



Economic Growth through Effective Road Asset Management (GEM)

15th ARMFA Annual General Assembly

7th to 10th November 2016

RN Geddes



Introduction to Project

Title of Project:

Economic Growth through Effective Road Asset Management (GEM)

- Rural road networks managed by sub-national road agencies
- First significant attempt by AFCAP to address maintenance of rural roads on a large scale
- Research project – process is as important as the outcomes.

Outline of Presentation:

- Study Team
- Road Maintenance in Africa
- Purpose and Objectives
- Approach
- Methodology
- Vision



Study Team

- ReCAP Infrastructure Research Manager Les Sampson
- Team Leader: Rob Geddes
- Institutional and Financing Expert: Mike Pinard
- Road Maintenance Expert and Trainer: Kingstone Gongera
- Asset Management Expert: Michael Burrow
- Road Condition Monitoring Expert: Charles Bopoto
- Rural Transport Economist: Camilla Lema
- Short term experts: Gurmel Ghataora
Gerrie van Zyl
- Field Researchers: UoB PhD students.



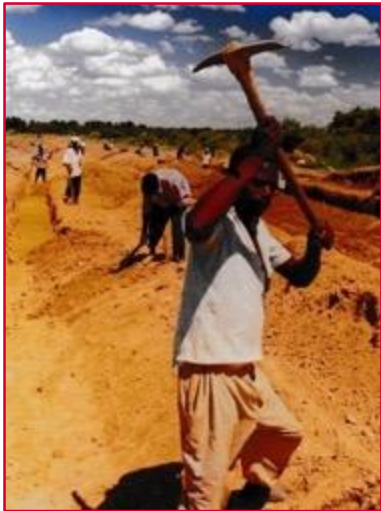
Road Maintenance in Africa

- More funding for maintenance and more predictable (road funds)
- Local government administrations have more autonomy
- Increasing capacity of the private sector.



Road Maintenance in Africa - Strategy

- Few examples of sustainable management systems for rural roads SS Africa.
- More attention to construction of roads than maintenance.
- Maintenance systems focus more on preparing and implementing annual work programme than long term strategic plans.
- Lack of a culture for maintenance.
- Governments unsure whether to decentralize rural road maintenance.



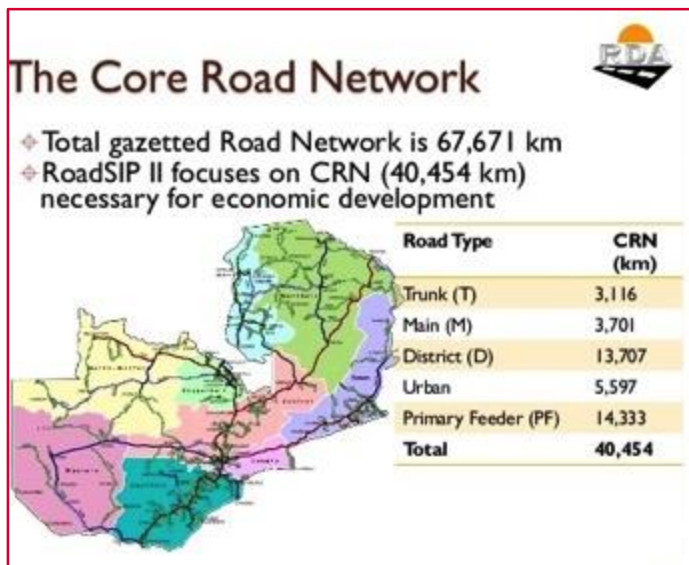
Road Maintenance in Africa - Funding

- Funding for maintenance has improved - road funds are broadening the net.
- Priority to maintenance of national trunk road networks.
- Lack of confidence in the long term security of road funds: road agencies unable to let multi-year maintenance contracts.



Road Maintenance in Africa - Management

- Road agencies often fail to utilise available resources in the most effective way - lack of accountability.
- Political interference is common and corruption rife.
- Private sector capacity developing slowly due to short duration and small size of contracts.
- Examples of good practice tend to be on donor-funded programmes with high levels of TA, but tend to flounder when donor support withdrawn.



Roads Economic Decision Model



Purpose and Objectives of the Project

Purpose

To achieve economic and social benefits for local communities as a result of improved performance in rural road asset management.

Objectives

1. Review literature on existing and recent road management and maintenance programmes; identify 'what works' and 'what doesn't work'.
2. Develop a framework to measure road asset management performance and apply it in the project areas.
3. Develop simple 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 improvements to road asset management performance in the project areas.

Time Frame

27 months



Approach

- Encourage greater accountability of road agencies to road users and other stakeholders.
- Focus more on improved performance in road asset management than on any specific or pre-conceived road asset management system.
- Provide opportunities for the participating road agencies and their stakeholders to improve their own performance.
- Support to the process through demand-led technical assistance.
- Develop a mechanism for participating road agencies to share their experiences (successes and shortcomings) – **Project Implementation Team**
- Use pressure from communities, road users and professional peers to achieve greater accountability in road agencies and increase political support for road maintenance.



Formulation Phase (Nov 2015 to June 2016)

Activities

- Agree objectives, scope, methodology and study team.
- Literature Review.
- Develop detailed methodologies for the:
 - Assessment of asset management performance
 - Measuring road condition
 - Measuring social and economic impacts
- Identify project areas (4).
- Establish Project Implementation Team (PIT).



✓ Final Formulation Phase Report



Project Areas

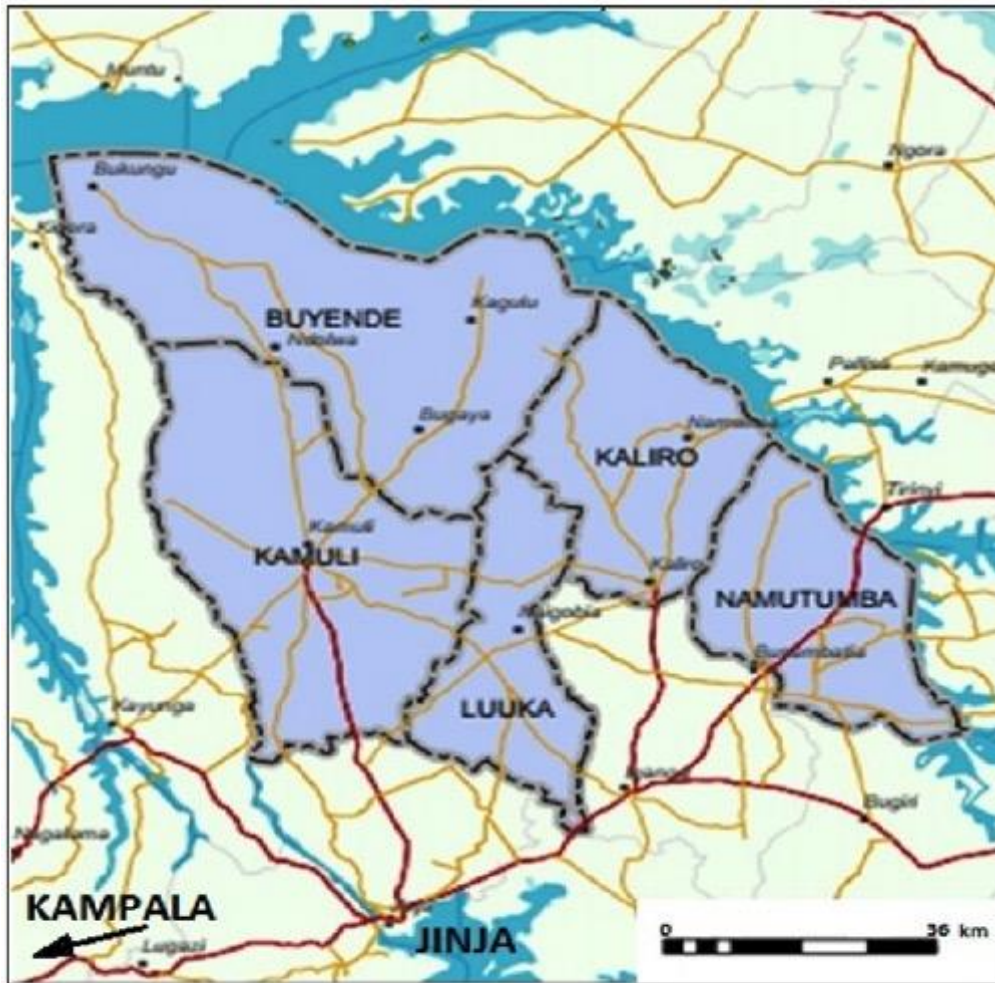
- Three research areas plus example of best practice
- Western Cape identified as adopting best practice
- AFCAP participating countries were invited to submit proposals – why should they participate in the project?
- Selection criteria:
 - Geographical spread
 - Range of existing network management systems
 - Linkages with other AFCAP-funded projects
 - Commitment to provide the required resources and data in the project area
 - Willingness to disseminate the findings of periodic performance reviews.



Project Areas – Zambia Chongwe District



Project Areas – Uganda Kamuli District



Project Areas – Sierra Leone Tonkolili District



Project Areas – Western Cape – Overberg



Self Assessment Questionnaire



Self Assessment Questionnaire (1)

Building Block 3: Financial

Key objective: The achieve stable, adequate and sustainable funding for maintenance.

QUESTION	YES/NO	JUSTIFICATION/COMMENT
3.1 (a) Does the district depend only on the consolidated fund for road maintenance?		
3.1 (b) Is the funding received from the consolidated fund related to road performance?		
3.1 (c) Does the district get a fixed share of its maintenance funding requirement from a Road Fund?		
3.1 (d) Does the district get a variable share of its maintenance funding requirement from the Road Fund that is related to road performance?		

Self Assessment Questionnaire (2)

Building Block 3: Financial

Key objective: The achieve stable, adequate and sustainable funding for maintenance.

QUESTION	YES/NO	JUSTIFICATION/COMMENT
3.2 (a) Is the percentage of the budgeted funding obtained < 30 % of that required?		
3.2 (b) Is the percentage of the budgeted funding obtained 30%- 59% of that required?		
3.2 (c) Is the percentage of the budgeted funding obtained 60% - 89% of that required?		
3.2 (d) Is the percentage of the budgeted funding obtained 90% - 100%of that required?		

Self Assessment Questionnaire (3)

Building Block 3: Financial

Key objective: The achieve stable, adequate and sustainable funding for maintenance.

QUESTION	YES/NO	JUSTIFICATION/COMMENT
3.6 (a) Does the district operate an accounting system?		
3.6 (b) Are the accounts audited annually?		
3.6 (c) Are the accounts published annually?		



Social and Economic Data

10 trading centres / villages selected in each of the participating districts
Collect social and economic data related to road access and transport.



Social and Economic Data

1	Name of trading centre/village
4	Population
5	Distance from nearest paved road
6	Distance from district centre.
10	No. of private transport operators serving the trading centre/village
10.1	Light vehicle
10.2	Bus/combi
10.3	Motorcycle (boda-boda)
12	No. of available trips to district centre per day (on a market day)
12.1	Light vehicle
12.2	bus/combi
12.3	Freight transport /trucks
13	Fares on public transport to the district centre (passenger-km)
13.1	Light vehicle
13.2	Bus/combi
13.3	Motorcycle (boda-boda)

Social and Economic Data

Commodity prices

Prices of three items exported from the village (e.g. potatoes, rice, maize, charcoal)

Prices of three items imported into the village (e.g. petrol, soap, batteries, seed, fertiliser)

Road Safety

Is road safety awareness taught to children at the school?

Are road safety awareness presentations made to adults in the village?

No. of accidents on the road serving the trading centre /village for past year

Health

Average no of health workers at clinic each month for the past year

Is there an ambulance service available from the clinic to the district hospital?



Road Inventory and Condition



Data Item	Units	Reporting Interval
Location Referencing		
• Location referencing (points)		as they occur
• Location referencing (linear)	km + m	
• GPS Centreline coordinates		max 10m
Road Inventory		
Road - General		
• Road Type		when change occurs
• Road Servitude Width	m	
• Cross-Section Width	m	when change occurs
• Pavement Surface Type		when change occurs
• Material Quality		when change occurs
• Pavement Width	m	when change occurs
• Shoulder Type		when change occurs
• Shoulder Width	m	when change occurs
• Side Ditch Type		when change occurs
• Side Ditch Width	m	when change occurs
• Side Ditch Depth	m	when change occurs
Road Furniture		
• Barriers		location
• Signs		location
• Road Markings		location
Cross Drainage Structures		
• Location	Km+m	each
Land Use Type		
		when change occurs
Roadside Features		
• Markets		each
• Clinics		each
• Schools, etc		each
Road Geometry		
• Horizontal Alignment	sharp, L or R	when change occurs
• Vertical Alignment	steep, rolling, flat	when change occurs
Vegetation Type		
		when change occurs
Condition		
Carriageway & Drainage		
• Pavement Roughness	IRI	
• Gravel Loss	degree & extent	5km
• Corrugations	degree & extent	5km
• Potholing	degree & extent	5 km
• Rutting	degree & extent	5 km
• Erosion - Carriageway	degree & extent	5 km
• Erosion - Side Ditches	degree & extent	5 km
Pavement Structure		
• Gravel Loss	degree & extent	
Culverts and Bridges		
• Overall Condition	CI	each
Multi Media		
• ROW Video Logging		
• Digital Images of LRPs		each
• Digital Images of Bridges & Major Structures		each

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.
- Discuss baseline data with sector stakeholders in project areas and PIT.

STAGE 2

- Analyse the strengths and weaknesses of existing systems
- Propose modifications and improvements
- Prepare guidelines/training courses
- Technical back-up support and mentoring.

STAGE 3

- Repeat the self assessments and performance monitoring
- Discuss the monitoring outcome findings with sector stakeholders and PIT.



Implementation Phase

- **All local costs for data collection must be met by the participating country**
- **AFCAP is providing for:**
 - **Technical assistance to develop the research instruments**
 - **Technical assistance to participating road agencies to improve their network management arrangements**
 - **Cost of participation in the PIT meetings.**

Vision

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 within the same country.



Vision – A role for ARMFA?

Given that:

- The project will demonstrate the benefits of improved management and maintenance of rural roads.
- The project will provide a mechanism to achieve improved performance in roads agencies.
- The approach can be rolled out in more countries.
- The current project support from AFCAP only to end of 2017.

Could ARMFA secretariat take responsibility for:

- ✓ **facilitating entry of new countries?**
- ✓ **coordination of the annual PIT meetings?**

