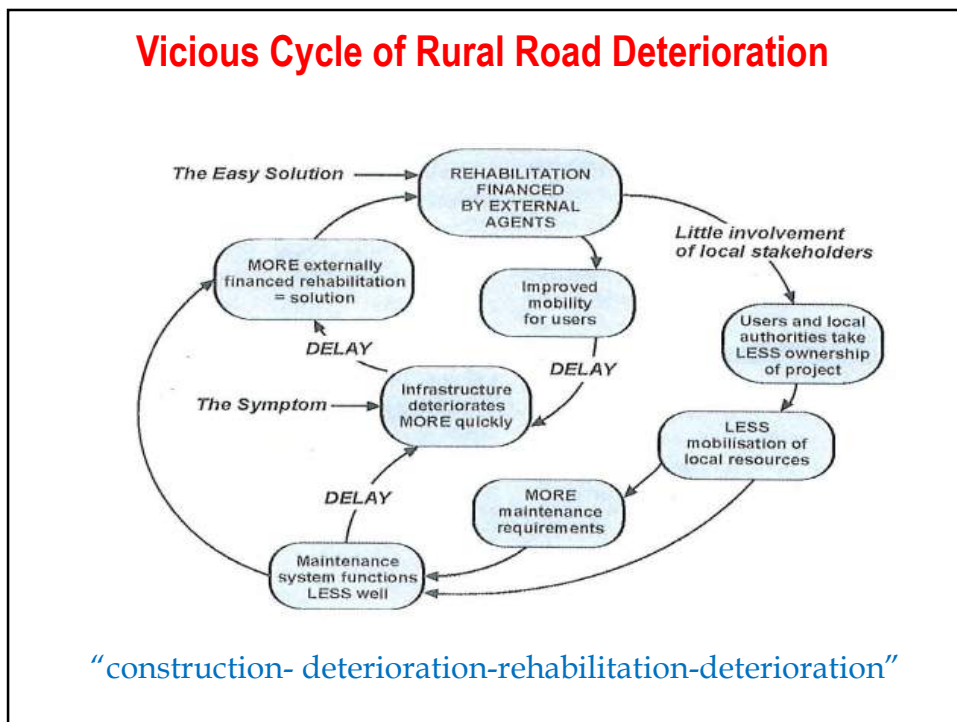
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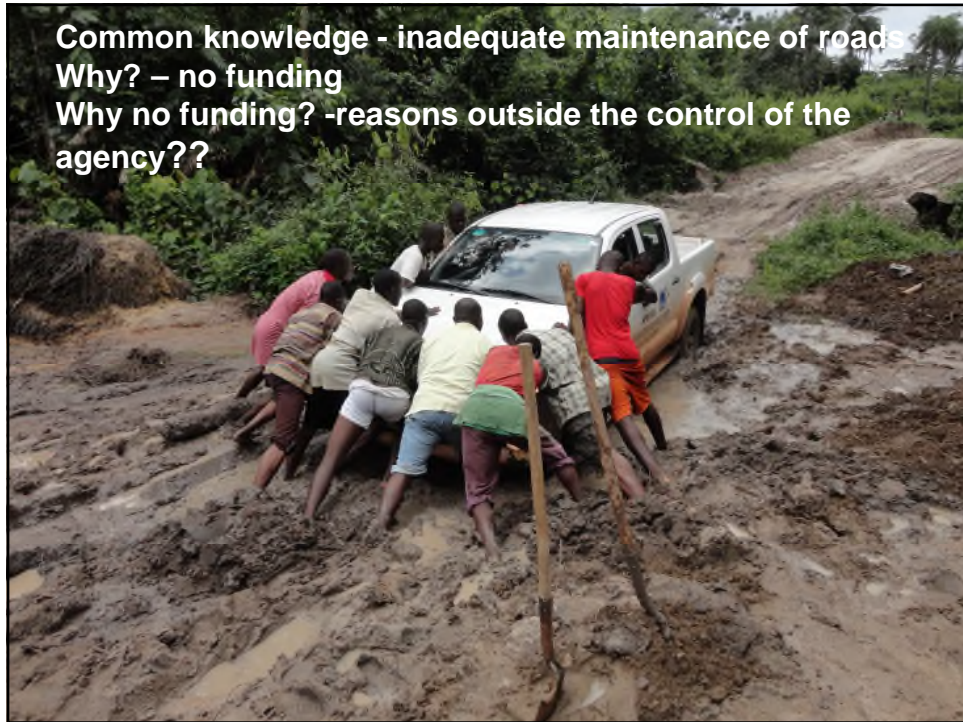
Project Participation Expansion?

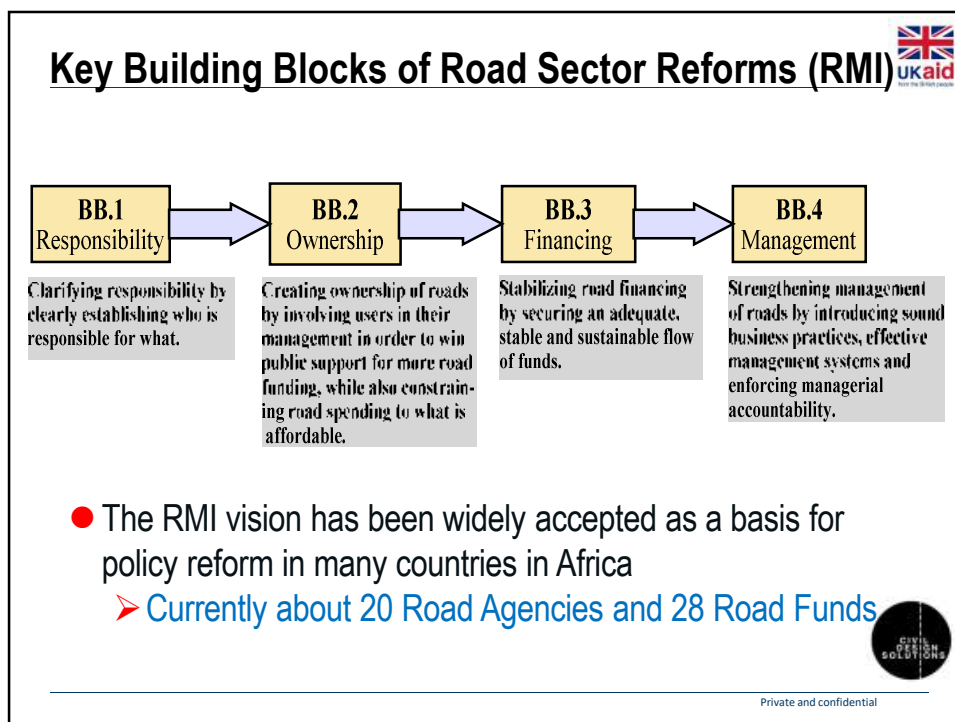
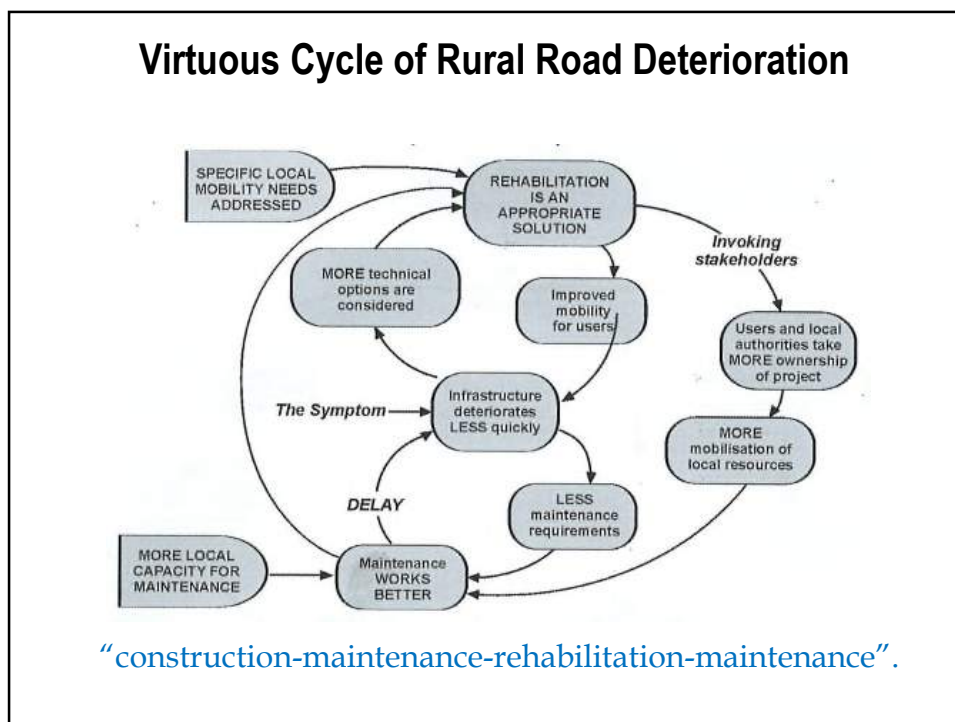
Country 5
 Sierra Leone Zambia
Country 6 **Country 8**
 ARMFA
 Western **Country 7** Ghana

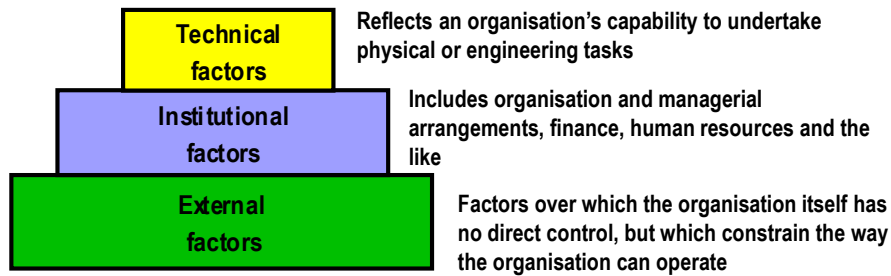
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Factors Affecting Organizational Performance



Hierarchy of Management issues – the “Brooks Pyramid”

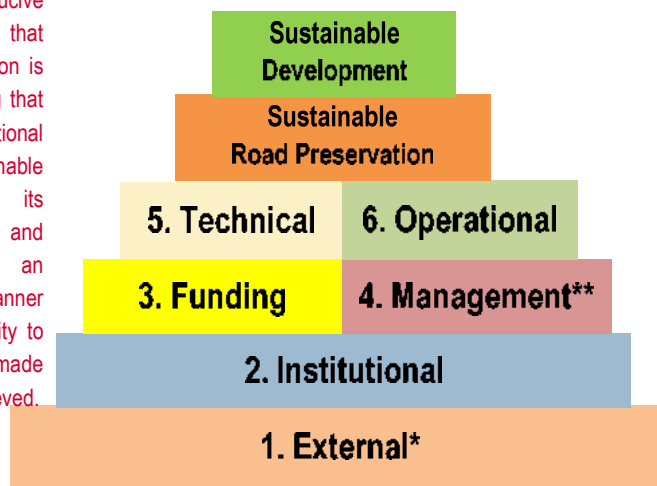
Lessons learnt:

Until the external and institutional frameworks are improved, it is extremely difficult to overcome the numerous human resource, technical, financial and operational problems that beset the attainment of efficient and effective maintenance of rural roads.

Road Preservation Pyramid



Political support for conducive policies and legislation that commit to road preservation is a prerequisite for ensuring that there is sufficient institutional capacity and funding to enable the RA to undertake its management, technical and operational activities in an efficient and effective manner thereby facilitating its ability to preserve the investments made in road infrastructure. achieved.

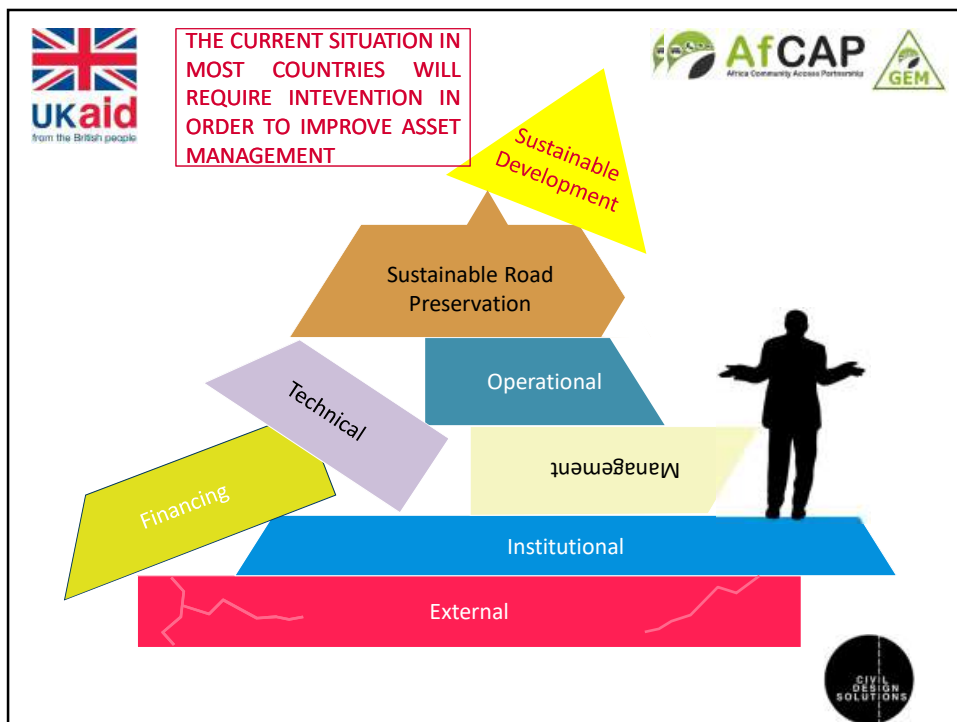
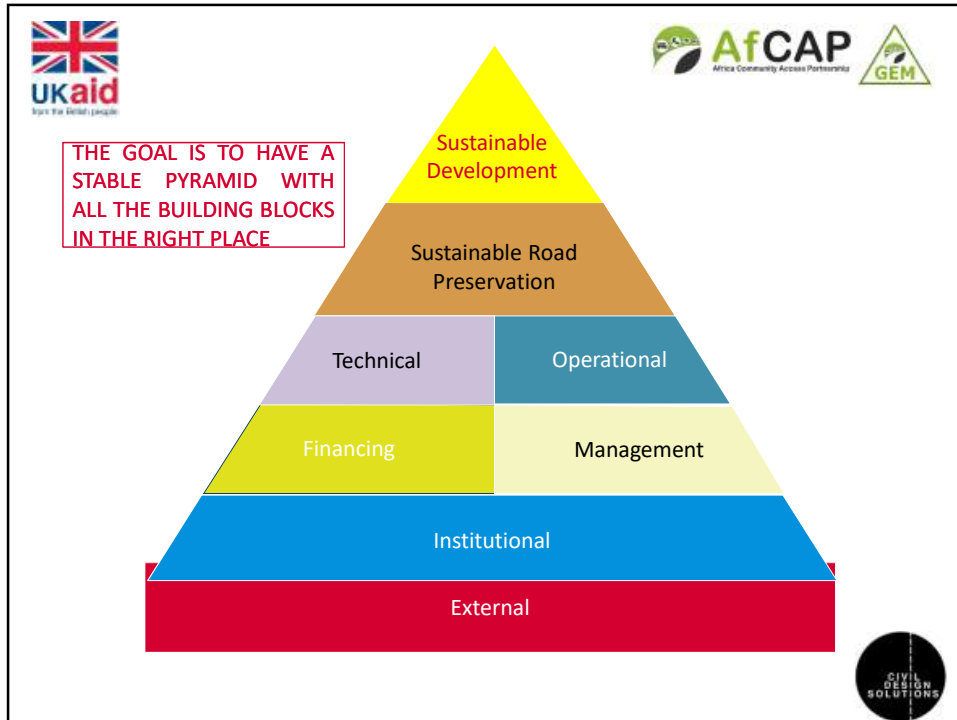


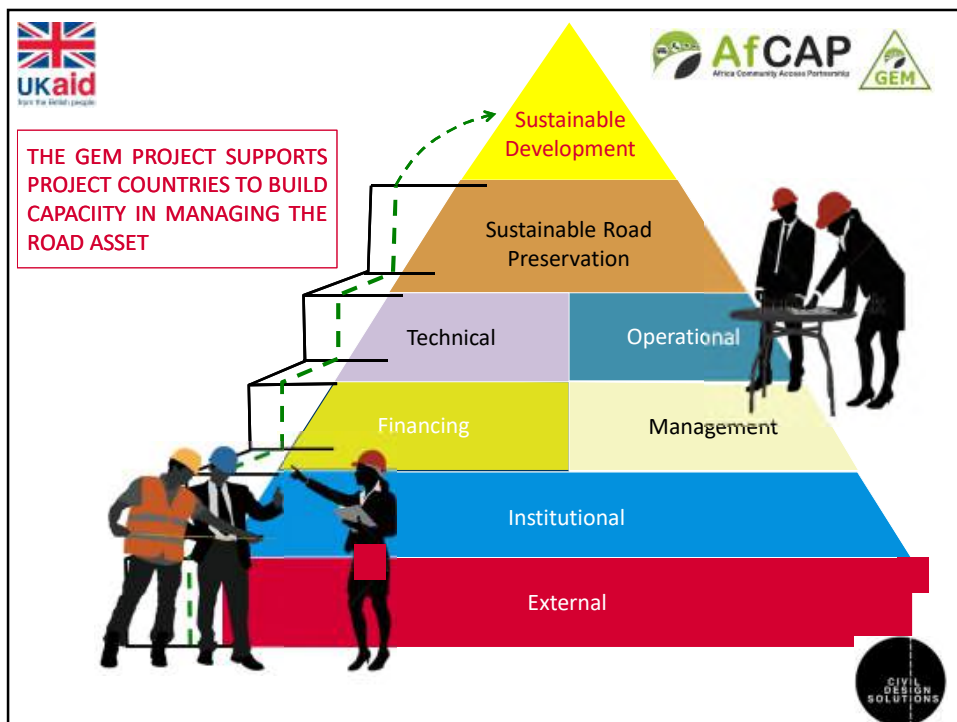
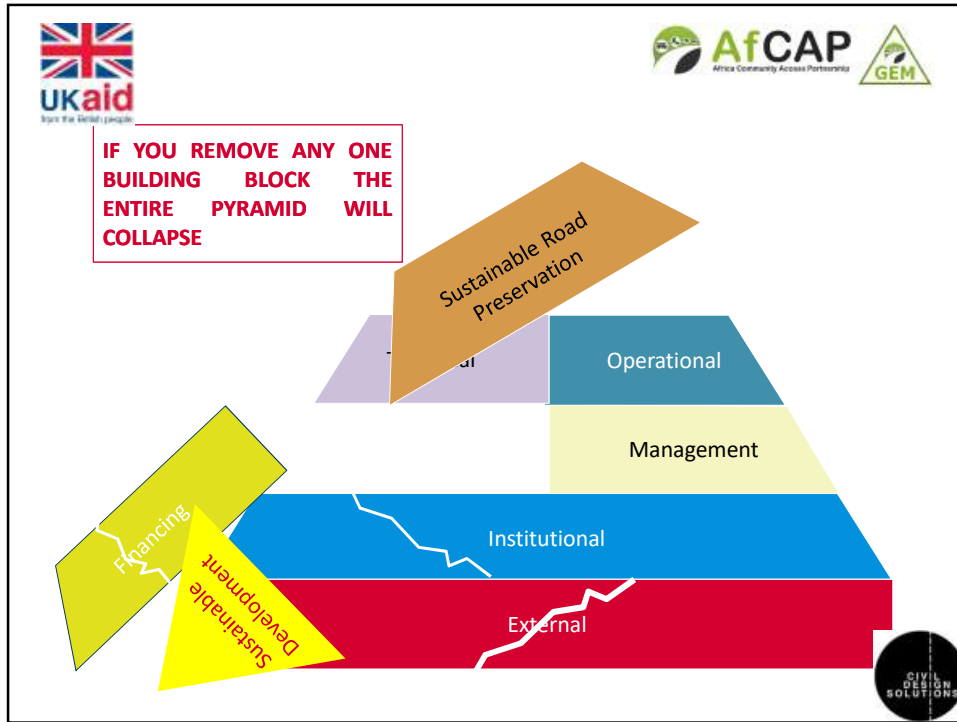
* Includes political and road users

** Includes planning



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Road Asset Management Concept



- What is asset management?

“systematic and coordinated activities and practices which an organization adopts to optimally and sustainably manage its assets and asset systems, their associated performance, risks and expenditures over their life cycles for the purpose of achieving its organizational strategic plan”.

British Standards Institution - Publicly Available Specification (PAS) (IAM, 2008)

- Asset management is related to delivering business goals through a combination of management, financial, technical and other related activities with the objective of providing an optimal LoS in the most cost-effective manner.
 - Thus, any attempt to evaluate road agency performance in road asset preservation must consider all the inter-related components of such performance in a holistic and structured manner.



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Road Asset Management Concept

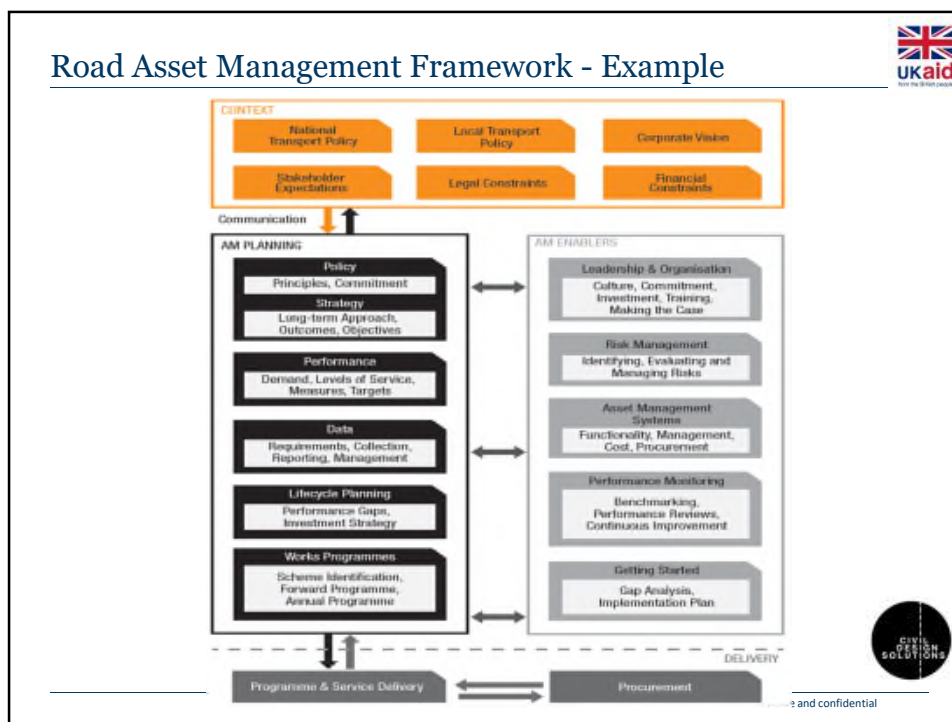


- What is Asset Management?

- A strategic approach over the long term,
- Meeting stakeholder needs,
- A systematic approach,
- Optimal allocation of resources,
- Managing expenditure over the road asset life-cycle,
- Meeting performance in most efficient way,
- Managing risk, and
- Efficient operational delivery.



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Road Asset Management Policy and Strategy

- Demonstrates the commitment by senior decision makers
- Document the principles, concepts and approach to be adopted
- Link with the agency's policies and strategic objectives
- Demonstrate the contribution of the roads in meeting policies and strategies
- Set out the desired levels of service
- Facilitate communication with stakeholders

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Road Asset Management Policy Example



Hampshire Country Council Policy for Highway Asset Management

Hampshire County Council considers effective asset management to be of one of the key factors to enable the delivery of the corporate priorities namely:

- Hampshire safe and secure for all
- Maximising well-being
- Enhancing our quality of place

It is recognised that a good transport network is essential for a successful economy and society for Hampshire. Our roads provide access to jobs, services, schools, get goods to the shops and allow us to make the most of our free time. Our local roads are at the heart of the transport network and have a key role to play in ensuring that transport in Hampshire delivers the services our residents both want or need. In order that the transport network meets this need Hampshire's policy on Asset Management will meet the Environment Department's Aims and Objectives for 'Moving and Shaping a Prospering Hampshire'.



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Road Asset Management Level of Service



- Broad statements that describe the performance of road infrastructure,
- In terminology stakeholders can understand,
- Relate to outcomes and cover key aspects such as:
 - safety,
 - serviceability, and
 - sustainability.



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Road Asset Management Level of Service Example



- “To ensure that our road users feel safe and are confident about their personal safety when using the road network.”
- “To provide our road users with a reasonable level of confidence that their journeys on the roads will be predictable and timely.”
- “To ensure that the highway network is available and accessible at all times.”



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Road Asset Management Performance Target Examples




- Travel Speeds to be achieved:
 - Gravel roads – 50 km/hr
 - Earth roads – 40 km/hr
- Impassability thresholds:
 - Streams – 24 hours
 - Rivers – 2 days
- Safety:
 - Repair signage within 48 hours of report




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GEM Road Asset Management Monitoring Tools




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Measuring Road Agency Asset Management Performance

- ✓ Road Agency Asset Management Assessment
 - Self Assessment Tool/Questionnaire
- ✓ Asset Value Tracking/Monitoring
 - Road condition monitoring
 - Asset valuation
- ✓ Socio-economic Benefits Tracking
 - Social and economic indicators




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Focus over Next Two Days




- ✓ Road Agency Asset Management Assessment
 - Self Assessment Tool/Questionnaire



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Road Asset Management Maturity Assessment




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Self Assessment Questionnaire





The diagram is a pyramid divided into five horizontal layers. From top to bottom, the layers are: Sustainable development (red), Sustainable road preservation (green), Technical and Operational (light blue), Financing and Management (dark blue), and Institutional (olive green). The bottom-most layer is External (dark red). The text 'ROAD PRESERVATION PYRAMID' is centered below the pyramid.



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Self-Assessment Questionnaire




✓ Asset Management Assessment

- Self Assessment Tool/Questionnaire

Aspect	No of Questions	No of Sub-questions	Max Score
External	6	24	96
Institutional	7	28	112
Financial	6	24	96
Managerial	7	28	112
Technical	5	20	80
Operations	3	14	52
Totals	34	138	548




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Self-Assessment Questionnaire 

Assessment Scoring Criteria:


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



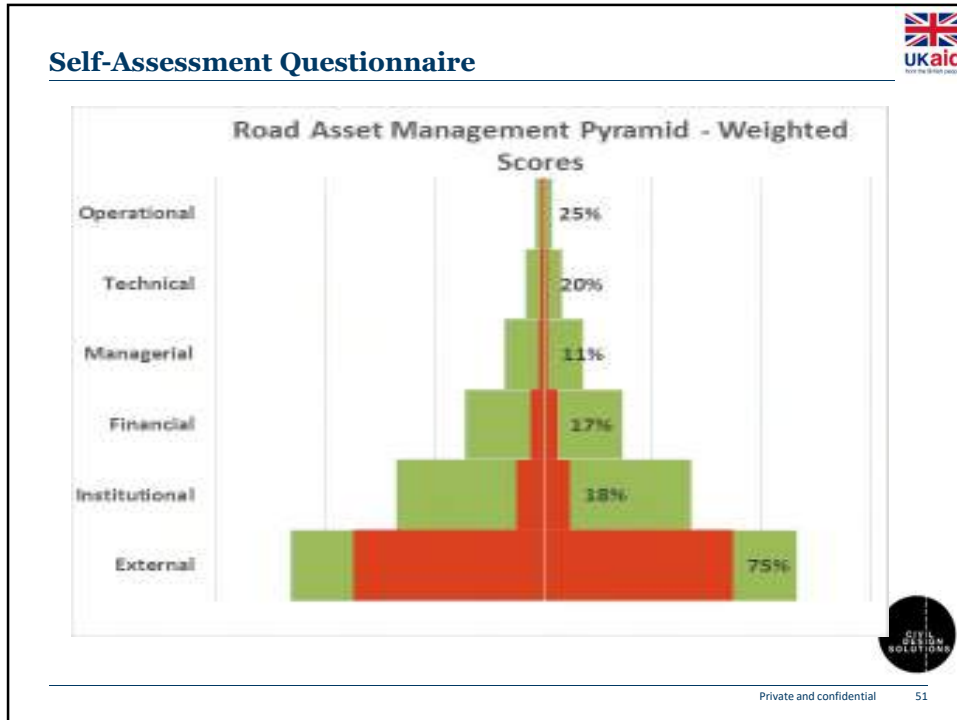
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Self-Assessment Questionnaire 

Weighting Ranking	Building Block	Max. Possible Score	Rater's Score (Baseline)	Joint Review Score	Weighting
1	External	4	2.3	2.5	0.38
2	Institutional	4	1.9	1.9	0.25
3	Financial	4	1.8	0.8	0.16
4	Managerial	4	2.7	1.3	0.10
5	Technical	4	2.2	1.6	0.06
6	Operational	4	3.8	2.8	0.04
RAM Assessment Score				1.9	1.00
RAM Rating				Core	
Rural Access Sustainability Index (RASI)				0.48	(Scale: 0 - 1)



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Self-Assessment Questionnaire

AFCPA GEM Project: Rural Access Sustainability Score Card

AM Building Block	Rural Access Sustainability Indices				
	S. Leone	Zambia	Uganda - Kamuli	Uganda UNRA	Western Cape
External	0.75	0.25	0.75	0.38	0.50
Institutional	0.18	0.25	0.14	0.46	0.68
Funding	0.17	0.08	0.21	0.38	0.75
Managerial	0.11	0.11	0.18	0.32	0.71
Technical	0.20	0.35	0.40	0.50	0.90
Operations	0.25	0.58	0.25	0.42	0.67
Rural Access Sustainability Index (RASI)	0.44	0.22	0.45	0.40	0.62

KEY:					
RASI Scale	<0.30	0.30-0.55	0.55-0.70	0.70-0.85	>0.85
RASG Scale	E	D	C	B	A
Remark	V. Poor	Poor	Fair	Good	V. Good

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Self-Assessment Questionnaire

AFCPA GEM Project: Rural Access Sustainability Score Card


AM Building Block	Rural Access Sustainability Grades				
	S. Leone	Zambia	Uganda - Kamuli	Uganda UNRA	Western Cape
External	B	E	B	D	D
Institutional	E	E	E	D	C
Funding	E	E	E	D	B
Managerial	E	E	E	D	B
Technical	E	D	D	D	A
Operations	E	C	E	D	C
Rural Access Sustainability Grade (RASG)	D	E	D	D	C

KEY:


RASI Scale	<0.30	0.30-0.55	0.55-0.70	0.70-0.85	>0.85
RASG Scale	E	D	C	B	A
Remark	V. Poor	Poor	Fair	Good	V. Good



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Link between RAM Performance and Road Condition!!!



The graph illustrates the relationship between Road Condition Index (Y-axis) and RA maturity to undertake RAM (X-axis). A red curve shows that as road condition improves, the maturity to undertake RAM also increases. Three inset photos show a road in different states: a paved road with potholes, a gravel road, and a dirt road.



Road Inventory, Condition and Asset Valuation



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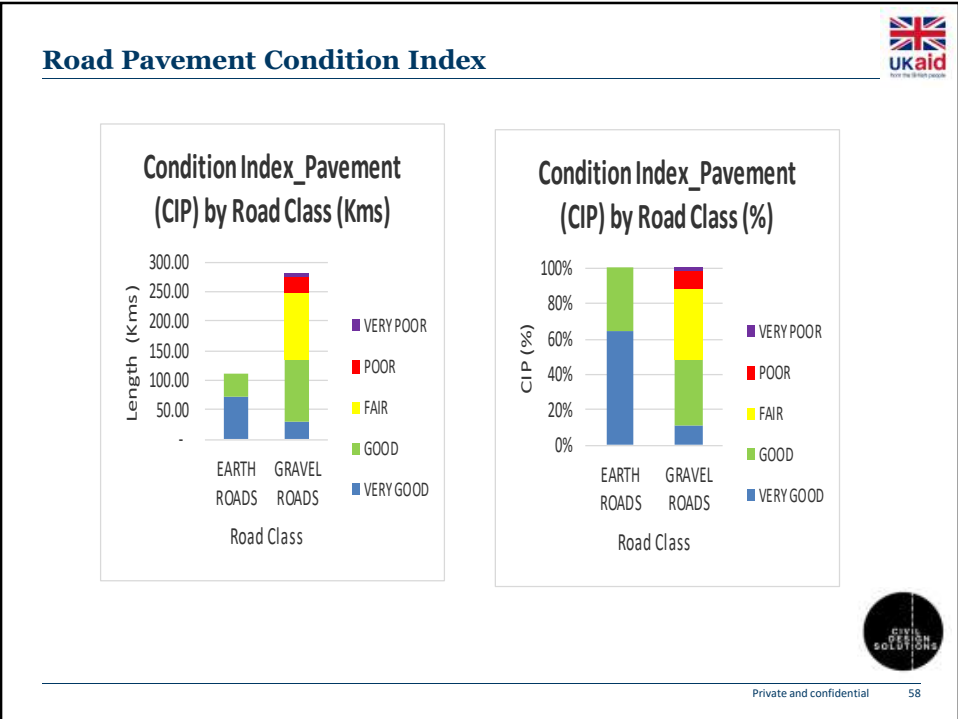
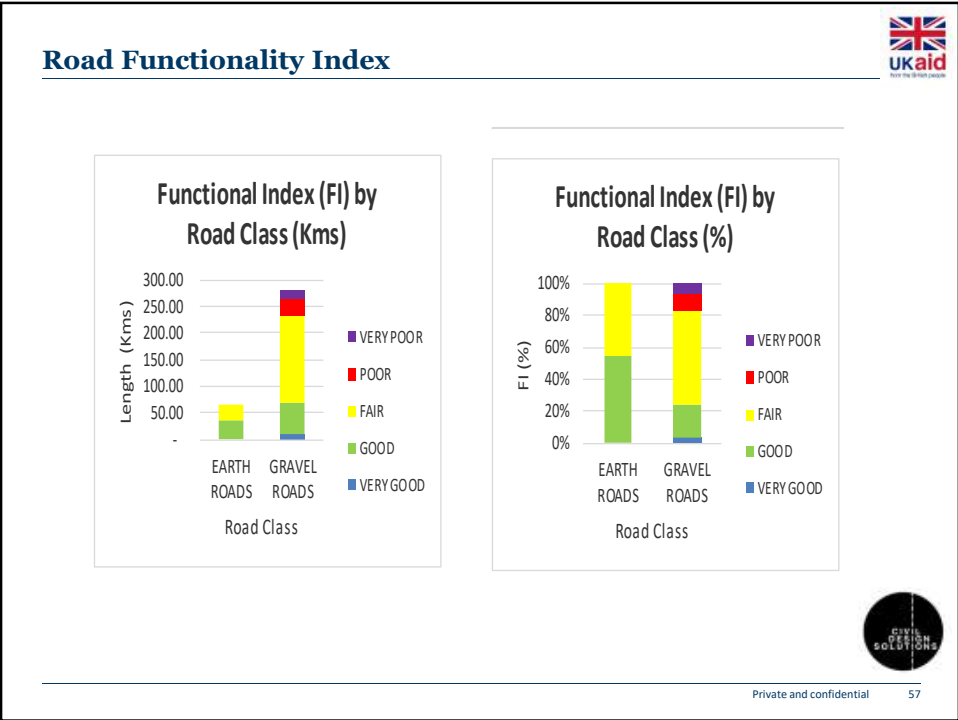
Road Inventory and Condition



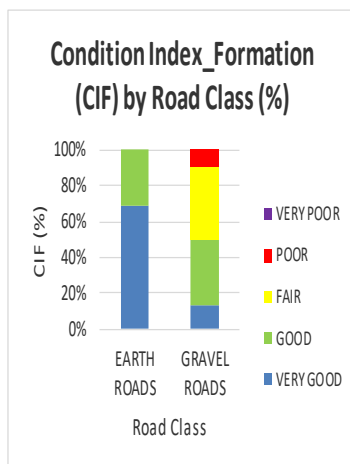
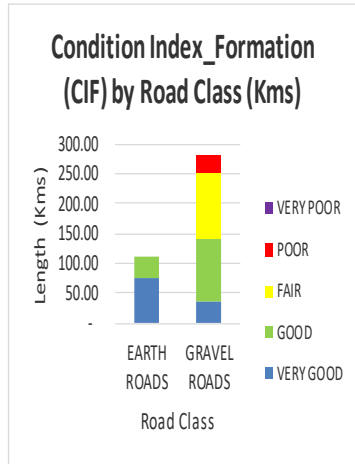
INVENTORY AND ROAD CONDITION DATA TO BE COLLECTED

Code Item	Units	Reporting Interval
Location Referencing		
• Location reference (grid)	km E/W	As Site Visit
• Location reference (road)	km E/W	As Site Visit
• GPS location coordinates	road km	As Site Visit
Road Inventory		
Road General		
• Road Type		when change occurs
• Road Surface Width	m	when change occurs
• Cross Section Width	m	when change occurs
• Unimproved Surface Type		when change occurs
• Improved Surface		when change occurs
• Improved Width	m	when change occurs
• Shoulder Type		when change occurs
• Shoulder Width	m	when change occurs
• Sub Drain Type		when change occurs
• Side Drain Width	m	when change occurs
• Side Drain Depth	m	when change occurs
Road Functions		
• Services	Location	
• Signs	Location	
• Road Markings	Location	
Other Change Parameters		
• Location	km	
• Road Type	km	when change occurs
Structural Features		
• Culverts	km	
• Bridges	km	
• Structures	km	
Road Structure		
• Roadway Alignment	km & Lat/Long	when change occurs
• Vertical Alignment	km & Lat/Long	when change occurs
• Roadway Type		when change occurs
Condition		
Construction & Structure		
• Pavement Roughness	m	
• Road Bed	degrees & width	km
• Soil Stability	degrees & width	km
• Roadbed	degrees & width	1 km
• Roadbed	degrees & width	1 km
• Roadbed	degrees & width	1 km
• Roadbed	degrees & width	1 km
• Roadbed	degrees & width	1 km
Equipment Structure		
• Roadway	degrees & width	
Inventory Data		
• Use Condition	0	year
Site Data		
• Site Data		year
• Site Data		year
• Site Data		year

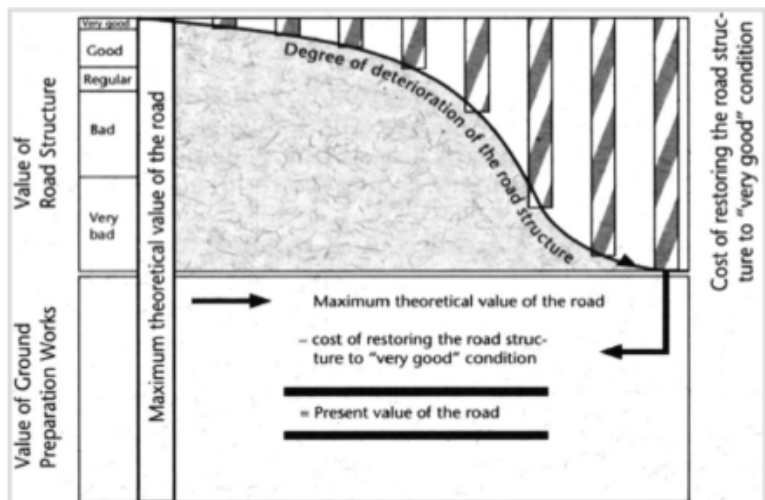
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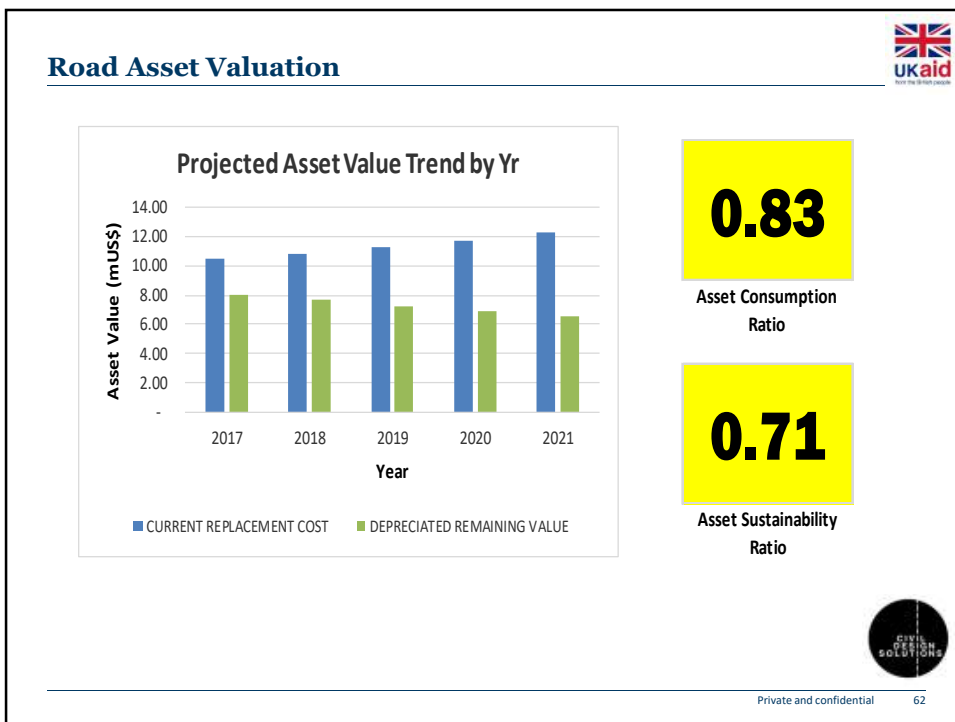
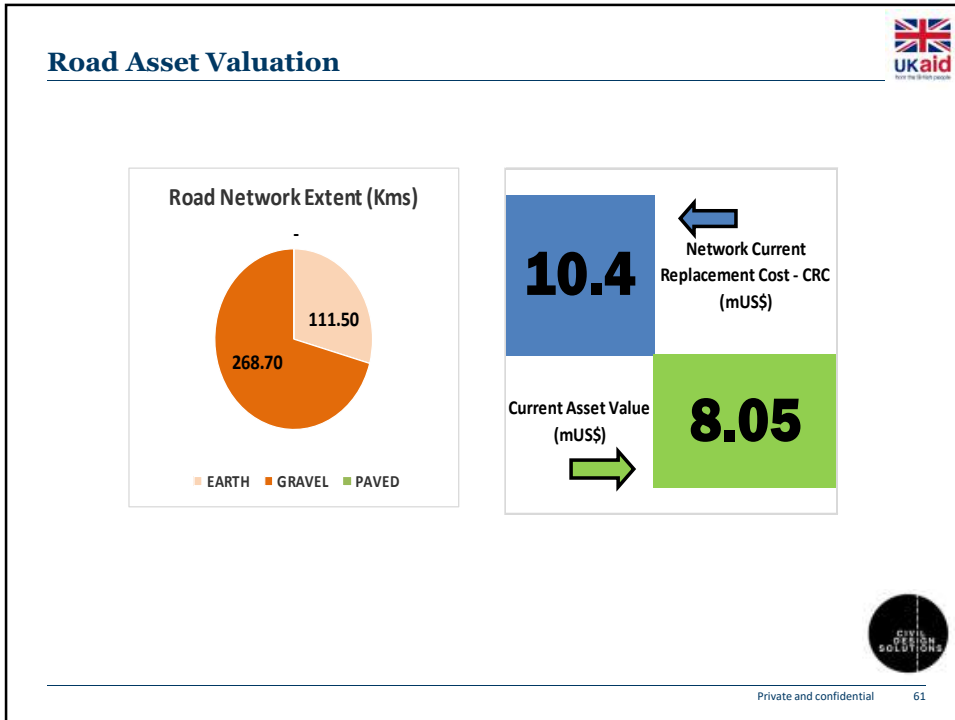


Road Formation Condition Index



VALUE OF ROAD ASSETS








Socio-economic Impact Evaluation






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Social and Economic Data

- Collect social and economic data related to road access and transport
- 10 trading centres / villages selected on the road network managed by each road agencies



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Social and Economic Data	
Name of trading centre/village	
Population	
Distance from nearest paved road	
Distance from district centre.	
No. of available trips to district centre per day (on a market day)	
	Light vehicle
	bus/combi
	Freight transport /trucks
Fares on public transport to the district centre (passenger-km)	
	Light vehicle
	Bus/combi
	Motorcycle (boda-boda)

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