



ReCAP
Research for Community Access Partnership



Baseline survey of past and current road sector research undertakings in Uganda and establishment of electronic document management system (EDMS)

Workshop 1 Report



Aurecon AMEI Limited

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aurecon

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Abstract

The purpose of this project is to carry out a baseline survey of past and current research that has been undertaken on the roads sector in Uganda, and to establish a databank that enables access to such research. The study commenced on 22 November 2016.

This document presents the report on the Workshop 1 that was held on 9 February 2017 in Kampala. The report captures the presentations that were made at the Workshop, the feedback received and the results of the group discussions held.

Key words

Baseline survey, road sector research, electronic document management system

RESEARCH FOR COMMUNITY ACCESS PARTNERSHIP (ReCAP)

Safe and sustainable transport for rural communities

ReCAP is a research programme, funded by UK Aid, with the aim of promoting safe and sustainable transport for rural communities in Africa and Asia. ReCAP comprises the Africa Community Access Partnership (AfCAP) and the Asia Community Access Partnership (AsCAP). These partnerships support knowledge sharing between participating countries in order to enhance the uptake of low cost, proven solutions for rural access that maximise the use of local resources. The ReCAP programme is managed by Cardno Emerging Markets (UK) Ltd.

Acronyms, Units and Currencies

AfCAP	Africa Community Access Programme
CML	Central Materials Laboratory
DFID	Department for International Development
EDMS	Electronic document management system
KCCA	Kampala Capital City Authority
MELTC	Mt. Elgon Labour Based Training Centre
MoLG	Ministry of Local Government
MoWT	Ministry of Works and Transport
MWE	Ministry of Water and Environment, Directorate of Water Resources Management
ReCAP	Research for Community Access partnership
NWSC	National Water and Sewage Corporation
RMS	Research Management System
TOR	Terms of Reference
TT	Technology Transfer
UIPE	Uganda Institution of Professional Engineers
UK	United Kingdom
UNCST	Uganda National Council for Science and Technology
UNRA	Uganda National Roads Authority
URF	Uganda Road Fund

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1 Executive summary

The purpose of this project is to carry out a baseline survey of past and current research that has been undertaken on the roads sector in Uganda, and to establish a databank that enables access to such research. The study commenced on 22 November 2016.

This document presents the report on the Workshop 1 that was held on 9 February 2017 in Kampala. The report captures the presentations that were made at the Workshop, the feedback received and the results of the group discussions held.

The report also captures the major outcomes from the workshop and the wrap-meeting that was held between the client and the consultancy team after the workshop. Some clarifications are presented on the requirements for the field visits and the content of the Draft Final Report.

2 Introduction

2.1 Background

One of the challenges facing the roads sector in Uganda is the absence of consistent, continuous and coordinated research. Various national institutions and agencies have undertaken research in the road sector, including Makerere University, the Uganda National Roads Authority (UNRA), Mt. Elgon Labour Based Training Centre (MELTC), the Central Materials Laboratory, and individual researchers. However, there is currently no databank where research is consolidated and indexed, and accessible to all stakeholders.

The Africa Community Access Partnership (AfCAP) is a programme of research and knowledge dissemination funded by the UK government through the Department for International Development (DFID). Cardno Emerging Markets (UK) Ltd has been contracted to do the management of the AFCAP2 and Asia Community Access Partnership (AsCAP) under the Research for Community Access partnership (ReCAP) umbrella. The AfCAP National Steering Committee has placed high priority on knowledge management as a tool to coordinate road research undertakings, and to avoid duplication of research. AfCAP accepted a request from UNRA for support to carry out a baseline survey of past and current road sector research undertakings in Uganda.

Cardno appointed Aurecon AMEI Limited to carry out the baseline survey of past and current road sector research undertakings in Uganda and to establish an electronic document management system (“databank”) that is accessible to stakeholders. The study commenced on 22 November 2016.

This document presents the **Workshop 1 Report** for the study, following the workshop that was held on 9 February 2017 in Kampala.

2.2 Project objectives

The purpose of this project is to carry out a baseline survey of past and current research that has been undertaken on the roads sector in Uganda, and to establish a databank that enables access to such research.

To achieve this purpose, the study comprises of the following main tasks:

1. Review and compile a listing of past and current research that has been undertaken on the roads sector in Uganda;
2. Analyse and categorise past and current research undertakings to outline items such as:
 - a. Methodology/ approach followed;
 - b. Controls exercised;
 - c. Institutions involved;
 - d. Competence of researchers;
 - e. Research findings.
3. Comment on the reliability of research undertakings;
4. Undertake a gap analysis to identify and prioritise research knowledge gaps;
5. Assess the prevailing modes of knowledge management;
6. Develop an implementation plan for the establishment of a centralized knowledge base (databank) of research undertakings within the road sub-sector;

7. The target audience is a broad range of stakeholders including current and future researchers, practitioners, academia, road policy and decision makers, and the general public.

2.3 Project methodology

The methodology was structured around the objectives and specific tasks stipulated in the Terms of Reference (TOR). The study consists of three main components, namely:

1. A process of identifying and consulting with research institutions, organisations or individuals;
2. A process of gathering research material, ordering/ categorising it, evaluating it on the basis of a predetermined set of criteria, and drawing some conclusions;
3. Designing and implementing a databank.

The broad approach for conducting this study is illustrated in the Figure 1 below.

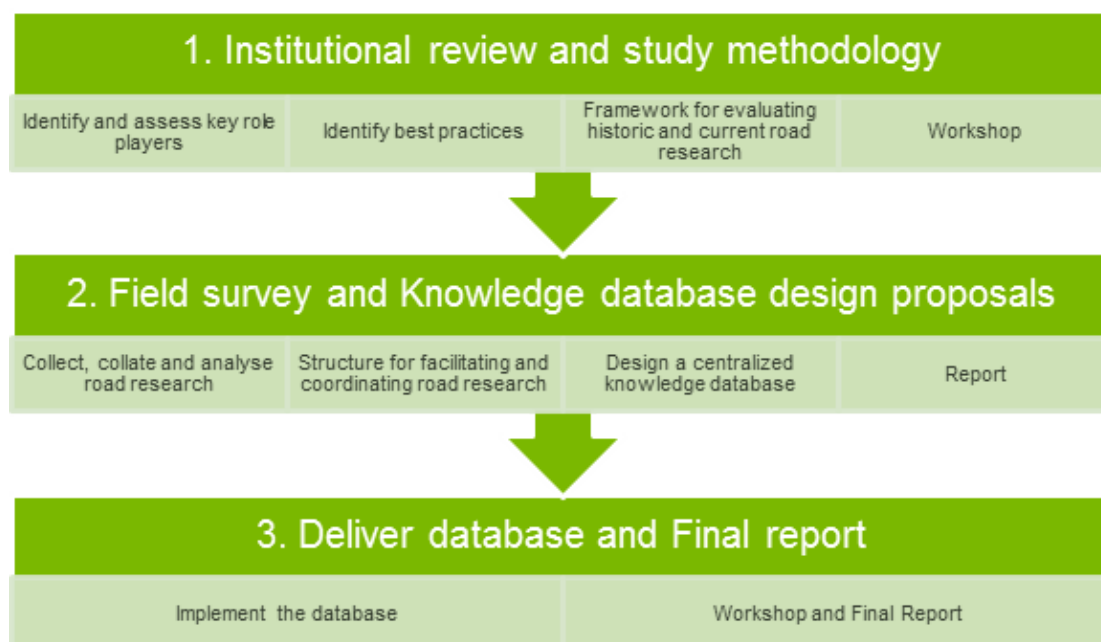


Figure 1: Broad approach to the study

2.4 Structure of the report

The rest of the report is structured as follows:

- Chapter 3 presents the objectives of the workshop, and describes the arrangements and programme of the workshop;
- Chapter 4 provides background on the questionnaires that were distributed to the workshop, and on the consultation process that took place during January and February 2017 prior to the Workshop;
- Chapter 5 presents the content of the Workshop, in the form of the presentations made and notes on the discussions that took place during the workshop;
- Chapter 6 presents the major outcomes of the Workshop.

3 Workshop objectives and arrangements

The purpose of the workshop was as follows:

- To present the findings of Phase 1 of the study, specifically the institutional involvement in road sector research, the current levels of sharing and dissemination of research, and best practices with regards to structuring and managing road research;
- To obtain input from all stakeholders with regards to the requirements of an Electronic Document Management System (EDMS), and the appropriate platforms to share road sector research;
- To obtain buy-in from all stakeholders into the proposed Electronic Document Management System (EDMS).
- To present study methodology and draft implementation programme going forward for stakeholder endorsement.

The workshop was scheduled for Thursday 9 February 2017, to be held at the offices of UNRA and the Ministry of Works, at Kyambogo.

The following stakeholders were invited to the workshop:

1. Uganda National Roads Authority (UNRA)
2. Makerere University
3. Ndejje University
4. Kyambogo University
5. Ministry of Works and Transport (MoWT)
6. Mount Elgon Labour Based Training Centre (MELTC)
7. Central Materials Laboratory, Kireka (CML)
8. Kampala Capital City Authority (KCCA)
9. Uganda National Council of Science and Technology (UNCST)
10. Uganda Road Fund (URF)
11. Ministry of Water and Environment, Directorate of Water Resources Management (MWE)
12. Ministry of Local Government (MoLG)
13. Uganda Institution of Professional Engineers (UIPE)
14. Uganda clearing industry and forwarding association

The workshop programme is indicated in Table 1 below.

Table 1: Workshop programme

Agenda			
No	Topic	Time	Responsible
1	Arrival	08:30-09:00	-
2	Opening and Welcome	09:00-09:30	UNRA/Cardno
3	Project methodology and programme	09:30-10:00	Aurecon (A Moolman)
4	Current structure of road research in	10:00-10:30	Aurecon/University

Agenda			
No	Topic	Time	Responsible
	Uganda Best practices		Pretoria (A Moolman and W Steyn)
5	TEA BREAK	10:30-10:50	
	Current structure of road research in Uganda Best practices (continued)	10:50-11:30	Aurecon/University Pretoria (A Moolman and W Steyn)
6	Framework for capturing research	11:30-12:00	University Pretoria (W Steyn)
7	Group discussion	12:00-13:00	All

4 Questionnaires

Questionnaires were prepared for distribution to stakeholders, to investigate the following aspects:

- The extent to which each stakeholder conducts road related research;
- Each stakeholder's level of interest in road related research;
- Stakeholders' views on road research in Uganda;
- Issues or challenges experienced by stakeholders with regards to coordination of road research;
- Stakeholders' requirements for a centralised knowledge database;
- Stakeholders' use of computer systems, applications, and internet.

Questionnaires were distributed to various stakeholders¹ during middle December 2016. The consultancy team followed up with all stakeholders during January 2017, and also conducted meetings with a number of stakeholders during the week of 30 January to 3 February 2017, to discuss and complete the questionnaires. The stakeholders that were consulted during this week and/or who submitted questionnaires before the workshop, are listed below.

- Ministry of Works and Transport (MoWT)
 - Kampala office;
 - MELTC;
 - Central materials laboratory.
- UNRA;
- Uganda Road Fund;
- Makerere University;
- Ndejje University.

Questionnaires for MELTC, Central materials laboratory, Uganda Road Fund, Makerere University and Ndejje University are attached in Annexure A². This Annexure also includes a summary questionnaire showing the combined input of all of the five stakeholders mentioned above.

¹ Uganda National Council for Science and Technology (UNCST), Mount Elgon Labour Based Training Centre (MELTC), Central Materials Laboratory (CML), Uganda Road Fund (URF), Kampala Capital City Authority (KCCA), Ministry of Works and Transport (MoWT)

² The meeting with UNRA focussed more on the pool of stakeholders to be consulted, while the meeting with MoWT head office focussed more on an existing transport database that they operate. These organisations have however also been requested to complete a questionnaire.

5 Workshop

5.1 Participants

The following organisations were represented at the workshop:

1. Uganda National Roads Authority (UNRA)
2. Ndejje University
3. Kyambogo University
4. Ministry of Works and Transport (MoWT)
5. Mount Elgon Labour Based Training Centre (MELTC)
6. Kampala Capital City Authority (KCCA)
7. Uganda Road Fund (URF)
8. Ministry of Local Government (MoLG)
9. Uganda Institution of Professional Engineers (UIPE)

The attendance register for the workshop is attached in Annexure B.

5.2 Presentations

Presentations were made by Dr. Mark Rubarenzya from UNRA, and by Mr. Nkululeko Leta from the ReCAP Project Management Unit. Dr. Rubarenzya introduced the project to the audience, and described the need for the project. Mr. Leta described the objectives of the AfCAP and ReCAP.

This was followed by a presentation by the consultancy team consisting of Aurecon AMEI Limited and University of Pretoria. The presentation focussed on the following items:

- An introduction to the way the project has been structured and will be carried out (methodology), as well as the time schedule;
- A review of the organisations currently involved in, or that has interest in road research in Uganda. The presentation specifically gave feedback on the feedback obtained from consultations with such organisations, and gave insight into the extent of road research in the country, the extent of liaison and planning between organisations, challenges experienced and basic requirements of an EDMS;
- An overview of best practices in the managing and communication of research, and a look at existing platforms that can be used to share research and to search for research;
- Topics for group discussions;
- A summarised proposal for the research framework that can be applied in Uganda.

The presentations made during the workshop are provided in Annexure C of this report.

5.3 Notes from workshop

The discussions during the Workshop 1 for the project “Baseline Survey of Past and Current Road Sector Research Undertakings in Uganda and Establishment of Electronic Document Management System (EDMS)”, held on 9 February 2017 were noted and are summarised in this section. In Section 6 preliminary responses are provided for selected issues as part of the outcomes of the workshop. Detailed response and action on the issues will form part of the Draft Final Report.

The following issues were raised by different attendants of the workshop:

- The current project needs to provide recommendations for further projects that will steer the research in Uganda, in line with the Terms of Reference for the project;
- A clear need exists to define in this project what is included within the scope of research, and what type of actions and outputs are defined as being outside of the scope of research;
- It was noted that universities provide a valuable role in road sector research, and will probably accommodate most of the existing road sector research in Uganda. Makerere and Kyambogo Universities have been involved in road sector research for quite some time as of date. The Ndejje University however only recently commenced research in the road sector;
- It was proposed that Aurecon needs to contact Crossroads or Uganda Road Fund to obtain all the research Crossroads has done in the past in the Uganda road sector (Dr. Mark Rubarenzya will provide the contact of the Crossroads contact person);
- It was noted that organisations such as the Uganda National Bureau of Standards, TRL, and the Roads Industry Council have been involved in research in the road sector previously and Aurecon was advised to reach out to these organisations to obtain information on this research;
- It was noted that the National Technology Conference is a conference organised annually by the Uganda Institution of Professional Engineers (UIPE) where research is presented and published as books that are shared with the participants. It appears that the research is not verified research;
- The Uganda Road Fund undertook to share their draft research manual for Road Maintenance projects with the consultancy team;
- Aurecon was requested to demonstrate which other research models had been considered and what factors led to the disqualification of the other models before settling for the Technology Tree (TT) model. It was discussed that the TT model incorporates most other models as it has been completed in the last 5 years as a comprehensive model. Other models addresses aspects of the complete model (e.g. only classification of research, only research or implementation, etc.);
- The client suggested that the consultancy team discuss the way forward, and what is required from the different stakeholders. Mr. Moolman presented the timeline, future deliverables and the immediate actions following the workshop;
- The need for field visits, specifically to trial sections around the country, was discussed. MELTC and UNRA gave feedback on trial sections implemented by them during recent years. It was suggested that the type of trial sections involved will be evaluated once information regarding these sections have been collected, and appropriate sections that can be defined as constituting research be included in field visits. Criteria for research field sections will be developed as part of the preparations for the visits to ensure that appropriate objective criteria be used for the evaluation of such sections in the study;
- Dr. Rubarenzya noted that the project consultant needs to recommend an institutional research structure that UNRA could implement to be able to successfully carry out research in Uganda. Dr. Rubarenzya will arrange for Aurecon to meet up with the National Water and Sewage Corporation (NWSC) to obtain their research structure, as it is deemed as one of the organisations in Uganda with a very good research structure;

During the workshop, plans regarding site visits were discussed. It was agreed that a need exists to make recommendations regarding the future of selected existing sections and work conducted on these sections, as the information obtained from appropriately designed and

monitored field sections can contribute in a significant manner to the implementation of road research. The consultancy team will contact the relevant parties and plan specific visits to appropriate test sections. In preparation for these visits definitions will be developed for research in general, as well as different types of field sections to ensure that appropriate sites are visited and incorporated into the study. Possible field section designations may include training, demonstration, and research sections. The specific definitions will be developed before commencing on the specific site visits. Sections constructed as part of MELTC and UNRA projects will be included in possible sites for visits and evaluation. The project is not providing specific technical advice on specific research projects and rather needs to guide and steer the bigger picture around roads research, but through taking consideration of relevant research.

5.4 Feedback from group discussions

The following cryptic notes were collected from the two group discussions that were held as part of the workshop:

Discussion topic for Group 1: “the structure of road research in Uganda”

- **Question:** Where should the EDMS be hosted?
Consolidated answer: Either at UNRA or Uganda Road Fund
- **Question:** What are the possible challenges that you foresee in the implementation of the EDMS?
Consolidated answer: Access control, Mandate, Resources
- **Question:** Who should perform quality control?
Consolidated answer: Pool of people/ ad-hoc committee suitably qualified
- **Question:** What funding sources can be considered for hosting, operational resources, maintenance?
Consolidated answer: Subscription fee can be considered.
- **Question:** What platform should be used to discuss, plan, disseminate and apply research?
Consolidated answer: Universities and research institutions, the Sector Working Group, or a sub-sector committee of Sector Working group focused on research. The composition of the sub-sector committee should be such that it is capable and has the technical background to manage and monitor research. The sub-committee should be open to members of the road industry that are not necessarily members of the Sector Working Group.
- **Question:** Any other comments on functionality of the EDMS?
Consolidated answer: Requirement for Dash board: A tool is required to comment on any research.

Discussion topic for Group 2: “requirements for the EDMS”

- **Question:** What do you see as the main functions of the system?
Consolidated answer: The group agreed with the view that the EDMS should really be used to manage research (in addition to the basic function of listing and directing

you to research previously or currently conducted). The group therefore proposed that the EDMS should rather be named the Research Management System (RMS).

- **Question:** What are the main categories of research you would like to see?
Consolidated answer: The group supported the items that were proposed in the presentation, namely:
 - Traffic
 - Material
 - Natural environment
 - Pavement structure
 - Design
 - Construction
 - Management
 - Maintenance and rehabilitationThe group however recommended that Road Safety be considered as an additional item.

- **Question:** What are the main items you would like to see for each research item?
Consolidated answer: The group supported the items that were proposed in the presentation, namely:
 - Author
 - Year
 - Subject
 - Key words
 - Organization
 - Synopsis
 - Field (category)
 - Geographical area/ location
 - Journal or conference (if published)

- **Question:** Do you have any specific user requirements? (such as accessibility, viewing of data, dashboard, reporting on metadata)?
Consolidated answer:
 - The EDMS needs to be accessed by both the public and other stakeholders;
 - As a registered stakeholder, you should be able to contribute towards the system, and manage the research you have submitted;
 - Registered members should be awarded a trust threshold by a suitably qualified UNRA official. In line with this, new registrations should go through a process of being rated as a researcher (in order to assist with the quality control process);
 - Members would like to filter projects based on keywords;
 - Members would like to search for projects using a forgiving search mechanism;
 - Shapefiles will need to overlay interest areas as a spatial view of resources is required;
 - A workflow (programmed into the system) is needed to drive content and information updates;

- **Question:** Where should the EDMS be hosted?
Consolidated answer: UNRA should ideally host the EDMS

6 Outcomes

The major outcomes from the workshop and related discussions are summarised as follows:

- The workshop attendees voiced their general support for the project and the intended actions planned for the project;
- In-principle agreement was obtained from the attendees for selected experimental site visits to verify selected research. Sites will be selected based on input from the workshop attendees as discussed in Section 5.3;
- A simplified Technology Tree (TT) model as a basis for the research evaluation was agreed upon;
- The proposed focus areas for road research (Traffic, Material, Natural environment, Pavement structure, Design, Construction, Management, Maintenance & Rehabilitation) were acceptable to attendees;
- Attendees confirmed their ability and willingness to participate in the data / research output collection process;
- Attendees agreed on the data fields to be used in the database. Most of these had been proposed by the service provider;
- Attendees approved of the way forward focusing on the collection of available research while attending to those matters arising in the workshop and group discussions.

During the discussions the definitions of research was discussed to provide context to the collection of information and identification of sites for field visits. A broad definition of research being “work where new knowledge is generated” was discussed. Such a definition will allow for all types of research (desktop, laboratory studies, field studies, etc.) and distinguish between research and mere collection of data as is typically done through quality control programmes as part of road construction, maintenance and rehabilitation. A more detailed definition, based on international understanding, will be provided for the project report.

A wrap-meeting was held between UNRA, AfCAP and the consultancy team and the following were discussed and agreed on:

- The draft final report should have initial recommendations (including definitions of research and sites – normal construction versus training versus research sections etc. based on international definitions);
- Examples of the research process in support of the proposed definitions (e.g. planning, research, data analysis, review, publish - new knowledge) needs to be provided and clarity is needed in terms of outputs such as technical project reports and normal quality control test data that are outside the scope of research. It was noted that such data can become research if the required analysis, publication, and knowledge development takes place;
- A decision regarding appropriate site to visit will be made once most data are received and analysed to ensure that appropriate and applicable sites are identified;
- The institutional structuring of the research function needs to be addressed and a proposal made to UNRA for their research department. Some examples of other research institutions should be considered. Examples such as the Ethiopia Research Centre, National Water and Sewage Corporation, IMC / Crossroads, and other relevant examples should be consulted for appropriate and applicable structure information.

Annexure A – Questionnaires

SUMMARY OF ALL QUESTIONNAIRES received to date

1. Please name your organization. How would you describe your role and responsibilities in your organisation?

Summary of all Questionnaire participants

2. Does your organisation generate any road related research? Select your answer with a tick or 'X'

Yes	No
-----	----

Who?

Government Department

Students and staff

Fund road research

They provide the funds to their agencies (UNRA, Districts and Municipalities). The agents procure the research through research institutions, e.g. Universities). The agents enter into a MOU with the research institutions. They have placed research funding on hold while they are developing a research manual to set out the standards required of the research. Once in place URF provide funding for research again and also approve their own research projects as Board special projects.

Students and staff

Training Centre, Consultant (TRL), District Local Governments

a. What type of research?

Papers presented at conferences

Research conducted as part of post-graduate studies

Applied research (trial sections) carried out by research organizations and other international consulting firms in the past years

Materials, design, traffic management

Low cost seals

The question about what type is bound to be interpreted differently by the respondents. Whereas one colleague of mine in the area pointed out "pavement materials & pavement preservation and management" as types; Umaru preferred to look at it as either applied or fundamental/basic research. At the graduate level, we have 2 types of plans for masters students, Plan A students together with doctoral students are involved in fundamental research; Plan B students are involved in applied research. I'm open to further consultation if need be.

Low cost sealing options for low volume roads

Community access research (Stone arch bridges, ladders and steps)

b. Is it published?

Yes	No
-----	----

Seldom

No. Reports are available, but the follow up actions to conclude the studies are not always done
90% of the time No, 10%yes as conference papers etc.

c. How is research verified?

Post graduate study reports are verified by respective Technical Institutions; while Papers and Applied Research reports are usually presented to relevant stakeholder for a

Reviews of lecturers

Research are validated through the Sector Working Group that sits twice a year. If they approve the study it will be recommended for duplication and validation.

External examiner

Testing and observation

d. Where is it kept?

Reports are kept by respective Institutions; Individuals, and sometimes at the Laboratory;

In an office, hard copy

On his laptop. Example he sits with all the reports from Crossroads (pdf reports) on his laptop.

Crossroads concluded their research. Ideally MORT should house the research. The ministry created an internet based Transport Sector Data Management System two years ago but is not active yet. This is available to members of the Sector Working Group. a EDMS could use this platform. The Engineering department used to have their own library, but the libraries have been centralised.. Students are supposed to give three copies, one for the lecturer and one for the library. Recently a CD copy has been added.
In MELTC offices and Library

e. How is it accessed?

On request
It is a hassle. Somebody will have to go and physically search for it.
Through him. By word of mouth others hear of it.
Through the central library. ? Each student is meant to produce a report , apparently with a CD; So one can either access this from the Library, from the directorate of research and graduate training and at college level
On request and retrieved by officers or the librarian at MELTC

f. How often is your research accessed?

Seldom
UNRA sometimes asks
High level requests, for example was the research done and completed. Seldom that someone asked for details.
Not sure

g. What meta-road data/research is available with your research?

Pdf only – some tables at the back of the report. Storing electronically will be a good idea.
None.
Only pdfs of reports
Scanned reports, some electronically

h. Is your data / research geo-tagged? (locations)

Yes No

Only chainages that can be linked to GPS coordinates
No.
Chainages of trial sections are available and can be traced

i. Is your data/research confidential?

Yes No

j. Would you be interested in uploading your data/research to a centralised databank? Why?

Yes No

For wider access and better coordination
Yes, in order to synchronise research and avoid duplication.
Yes. For Easy access

k. Do you access your research on-site? Please describe your answer.

Yes No

There is lack of a data base facility
Yes and no. No electronically. Have to search in an office. Library? Ndejje no not kept there. Some research is available online, but not on roads research, unless it was presented at a conference.
Yes on his computer, theoretically TSDMS too (anyone in the Sector)
Can find info from Vincent Ssozi – statistician from MORW – 02356 772320034, 0256700390415
ssoziv@gmail.com
Not at the desktop, since only abstracts have been captured. One could however walk to the library for access (if one is a student or member of staff); As to the public, I suspect one has to go through formal channels for this type of access.

No. It is not yet uploaded on the website

3. How would you describe your interest in road related research?

Very high

Immensely high; the majority of students currently undertaking Master's program (almost 70%) are all pursuing research in this field.

Very high interest

a. What specific type of research, or topics are you interested in?

Innovations in road construction materials to improve on quality, performance, and reduce construction/maintenance costs;

Materials, design aspects (geometric design), transportation, transport management, sustainability

Low cost sealing of roads

Performance of sealed roads

Community access (stone arch bridges, ladders and steps)

Unit costs of road maintenance

b. How can you use it?

By disseminating the information to the Construction Industry;

Advise government, both central and local, designs, students for continuity of research

Useful to avoid duplication

Use resources better

Different alternatives to use, challenge to fund materials in Uganda.

Students for research

For planning maintenance strategies

Exploitation of the use of local materials

c. What do you use at the moment (in the absence of a consolidated database)?

Piece meal dissemination of information to respective Agencies in the Road Sector;

Memory, guessing

National policy – that they cannot introduce a technology by yourself, there needs to be a standard before you can use a new technology.

Library

Existing manuals

Literature on the internet

d. To what extent does the research contribute to your work? (in terms of outcomes)

Very substantial; more than 60%;

Research outputs (to be published) and quality of work – which is an integral part of the work of a university and lecturer.

Significant – core to road construction and maintenance, effectiveness of programmes. Whether URF money is well spent.

Students use for topics for research. Some are given topics from lecturers and others choose their own

Less than 25%

4. What is your view on road research in the country, currently?

A high priority but very poorly resourced;

Need more research, more organised, more findings and get it moving

Not organised in the way we do it.

Fail to replicate, can save money and cover more areas of research

For example ConAid comes to Uganda and approached different agencies and they all do research on ConAid but do not talk to each other.

Umaru's view is that it's fair.

Not well coordinated

Not rolled out
 Little funds are allocated
 Some findings are not published

a. Do you have access to any road research? If yes, where and how?

Yes	No
-----	----

By collaborating with similar Research Institutions;
 Online and is restricted
 Yes, Crossroads.
 Yes. Library e-resources and previous reports can be accessed by the students
 Through: The internet
 Journals
 Papers presented at conferences like the national technology conference

b. Do you know who generates research, and how to get it?

Yes	No
-----	----

As in (a) above
 Makerere University
 Yes and no. sector working group have to approved research. Reviews are done 2x a year. Each agency have a window to present their findings of research. They give the Universities the opportunities to present.
 Yes. Ministry of works and Transport; Local governments and Municipalities and some NGOs (like Crossroads...not sure I got it well...please follow this up)
 Institutions
 Academicians
 Companies
 Organizations

c. Who do you normally partner with, if you need research?

Academic Institutions; Stakeholders in the Sector;
 Makere University
 Students works in groups of 2
 With their agencies who puts out the research, eg Univ.
 Private sectors
 Government ministries
 & don't forget the collaborating academic institutions, through which many our staff have been supported to obtain doctoral degrees
 Consultants
 Sister Labour based institutions
 Organizations
 District Local Governments

d. Do you have any existing platforms/ communication channels for interaction and coordination with other key role players, related to road research?

Yes	No
-----	----

Yes, sector working group. TSDMS is a possible platform
 Existing platforms for this interaction
 Normally through an MOU apparently that has to be signed by the vice chancellor, legal director and the college principal.
 UIPE gatherings
 Technology conferences
 Exhibitions

e. Are you aware of any attempts in the past to formalise this? Can you provide details?

Yes	No
-----	----

Exchange of letters; meetings; etc.;

f. What is your view on the level of dissemination of research recommendations currently, in Uganda?

The level is very low mostly due to poor resource allocations to facilitate the process;
Limited, through journals and conferences
Very low
Low

g. What is your view on the level of uptake of research recommendations currently, in Uganda?

The level of uptake is comparatively high;
Slow
Where they get stuck – in the process to approve by Ministry to roll out
Low

h. How would you describe the overall quality of road research in Uganda?

The quality is fair in view of the challenges prevailing;
Varies on the level from undergraduate to Masters to Phd. All for qualification purposes
Average. As research are done under constrained conditions.
I'm getting many comments from fair to very bad. Umaru's view is that it's fair.
Requires improvement

5. Can you list any issues or challenges preventing coordination of research (e.g. institutional, organisational, technical, logistical or financial issues);

Mainly logistical/financial issues;
Lecturers are busy with academic workload
Funding
Do research to earn a degree
Approach not organized.
Approval of technologies – process is slow
Funding is a challenge
Products marketed in Uganda are from other countries. They do not trust the integrity of the products and companies (suppliers). Products are registered trademarks eg ConAid. Cannot test products and believe that they will receive the same contents in each drum supplied. Do not have the capacity to do quality testing
Too disconnected. Multiple sponsors. Need a centralized player to coordinate at a higher level
Lack of a coordinating body
Limited funding
Limited logistics

a. What, if any, frustrations do you have with the available road data / research? (e.g. relevance, reliability, accuracy, completeness, complicated filters)

Most times they are incomplete!
Relevance, reliability, completeness
Stagnation of research, stagnant after trials are completed.
Whereas we can easily access our research outputs, it's very hard to know what other agencies are doing in road research unless we are in a direct partnership (one for the access!);
Frustration exists when there it is difficult to find a single research which satisfies the above

b. Have you ever utilised a centralised knowledge database. If so, please describe your general experience with centralised knowledge databases. What works well and what does not?

Yes No

Directly to bring the cost down of rural roads
Research done on the saliva of termites (reconstructed by biochemists and proven to be cost effective

6. How should a centralised knowledge database enable your work?

By serving as a one-stop-centre!
Easier to obtain information – save time.
Quality of research output
Should be easy to access information
Try to scan for possible users and their needs
Fast access of relevant information of interest
Information being readily available on the website and updated regularly

a. When retrieving data from the system what would you like to see?

All the relevant data: the objective; what has been done; any gaps; etc.;
Title, author(s), where (region), published in a journal or conference
Multi-layered – key words. Location, abstract, full report. Types of materials. Kinds of tests carried out and tools used. Costs. Conditions (environment),
Field, year, key words, author, geographical area, related projects, abstract, objective, methodology,
Topic of research and when it was published

b. How do you envisage using a centralised knowledge database? (e.g. remembering previous searches)

As being capable of providing easy and fast access to information any minimize duplication of efforts!

Remember previous searches
Information easy to access. Easy dissemination, easy to publish or forward to others.
Remember previous searches
Typing in key words and related research appears

c. What fields would you be interested in for searching data/research (e.g. author, organisation)

Author, Organization, Subject, Materials, Technology, etc.;
See (a)
Multi-layered – key words. Location, abstract, full report. Types of materials. Kinds of tests carried out and tools used. Costs. Conditions (environment)
Topic

d. Would you be interested in viewing a quality/trust rating for data/research? Why?

Yes	No
-----	----

for faster choice of alternatives;
Yes, if Ministry approved, material for use
Gives confidence in the data but it should be vetted before uploading

7. How often do you use computer systems / applications / internet?

Always!
Daily
Monthly

a. How do you typically access the internet? (Desktop, mobile, tablet)?

Laptop Computer; Mobile phones; iPad; Desktop
All three

b. On what type of platform would you access a database (desktop, mobile, tablet)?

As in (a) above;

c. How often do you use Facebook, Twitter, or other social media applications? And how do you access these?

Quite often!
Yes

d. Would you be interested in a single sign on to the database?

Baseline survey of past and current road sector research undertakings in Uganda and establishment of electronic document management system (EDMS)

<u>Yes</u>	<u>No</u>

CENTRAL MATERIALS LABORATORY

1. Please name your organization. How would you describe your role and responsibilities in your organisation?

The Central Materials Laboratory, Kireka, in the Department of Construction Standards and Quality Management, Ministry of Works and Transport, Kampala. I am the Head of the Department

2. Does your organisation generate any road related research? Select your answer with a tick or 'X'

Yes No

Who?

Government Department

a. What type of research?

- Papers presented at conferences;
- Research conducted as part of post-graduate studies;
- Applied research (trial sections) carried out by research organisations and other international consulting firms in the past years;

b. Is it published?

Yes No

x

c. How is research verified?

Post graduate study reports are verified by respective Technical Institutions; while Papers and Applied Research reports are usually presented to relevant stakeholder for a;

d. Where is it kept?

Reports are kept by respective Institutions; Individuals, and sometimes at the Laboratory;

e. How is it accessed?

On request

f. How often is your research accessed?

g. What meta-road data/research is available with your research?

h. Is your data / research geo-tagged? (locations)

Yes No

X

i. Is your data/research confidential?

Yes No

x

j. Would you be interested in uploading your data/research to a centralised databank? Why?

Yes No

✓ ; For wider access and better coordination

k. Do you access your research on-site? Please describe your answer.

Yes No

X; there is lack of a data base facility

3. How would you describe your interest in road related research?

Very high!

a. What specific type of research, or topics are you interested in?

Innovations in road construction materials to improve on quality, performance, and reduce construction/maintenance costs;

b. How can you use it?

By disseminating the information to the Construction Industry;

c. What do you use at the moment (in the absence of a consolidated database)?

Piece meal dissemination of information to respective Agencies in the Road Sector;

d. To what extent does the research contribute to your work? (in terms of outcomes)

Very substantial; more than 60%;

4. What is your view on road research in the country, currently?

A high priority but very poorly resourced;

a. Do you have access to any road research? If yes, where and how?

Yes No

; By collaborating with similar Research Institutions;

b. Do you know who generates research, and how to get it?

Yes No

; As in (a) above

c. Who do you normally partner with, if you need research?

Academic Institutions; Stakeholders in the Sector;

d. Do you have any existing platforms/ communication channels for interaction and coordination with other key role players, related to road research?

Yes No

X

e. Are you aware of any attempts in the past to formalise this? Can you provide details?

Yes No

; Exchange of letters; meetings; etc.;

f. What is your view on the level of dissemination of research recommendations currently, in Uganda?

The level is very low mostly due to poor resource allocations to facilitate the process;

g. What is your view on the level of uptake of research recommendations currently, in Uganda?

The level of uptake is comparatively high;

h. How would you describe the overall quality of road research in Uganda?

The quality is fair in view of the challenges prevailing;

5. Can you list any issues or challenges preventing coordination of research (e.g. institutional, organisational, technical, logistical or financial issues);

Mainly logistical/financial issues;

a. What, if any, frustrations do you have with the available road data / research? (e.g. relevance, reliability, accuracy, completeness, complicated filters)

Most times they are incomplete!

b. Have you ever utilised a centralised knowledge database. If so, please describe your general experience with centralised knowledge databases. What works well and what does not?

Yes No

X

6. How should a centralised knowledge database enable your work?

By serving as a one-stop-centre!

a. When retrieving data from the system what would you like to see?

All the relevant data: the objective; what has been done; any gaps; etc.;

b. How do you envisage using a centralised knowledge database? (e.g. remembering previous searches)

As being capable of providing easy and fast access to information any minimize duplication of efforts!

c. What fields would you be interested in for searching data/research (e.g. author, organisation)

Author, Organization, Subject, Materials, Technology, etc.;

d. Would you be interested in viewing a quality/trust rating for data/research? Why?

Yes	No
-----	----

✓ ; for faster choice of alternatives;

7. How often do you use computer systems / applications / internet?

Always!

a. How do you typically access the internet? (Desktop, mobile, tablet)?

Laptop Computer; Mobile phones; iPad;

b. On what type of platform would you access a database (desktop, mobile, tablet)?

As in (a) above;

c. How often do you use Facebook, Twitter, or other social media applications? And how do you access these?

Quite often!

d. Would you be interested in a single sign on to the database?

Yes	No
-----	----

✓

NDEJJE UNIVERSITY

1. Please name your organization. How would you describe your role and responsibilities in your organisation?

Dr Albert Rugumayo. Lecturer and Dean of Ndejje University.

2. Does your organisation generate any road related research? Select your answer with a tick or 'X'

Yes No

Yes

a. Who?

Students and staff

b. What type of research?

Materials, design, traffic management

c. Is it published?

Yes No

Seldom

d. How is research verified?

Reviews of lecturers

e. Where is it kept?

In an office, hard copy

f. How is it accessed?

It is a hassle. Somebody will have to go a physically search for it.

g. How often is your research accessed?

Seldom. UNRA sometimes asks

h. What meta-road data/research is available with your research?

Pdf only – some tables at the back of the report. Storing electronically will be a good idea.

i. Is your data / research geo-tagged? (locations)

Yes No

Only chainages that can be linked to GPS coordinates

j. Is your data/research confidential?

Yes No

No

k. Would you be interested in uploading your data/research to a centralised databank? Why?

Yes No

Yes

l. Do you access your research on-site? Please describe your answer.

Yes No

Yes and no. No electronically. Have to search in an office. Library? Ndejje no not kept there. Some research is available online, but not on roads research, unless it was presented at a conference.

3. How would you describe your interest in road related research?

Very high.

a. What specific type of research, or topics are you interested in?

Materials, design aspects (geometric design), transportation, transport management, sustainability

b. How can you use it?

Advise government, both central and local, designs, students for continuity of research

Useful to avoid duplication

Use resources better

c. What do you use at the moment (in the absence of a consolidated database)?

Memory, guessing

d. To what extent does the research contribute to your work? (in terms of outcomes)

Research outputs (to be published) and quality of work – which is an integral part of the work of a university and lecturer.

4. What is your view on road research in the country, currently?

Need more research, more organised, more findings and get it moving

a. Do you have access to any road research? If yes, where and how?

Yes No

Yes. Online and is restricted

b. Do you know who generates research, and how to get it?

Yes No

Yes. Makerere University

c. Who do you normally partner with, if you need research?

Makerere University

Students works in groups of 2

d. Do you have any existing platforms/ communication channels for interaction and coordination with other key role players, related to road research?

Yes No

No

e. Are you aware of any attempts in the past to formalise this? Can you provide details?

Yes No

No,

f. What is your view on the level of dissemination of research recommendations currently, in Uganda?

Limited, through journals and conferences

g. What is your view on the level of uptake of research recommendations currently, in Uganda?

Slow

h. How would you describe the overall quality of road research in Uganda?

Varies on the level from undergraduate to Masters to PhD. All for qualification purposes.

5. Can you list any issues or challenges preventing coordination of research (e.g. institutional, organisational, technical, logistical or financial issues);

Lecturers are busy with academic workload

Funding

Do research to earn a degree

a. What, if any, frustrations do you have with the available road data / research? (e.g. relevance, reliability, accuracy, completeness, complicated filters)

Relevance, reliability, completeness

b. Have you ever utilised a centralised knowledge database. If so, please describe your general experience with centralised knowledge databases. What works well and what does not?

Yes No

Yes Directly to bring the cost down of rural roads
Research done on the saliva of termites (reconstructed by biochemists and proven to be cost effective.

6. How should a centralised knowledge database enable your work?

Easier to obtain information – save time.

Quality of research output

a. When retrieving data from the system what would you like to see?

Title, author(s), where (region), published in a journal or conference

b. How do you envisage using a centralised knowledge database? (e.g. remembering previous searches)

Remember previous searches

c. What fields would you be interested in for searching data/research (e.g. author, organisation)

See (a)

d. Would you be interested in viewing a quality/trust rating for data/research? Why?

Yes	No
-----	----

Yes

7. How often do you use computer systems / applications / internet?

Daily

a. How do you typically access the internet? (Desktop, mobile, tablet)?

Daily

b. On what type of platform would you access a database (desktop, mobile, tablet)?

All three

c. How often do you use Facebook, Twitter, or other social media applications? And how do you access these?

Yes

d. Would you be interested in a single sign on to the database?

Yes	No
-----	----

Yes

UGANDA ROAD FUND

1. Please name your organization. How would you describe your role and responsibilities in your organisation?

Eng Andrew Kagoda, Uganda Road Fund, Manager for Monitoring and Evaluation

2. Does your organisation generate any road related research? Select your answer with a tick or 'X'

Yes No

Yes, they fund road research.

a. Who?

They provide the funds to their agencies (UNRA, Districts and Municipalities). The agents procure the research through research institutions, eg. Universities). The agents enter into a MOU with the research institutions. They have placed research funding on hold while they are developing a research manual to set out the standards required of the research. Once in place URF provide funding for research again and also approve their own research projects as Board special projects.

b. What type of research?

Low cost seals

c. Is it published?

Yes No

No. Reports are available, but the follow up actions to conclude the studies are not always done.

d. How is research verified?

Research are validated through the Sector Working Group that sits twice a year. If they approve the study it will be recommended for duplication and validation.

e. Where is it kept?

On his laptop. Example he sits with all the reports from Crossroads (pdf reports) on his laptop. Crossroads concluded their research. Ideally MORT should house the research. The ministry created an internet based Transport Sector Data Management System two years ago but is not active yet. This is available to members of the Sector Working Group. An EDMS could use this platform.

f. How is it accessed?

Through him. By word of mouth others hear of it.

g. How often is your research accessed?

Seldom. High level requests, for example was the research done and completed. Seldom that someone asked for details.

h. What meta-road data/research is available with your research?

None. Only pdf's of reports

i. Is your data / research geo-tagged? (locations)

Yes No

No. but chainages of trial sections are available and can be traced.

j. Is your data/research confidential?

Yes No

No

k. Would you be interested in uploading your data/research to a centralised databank? Why?

Yes No

Yes, in order to synchronise research and avoid duplication.

l. Do you access your research on-site? Please describe your answer.

Yes No

Yes on his computer, theoretically TSDMS too (anyone in the Sector)
Can find info from Vincent Ssozi – statistician from MORW – 02356 772320034, 0256700390415
ssoziv@gmail.com

3. How would you describe your interest in road related research?

Very high

a. What specific type of research, or topics are you interested in?

Materials research

b. How can you use it?

Different alternatives to use, challenge to fund materials in Uganda.

c. What do you use at the moment (in the absence of a consolidated database)?

National policy – that they cannot introduce a technology by yourself, there needs to be a standard before you can use a new technology.

d. To what extent does the research contribute to your work? (in terms of outcomes)

Significant – core to road construction and maintenance, effectiveness of programmes. Whether URF money is well spent.

4. What is your view on road research in the country, currently?

Not organised in the way we do it.

Fail to replicate, can save money and cover more areas of research

For example ConAid comes to Uganda and approached different agencies and they all do research on ConAid but do not talk to each other.

a. Do you have access to any road research? If yes, where and how?

Yes	No
-----	----

Yes, Crossroads.

b. Do you know who generates research, and how to get it?

Yes	No
-----	----

Yes and no. sector working group have to approved research. Reviews are done 2x a year. Each agency have a window to present their findings of research. They give the Universities the opportunities to present.

c. Who do you normally partner with, if you need research?

With their agencies who puts out the research, e.g. Univ.

d. Do you have any existing platforms/ communication channels for interaction and coordination with other key role players, related to road research?

Yes	No
-----	----

Yes, sector working group.

TSDMS is a possible platform

e. Are you aware of any attempts in the past to formalise this? Can you provide details?

Yes	No
-----	----

NO

f. What is your view on the level of dissemination of research recommendations currently, in Uganda?

Very low

g. What is your view on the level of uptake of research recommendations currently, in Uganda?

Where they get stuck – in the process to approve by Ministry to roll out

h. How would you describe the overall quality of road research in Uganda?

Average. As research are done under constrained conditions.

5. Can you list any issues or challenges preventing coordination of research (e.g. institutional, organisational, technical, logistical or financial issues);

Approach not organized.

Approval of technologies – process is slow

Funding is a challenge

Products marketed in Uganda are from other countries. They do not trust the integrity of the products and companies (suppliers). Products are registered trademarks e.g. ConAid. Cannot test products and believe that they will receive the same contents in each drum supplied. Do not have the capacity to do quality testing

a. What, if any, frustrations do you have with the available road data / research? (e.g. relevance, reliability, accuracy, completeness, complicated filters)

Stagnation of research, stagnant after trials are completed.

b. Have you ever utilised a centralised knowledge database. If so, please describe your general experience with centralised knowledge databases. What works well and what does not?

Yes	No
-----	----

No

6. How should a centralised knowledge database enable your work?

Should be easy to access information

Try to scan for possible users and their needs

a. When retrieving data from the system what would you like to see?

Multi-layered – key words. Location, abstract, full report. Types of materials. Kinds of tests carried out and tools used. Costs. Conditions (environment),

b. How do you envisage using a centralised knowledge database? (e.g. remembering previous searches)

Information easy to access. Easy dissemination, easy to publish or forward to others.

c. What fields would you be interested in for searching data/research (e.g. author, organisation)

Multi-layered – key words. Location, abstract, full report. Types of materials. Kinds of tests carried out and tools used. Costs. Conditions (environment)

d. Would you be interested in viewing a quality/trust rating for data/research? Why?

Yes	No
-----	----

Yes, if Ministry approved, material for use

7. How often do you use computer systems / applications / internet?

Monthly

a. How do you typically access the internet? (Desktop, mobile, tablet)?

Daily

b. On what type of platform would you access a database (desktop, mobile, tablet)?

All three

c. How often do you use Facebook, Twitter, or other social media applications? And how do you access these?

Yes

d. Would you be interested in a single sign on to the database?

Yes	No
-----	----

Yes

MAKERERE UNIVERSITY

1. Please name your organization. How would you describe your role and responsibilities in your organisation?

Dr Moses Matovu, Lecturer at Makerere University, and alternate contact person to Dr. Umaru Bagampadde.

2. Does your organisation generate any road related research? Select your answer with a tick or 'X'

Yes No

Yes

a. Who?

Students and staff

b. What type of research?

The question about what type is bound to be interpreted differently by the respondents. Whereas one colleague of mine in the area pointed out "pavement materials & pavement preservation and management" as types; Umaru preferred to look at it as either applied or fundamental/basic research. At the graduate level, we have 2 types of plans for masters students, Plan A students together with doctoral students are involved in fundamental research; Plan B students are involved in applied research. I'm open to further consultation if need be.

c. Is it published?

Yes No

90% of the time No, 10%yes as conference papers etc.

d. How is research verified?

External examiner

e. Where is it kept?

The Engineering department used to have their own library, but the libraries have been centralised.. Students are supposed to give three copies, one for the lecturer and one for the library. Recently a CD copy has been added.

f. How is it accessed?

Through the central library. ? Each student is meant to produce a report , apparently with a CD; So one can either access this from the Library, from the directorate of research and graduate training and at college level

g. How often is your research accessed?

Not sure

h. What meta-road data/research is available with your research?

Scanned reports, some electronically

i. Is your data / research geo-tagged? (locations)

Yes No

No

j. Is your data/research confidential?

Yes No

No

k. Would you be interested in uploading your data/research to a centralised databank? Why?

Yes No

Yes

l. Do you access your research on-site? Please describe your answer.

Yes No

Not at the desktop, since only abstracts have been captured. One could however walk to the library for access (if one is a student or member of staff); As to the public, I suspect one has to go through

formal channels for this type of access.

3. How would you describe your interest in road related research?

Immensely high; the majority of students currently undertaking Master's program (almost 70%) are all pursuing research in this field.

a. What specific type of research, or topics are you interested in?

b. How can you use it?

Students for research

c. What do you use at the moment (in the absence of a consolidated database)?

Library

d. To what extent does the research contribute to your work? (in terms of outcomes)

Students use for topics for research. Some are given topics from lecturers and others choose their own.

4. What is your view on road research in the country, currently?

Umaru's view is that it's fair.

a. Do you have access to any road research? If yes, where and how?

Yes No

Yes. Library e-resources and previous reports can be accessed by the students

b. Do you know who generates research, and how to get it?

Yes No

Yes. Ministry of works and Transport; Local governments and Municipalities and some NGOs (like Crossroads...not sure I got it well...please follow this up)

c. Who do you normally partner with, if you need research?

Private sectors

Government ministries

& don't forget the collaborating academic institutions, through which many our staff have been supported to obtain doctoral degrees.

d. Do you have any existing platforms/ communication channels for interaction and coordination with other key role players, related to road research?

Yes No

Existing platforms for this interaction

Normally through an MOU apparently that has to be signed by the vice chancellor, legal director and the college principal.

e. Are you aware of any attempts in the past to formalise this? Can you provide details?

Yes No

No

f. What is your view on the level of dissemination of research recommendations currently, in Uganda?

Low

g. What is your view on the level of uptake of research recommendations currently, in Uganda?

Low. Disconnected activities

h. How would you describe the overall quality of road research in Uganda?

I'm getting many comments from fair to very bad. Umaru's view is that it's fair.

5. Can you list any issues or challenges preventing coordination of research (e.g. institutional, organisational, technical, logistical or financial issues);

Too disconnected. Multiple sponsors. Need a centralized player to coordinate at a higher level

- a. What, if any, frustrations do you have with the available road data / research? (e.g. relevance, reliability, accuracy, completeness, complicated filters)

Whereas we can easily access our research outputs, it's very hard to know what other agencies are doing in road research unless we are in a direct partnership (one for the access!);

- b. Have you ever utilised a centralised knowledge database. If so, please describe your general experience with centralised knowledge databases. What works well and what does not?

Yes	No	
-----	----	--

	No
--	----

6. How should a centralised knowledge database enable your work?

Fast access of relevant information of interest

- a. When retrieving data from the system what would you like to see?

Field, year, key words, author, geographical area, related projects, abstract, objective, methodology,

- b. How do you envisage using a centralised knowledge database? (e.g. remembering previous searches)

Remember previous searches

- c. What fields would you be interested in for searching data/research (e.g. author, organisation)

See (a)

- d. Would you be interested in viewing a quality/trust rating for data/research? Why?

Yes	No
-----	----

Yes

7. How often do you use computer systems / applications / internet?

Daily

- a. How do you typically access the internet? (Desktop, mobile, tablet)?

Daily

- b. On what type of platform would you access a database (desktop, mobile, tablet)?

All three

- c. How often do you use Facebook, Twitter, or other social media applications? And how do you access these?

Yes

- d. Would you be interested in a single sign on to the database?

Yes	No
-----	----

Yes

MT. ELGON LABOUR-BASED TRAINING CENTRE

1. Please name your organization. How would you describe your role and responsibilities in your organisation?

Mt. Elgon Labour-based Training Centre
 Management of the organizations activities:

- Training
- Outreach support
- Trial section

2. Does your organisation generate any road related research? Select your answer with a tick or 'X'

Yes	No	
-----	----	--

V

a. Who?

Training Centre, Consultant (TRL), District Local Governments

b. What type of research?

Low cost sealing options for low volume roads
 Community access research (Stone arch bridges, ladders and steps)

c. Is it published?

Yes	No	
-----	----	--

V

d. How is research verified?

Testing and observation

e. Where is it kept?

In MELTC offices and Library

f. How is it accessed?

On request and retrieved by officers or the librarian at MELTC

g. How often is your research accessed?

h. What meta-road data/research is available with your research?

i. Is your data / research geo-tagged? (locations)

Yes	No	
-----	----	--

X

j. Is your data/research confidential?

Yes	No	
-----	----	--

X

k. Would you be interested in uploading your data/research to a centralised databank? Why?

Yes	No	
-----	----	--

Yes. For Easy access

l. Do you access your research on-site? Please describe your answer.

Yes	No	
-----	----	--

No. It is not yet uploaded on the website

3. How would you describe your interest in road related research?

Very high interest

a. What specific type of research, or topics are you interested in?

- Low cost sealing of roads
- Performance of sealed roads

- Community access (stone arch bridges, ladders and steps)
- Unit costs of road maintenance

b. How can you use it?

- For planning maintenance strategies
- Exploitation of the use of local materials

c. What do you use at the moment (in the absence of a consolidated database)?

- Existing manuals
- Literature on the internet

d. To what extent does the research contribute to your work? (in terms of outcomes)

Less than 25%

4. What is your view on road research in the country, currently?

- Not well coordinated
- Not rolled out
- Little funds are allocated
- Some findings are not published

a. Do you have access to any road research? If yes, where and how?

Yes	No
-----	----

Yes.

- Through: The internet
- Journals
- Papers presented at conferences like the national technology conference

b. Do you know who generates research, and how to get it?

Yes	No
-----	----

- Institutions
- Academicians
- Companies
- Organizations

c. Who do you normally partner with, if you need research?

- Consultants
- Sister Labour based institutions
- Organizations
- District Local Governments

d. Do you have any existing platforms/ communication channels for interaction and coordination with other key role players, related to road research?

Yes	No
-----	----

Yes.

- UIPE gatherings
- Technology conferences
- Exhibitions

e. Are you aware of any attempts in the past to formalise this? Can you provide details?

Yes	No
-----	----

NO

f. What is your view on the level of dissemination of research recommendations currently, in Uganda?

Low

g. What is your view on the level of uptake of research recommendations currently, in Uganda?

Low

h. How would you describe the overall quality of road research in Uganda?

Requires improvement

5. Can you list any issues or challenges preventing coordination of research (e.g. institutional, organisational, technical, logistical or financial issues);

- Lack of a coordinating body
- Limited funding
- Limited logistics

a. What, if any, frustrations do you have with the available road data / research? (e.g. relevance, reliability, accuracy, completeness, complicated filters)

Frustration exists when there it is difficult to find a single research which satisfies the above

b. Have you ever utilised a centralised knowledge database. If so, please describe your general experience with centralised knowledge databases. What works well and what does not?

Yes	No
-----	----

No

6. How should a centralised knowledge database enable your work?

Information being readily available on the website and updated regularly

a. When retrieving data from the system what would you like to see?

Topic of research and when it was published

b. How do you envisage using a centralised knowledge database? (e.g. remembering previous searches)

Typing in key words and related research appears

c. What fields would you be interested in for searching data/research (e.g. author, organisation)

Topic

d. Would you be interested in viewing a quality/trust rating for data/research? Why?

Yes	No
-----	----

Yes

Gives confidence in the data but it should be vetted before uploading

7. How often do you use computer systems / applications / internet?

Daily

a. How do you typically access the internet? (Desktop, mobile, tablet)?

- Desktop
- Laptop
- Mobile
- Tablets

b. On what type of platform would you access a database (desktop, mobile, tablet)?

- Desktop
- Laptop

c. How often do you use Facebook, Twitter, or other social media applications? And how do you access these?

- Daily.
- Desktop
- Laptop
- Mobile phone

d. Would you be interested in a single sign on to the database?

Yes	No
-----	----

No.

Annexure B – Attendance register

ATTENDANCE LIST

1.	NAME	COMPANY	EMAIL	PHONE CONTACT
2.	KAMOGA RASHID	UNRA/HA	rashid.kamoga@unra.co.ug shidkamo@yahoo.com	0772459826
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5.	Mbujje Joel Webster	Ndejje University	mbujje@gmail.com	0708447404
6.	ENG. PAMBE MICHAEL	UIPE	mabemike@yahoo.com	0712862125
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26.				
27.				
28.				
29.				
30.				

Annexure C – Presentations



Baseline survey of past and current road sector research undertakings in Uganda and establishment of an EDMS

RESEARCH STAKEHOLDERS' WORKSHOP

Eng. Dr. Mark Henry Rubarenzya
Head, Department of Research and Development
UGANDA NATIONAL ROADS AUTHORITY

February 9, 2017



Organisations represented

- MOWT
- MELTC
- UNRA
- KCCA
- UNCST (MFPED)
- Road Fund
- Makerere University
- Ndejje University
- Kyambogo University
- UIPE



Workshop expectations

- Information, clarification, participation
- Review project findings
- Identify/ Clarify our research management needs
- Clear way forward



R&D at UNRA

- Provide evidence-based advice on ways to construct good quality roads that last their lifeline
- Develop knowledge for evidence-based decision making on efficient and effective management of the national roads network and other services provided by Authority
- Promote the continuous improvement of the services provided by Authority



R&D at UNRA

- Partner with universities and research institutions in advancing research on roads development and maintenance.
- Foster technology and knowledge transfer through technical assistance.



Research coordination

- Research Steering Committee
 - UNCST
 - MOWT
 - KCCA
 - UNRA
 - Academia (Makerere University)
 - Road Fund
 - MOLG ??



Initial research areas (SC)

- Research management (Institutional and Knowledge)
- Materials
- Road safety
- Design
- Asset management
- Climate Resilience
- etc

- **Research funding**

- **The need for a research baseline!**



Current partners

- AFCAP (Current Vice Chairman)
- University of Birmingham
- Makerere University
- Ndejje University
- CSIR, South Africa
- International Road Federation
-



Ongoing research projects

- **Baseline survey of past and current road sector research undertakings in Uganda and establishment of an EDMS**
- **Economic Growth through Effective Road Asset Management**
- **The use of appropriate high-tech solutions for Road Network and Condition Analysis, with a focus on satellite imagery**
- **Scaling up Gender Mainstreaming in Rural Transport – Analysis of Policies, Practices, Impacts and Monitoring Processes**
- **Assessment of alternative materials for road signs to improve road safety**



WELCOME, YOUR PARTICIPATION MATTERS

Eng. Dr. Mark Henry Rubarenzya
Head, Department of Research and Development
UGANDA NATIONAL ROADS AUTHORITY

Mark.Rubarenzya@unra.go.ug

February 9, 2017



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Baseline survey of past and current road sector research undertakings in Uganda and establishment of electronic document management system (EDMS)

Workshop 1: 9 Feb 2017



Agenda

Agenda			
No	Topic	Time	Responsible
1	Arrival	08:30-09:00	-
2	Opening and Welcome	09:00-09:30	UNRA/Cardno
3	Project methodology and programme	09:30-10:00	Aurecon (A Moolman)
4	Current structure of road research in Uganda Best practices	10:00-10:30	Aurecon/UP (A Moolman and W Steyn)
5	TEA BREAK	10:30-10:50	
	Current structure of road research in Uganda Best practices (continued)	10:50-11:30	Aurecon/UP (A Moolman and W Steyn)
6	Framework for capturing research	11:30-12:00	UP (W Steyn)
7	Group discussion	12:00-13:00	All



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2. Opening and welcome

3. Project methodology & programme

Problem statement

- Absence of consistent, continuous and coordinated research
- Currently no databank where research is consolidated and indexed, and made available to all stakeholders

Project purpose

- Carry out a baseline survey
- of past and current research
- that has been undertaken on the roads sector in Uganda
- and establish a databank that enables access to such research



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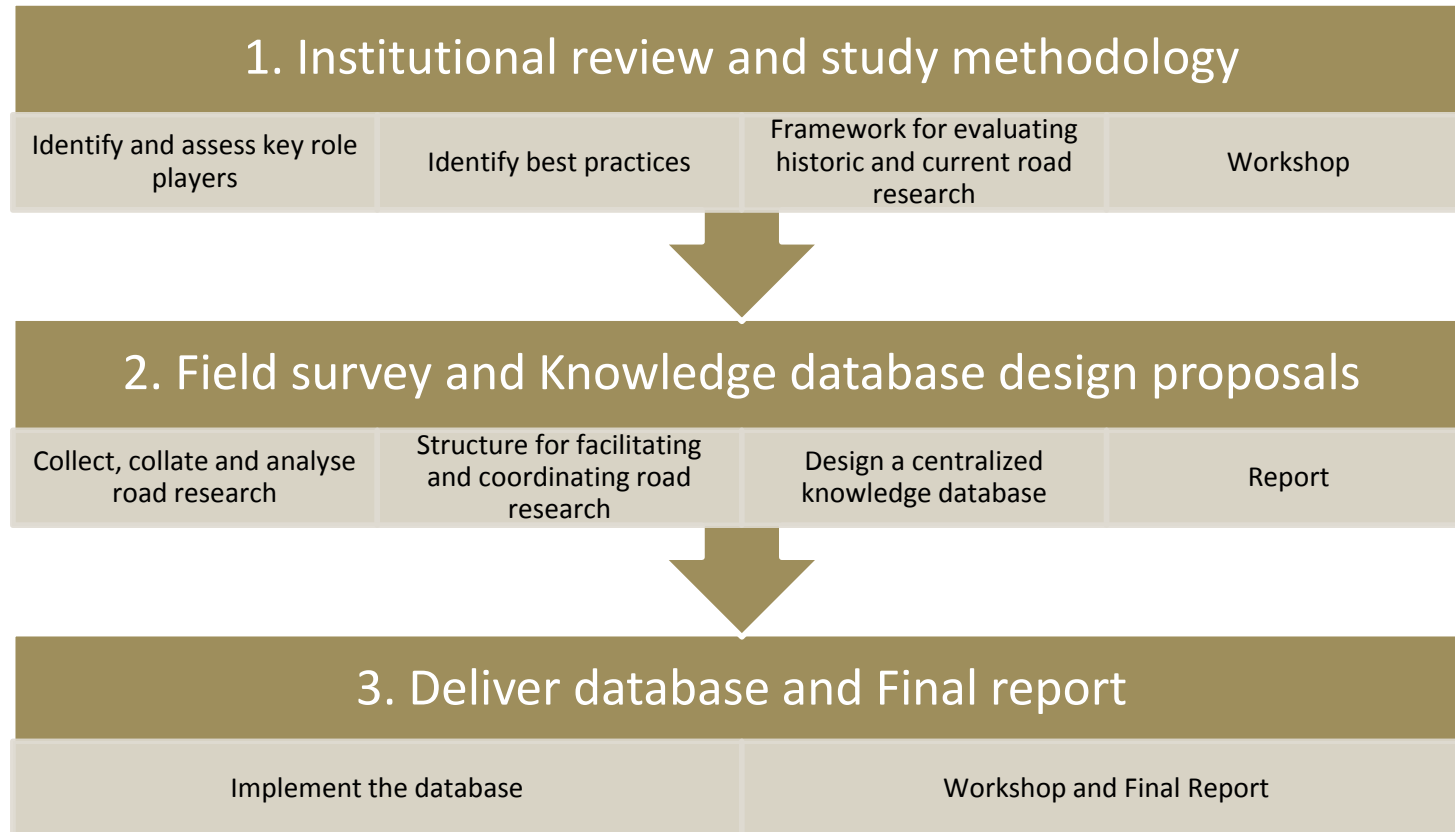
Scope clarifications

- Focus on research in the **road** sector
- Focus on **infrastructure**
- Focus on research undertakings in **Uganda**
- “Research” includes:
 - Papers presented at conferences
 - Articles published in scientific journals
 - Research as part of post-graduate studies
 - Applied research (trail sections)

Scope clarifications

- “Research” includes:
 - Other relevant research, including grey literature and other documented research efforts, as identified.

Methodology



Programme

Task	Milestones (Deliverables)	Envisaged submission date
Task 1: Institutional review and study methodology	a. Task 1 report on institutional review and study methodology	31 Jan 2017
	b. Workshop 1 Report	20 Feb 2017
Task 2: Field survey and knowledge databank design proposals	c. Task 2 Draft Final Report, incorporating survey outcomes, proposals and recommendations	22 Mar 2017
Task 3: Deliver databank and Final Report	d. EDMS databank	22 May 2017
	e. Final Workshop Report	22 Jun 2017
	f. Final Project Report	29 Jul 2017

Main deliverables

- Future structure to better facilitate and coordinate road research in the country
 - Institutional setup and responsibilities
 - Ownership for hosting, updating, maintaining EDMS
 - Technical resources
 - Communication protocols; platform for sharing knowledge
- Framework for evaluating road research
 - Categorisation
 - Assessment

Main deliverables

- Electronic document management system (EDMS)
 - Containing historic road research (synopsis, with details on where complete documents located)



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4.1 Structure of road research



Uganda road transport institutions

Policy	Planning and provision of infrastructure	Funding	Research and training
MoWT	UNRA (N roads) MoWT MoLG and MoK (D, L, T, M, U councils for D, CA and U roads) MoWT assists	URF	Universities MELTEC & Central Materials Laboratory (under MoWT) UNCST



Stakeholders interviewed

- Ministry of Works and Transport
 - Data centre
 - MELTC
 - Central materials laboratory
- UNRA
- Road Fund
- Makerere University
- Ndejje University

Stakeholders still to consult

- KCCA
- Uganda National Council of Science and Technology (UNCST)
- Kyambogo University (KYU)
- Ministry of Local Government

Main sources of research

- Uganda Road Fund
- Agencies
 - Ministry of Works and Transport
 - MELTC (including TRL)
 - Ministry of Local Government and Ministry of Kampala (district, local, town councils, urban councils)
- Universities
 - Makerere
 - Ndejje
 - Kyambogo?
- Some NGOs and other (e.g. Crossroads, ConAid)

Description of research

- Main focus of research
 - Low cost seals
 - Community access research (Stone arch bridges, ladders and steps)
 - Materials
 - Design
 - Traffic management
 - Pavement preservation and management
 - Costing

Description of research

- **Published?**
 - Most organisations said no or seldom. Small percentage gets published in journals or presented at conferences.
- **Verified?**
 - Review of lecturers; external examiners
 - Research are validated through the Sector Working Group that sits twice a year
- **Where is it kept?**
 - Office or libraries (hard copy, some electronic)
 - Personal laptops
 - Not accessed often

Structure of research

- Existing platforms to coordinate?
 - Transport Sector Working Group that sits twice a year, and has to approved research. Agencies and universities have window to present.
 - Conferences like the national technology conference
 - UIPE gatherings
 - Many stakeholders however said they are not aware of existing platforms

Structure of research

- Current level of dissemination of research
 - Generally low
 - MELTC have adapted and improved processes with local materials, and improved specifications. Findings however not always written up.
- General
 - URF provides funding for research to agencies. Agencies have MOU with universities to perform the research against funding.
 - URF is busy developing a research manual to set the standard for road research

Challenges

- No organised approach; disconnected; don't know what others are doing
- Research is duplicated, e.g. same materials or compaction aids are tested
- Multiple sponsors, with no single point of coordination
- Not enough follow through on road sections performance over time
- Research sometimes incomplete (e.g. trial sections)
- Funding limitations
- Time limitations (to attend meetings etc.)
- Hosting being discontinued shortly after launch

Requirements of EDMS

- General requirements
 - Easy and fast access to information
 - Minimize duplication of efforts
 - Updated regularly
 - Search by means of key words
 - Share/ forward to others

Requirements of EDMS

- Items they would like to see
 - Author
 - Year
 - Subject
 - Key words
 - Organization
 - Synopsis
 - Field (category)
 - Geographical area/ location
 - Journal or conference (if published)
 - Others: Objective, methodology, materials, technology, related projects, full report, conditions (environment)

Requirements of EDMS

- Existing electronic platforms
 - A TSDMS (Transport Sector Data Management System) was created two years ago to assist with project reporting and Annual Sector Review. This platform could be shared with EDMS. Same stakeholders involved.
 - E-library previously setup by Crossroads



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4.2 Best practices

Best practices - background

- Managing transportation & roads research
 - ensuring appropriate & cost-effective research
 - support economic development
- Research planning
 - identify appropriate areas
 - research outcomes address current & expected challenges
 - ensure that road network can support economic & social growth & development

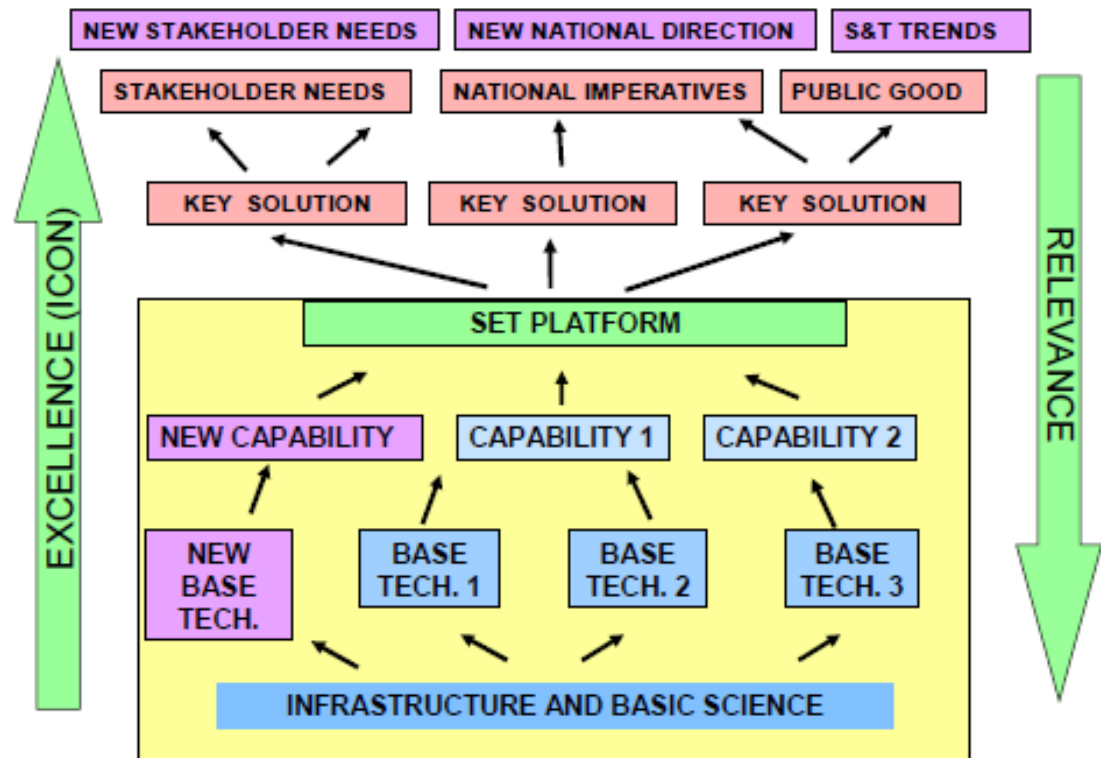
Best practices - background

- Identified research conducted
 - benefits quantified & expressed
 - costs
 - larger investment & asset value of network
 - demonstrate positive Return On Investment (ROI)
 - demonstrate that country better off economically & socially than without research conducted
- Various approaches
 - specific approach applied in South Africa
 - systems approach for managing research & development in road infrastructure area - Technology Tree (TT)
- Objective
 - review & compile listing of past & current research on roads sector in Uganda
- Specific evaluation approach to be followed
 - TT model proposed
 - needs detail
 - focus areas

Best practices – TT model

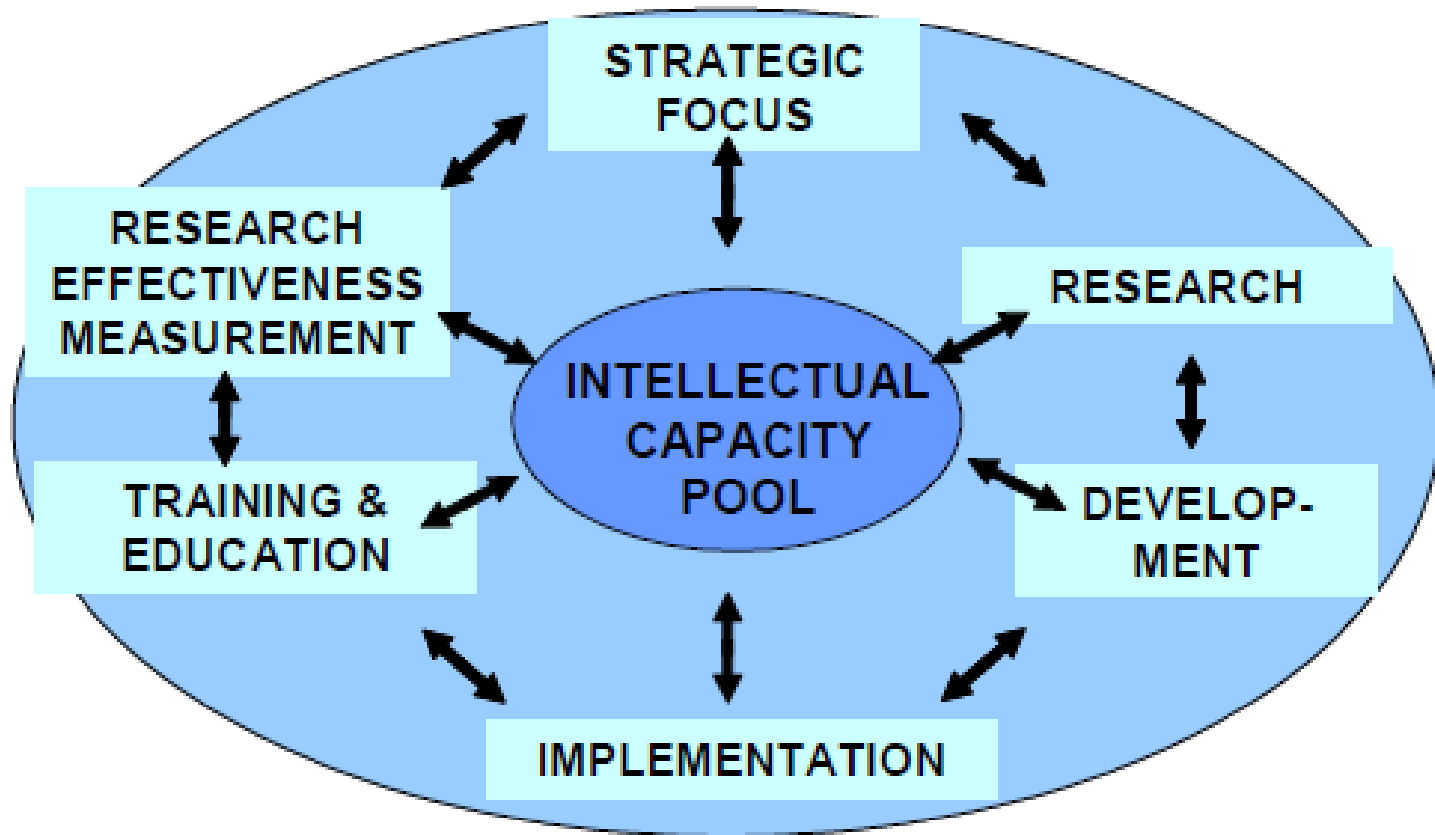
- Key focus areas & related identified needs
- Key solutions to address needs
- Technology platform
- Applied technologies or capabilities
- Base technologies
- Basic science & infrastructure

- Simplify





Best practices – Research management



Best practices – Focus areas

- Scope of research focus areas
 - Traffic
 - states overall demand for road
 - Material
 - available resources to respond to stated demand
 - Natural environment
 - overall context under which road has to function
 - Pavement structure
 - combination of materials in specific environment to address specific traffic demand

Best practices – Focus areas

- Areas of interest
 - Design
 - overall evaluation of all relevant inputs in standardised & acceptable framework to enable objective outcomes for all input scenarios
 - Construction
 - application of design with major research focus on quality control
 - Management
 - long-term management of life of facility with detailed attention on options to extend life under changing conditions
 - ensure increased ROI for roads agency through prevention of premature failures
 - Maintenance & Rehabilitation
 - options for keeping facility in serviceable condition
 - extending life of facility through appropriate measures

Best practices – Institutional responsibility

- Central responsibility for managing & coordinating research
- Ensure scarce resources used in most effective manner
 - human capacity, funding, materials & equipment
- Managed approach in order to focus national research effort on issues that are most pressing
- Role of institutional responsible body for guiding & managing research
 - ensure that institution is trusted
 - viewed as being transparent & knowledgeable

Best practices – Other

- Researchgate
- Google Scholar
- SANRAL panel system

Best practices – Researchgate

- Social networking site for scientists & researchers
- Share papers, ask & answer questions, find collaborators
- Largest academic social network in terms of active users
- Email address at recognized institution or manually confirmed as published researcher
- User profile
 - research output (papers, data, chapters, negative results, patents, research proposals, methods, presentations, & software source code)
 - follow activities of other users & engage in discussions

Best practices – Researchgate



Wynand JvdM Steyn id 18.31

PhD Civil engineering id

Professor of civil engineering id

University of Pretoria, Pretoria · Department of Civil Engine... id

Overview

Contributions

Timeline

Info

Stats

Scores

Network

106

Research items

4,259

Reads

138

Citations

View stats

59 Articles

30 Conference Papers

17 Other

View details

Reads
4,259

Last week: 50

Citations
138

Last month: 0

Profile views
1,849

Last week: 11



Detailed stats for week ending Feb 05 2017

Best practices – Researchgate



The Uganda National Council for Science and Techno...

Uganda

Invite researchers

Overview

Contributions

Departments

Members

Member stats

Σ 48.22

Total RG Score

14

Members

View member stats

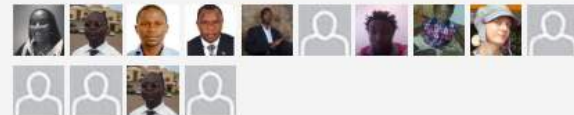
4

Publications

Add these stats to your site

14 Members

View all



Invite your colleagues

Recent publications

View all



Article: A study of risk factors associated with Newcastle disease epidemics in village free-range chickens in Uganda

Top publications last week *by reads*

View all

Aflatoxicosis, infectious bursal disease and immune response to Newcastle disease vaccination in rural chickens

Avian Pathology 09/2005; 34(4):319-23.

Best practices – Google Scholar

- Freely accessible web search engine
- Indexes full text / metadata of scholarly literature
- Includes most peer-reviewed online academic journals & books, conference papers, theses & dissertations, preprints, abstracts, technical reports, & other scholarly literature
- Roughly 160 million documents as of May 2014
- Approximately 80 to 90% coverage of all articles published in English
- Resembles subscription-based tools
 - Elsevier Scopus
 - Thomson Reuters' Web of Science.

Best practices – Google Scholar

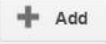



Wynand Jvdm Steyn

University of pretoria
Engineering
Verified email at up.ac.za
My profile is public

 Edit  Follow

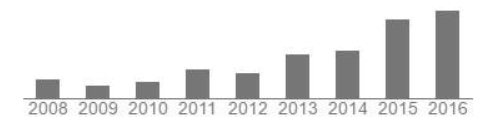
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<input type="checkbox"/>	Nanotechnology in Civil Infrastructure				51	2011
	K Gopalakrishnan Springer Verlag					
<input type="checkbox"/>	Potential applications of nanotechnology in pavement engineering				28	2009
	WJM Steyn Journal of Transportation Engineering 135 (10), 764-772					
<input type="checkbox"/>	vdM				18	2004
	WJ Steyn Level one data analysis of HVS tests on Foam Treated Gravel and Emulsion ...					
<input type="checkbox"/>	vdM. 2001				14	
	WJ Steyn First level data analysis of HVS tests on foam treated gravel and emulsion ...					
<input type="checkbox"/>	Research and application of nanotechnology in transportation				11	2008
	WJM Steyn Proc. 25th Annual Transportation Conference, SATC, Pretoria					
<input type="checkbox"/>	Applications of nanotechnology in road pavement engineering				10	2011
	WJM Steyn Nanotechnology in Civil Infrastructure, 49-83					

Google Scholar

Citation indices	All	Since 2012
Citations	262	185
h-index	8	7
i10-index	6	4



Add co-authors

Louw Du Plessis	 
Kasthurirangan Gopalakrishnan	 
Alex Visser	 
James Maina	 
Joseph K. Anochie-Boateng	 
N Attah-Okine	 
Bjorn Birgisson	 
Julius Komba	 
Wilna L Bean	 
John T. Harvey	 

Co-authors [Edit...](#)



Best practices – Google Scholar

Google

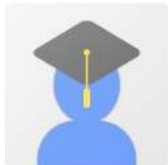
makerere



Scholar



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Institutions for makerere

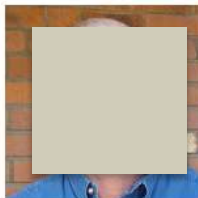
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Add co-author



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Public Health Global Health Health Systems Research

Add co-author



Mulago hospital/**Makerere** University College of Health Sciences; Centre for Tropical ...
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Cited by 2684

Paediatric Neurology Clinical Tropical Medicine

Add co-author

Best practices – Panel system

- How to rate researchers for projects

ITEM	OPTIONS
Qualifications	E.g. BSc Eng (Civil), M Eng (Mechanical)
ECSA Registration	Candidate, Registered Professional Engineer, Registered Technologist
Years Research Experience	
Academic research Publications	Accredited journal article, Conference paper, Book chapter
H Factor	Research activity
Technology demonstrators	Projects
Guidelines and manuals	
Project leader Rand Value	

Best practices – Panel system

- How to rate researchers for projects

Item	1	2	3	4	5
Qualifications	BSc	Honours	Masters		PhD
ECSA Registration		Candidate			Full
Years research experience	0	5	10	15	20
Publication equivalents all	2	7	15	20	25
Publication equivalents 7 years	1	2	4	6	8
H factor	0	2	3	5	7
TDs	0	0	1	2	3
Guidelines and manuals	0	0	1	3	5
Project leader Rand Value	0	5	10	15	20

Best practices – Search

- Use standard Google / Google Scholar
 - Uganda Road Research
 - 187 000 results
 - Makerere Road Research
 - 11 300 results

EDMS / databases integrations

- New EDMS
 - Overall view and decision support / management tool
- Google Scholar / Researchgate
 - Track records of researchers and institutions
 - Visibility and credibility
- Panels
 - Quality assurance – who does research?



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4.3 Group sessions

Discussion topics: EDMS

- What is your requirements for the system?
 - Main functions of the system?
 - Main categories of research you would like to see?
 - Main items you would like to see for each research item?
 - Any specific user requirements? (such as accessibility, viewing of data, dashboard, reporting on metadata)
 - Guide planning of future research?
- Any lessons to be learned from other/ previous systems? (e-library, TSDMS)

Discussion topics: structure

- Where should the EDMS be hosted?
- Who should perform quality control (checks on uploads)?
- Funding sources for hosting, resources, maintenance?
- What platform should be used to discuss, plan, disseminate and apply research?
 - Transport sector working group meetings?
 - Other?

Discussion topics: system specifications

- Your view on the EDMS system specifications



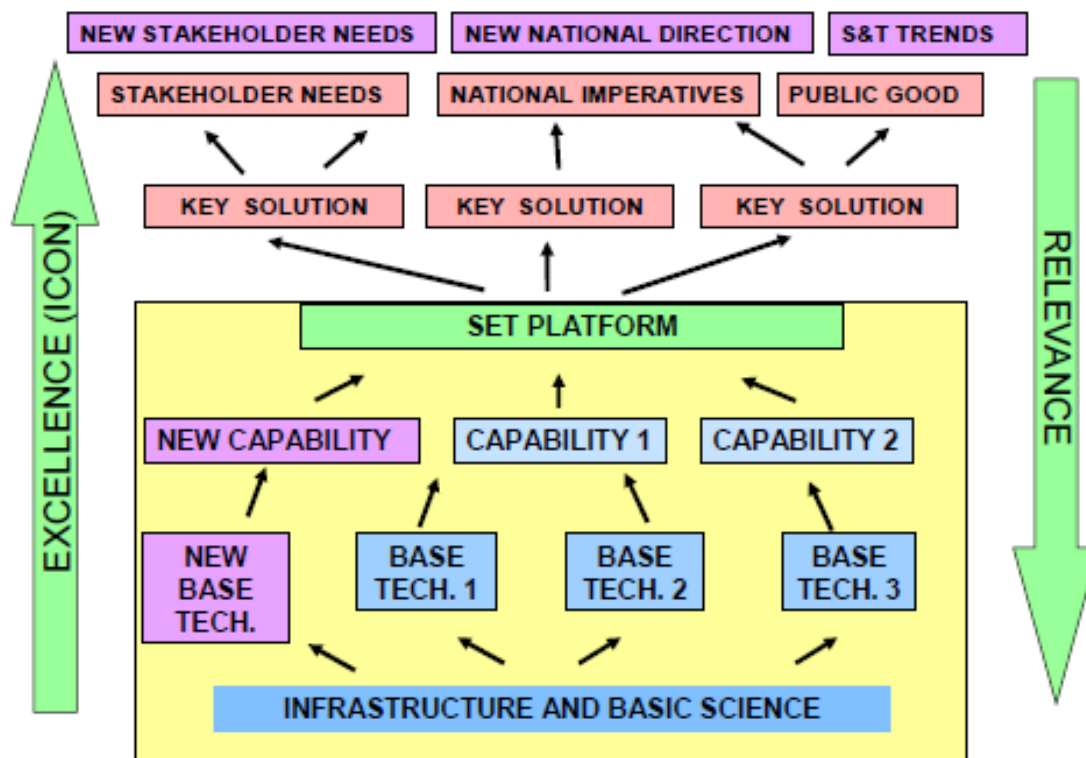
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8. Framework for capturing research

Framework

- Framework for evaluating historic & current road research
- Based on
 - TT model E
 - 8 identified focus areas
- TT model applied to categorize research
 - enable client to identify areas where lack of basic research hinders progress in applied research
 - identification of areas of applied research for which basic research has been conducted & resources are available
 - take to an implementation & problem solution level
- Workshop
 - initial picture of state of research in Uganda
 - framework for assessment of various resources & competences
 - finalise strategy for identification & collation of available research
 - structure where research can be categorized into TT model & focus areas
- Implementation programme
 - state required steps to enable research managers to identify areas of concern
 - potentially high ROI can be obtained
 - both economic & social investment

Framework – TT model



Framework – Focus areas

- Scope of research focus areas
 - Traffic
 - Material
 - Environment
 - Pavement structure
 - Design
 - Construction
 - Management
 - Maintenance & Rehabilitation

Framework – Other

- Set keywords – paved / unpaved – seal / asphalt etc. as well as open keywords
- Structure for database
- Not too many fields without data, rather focused information and follow up by obtaining actual documents – CSIR APT database

Framework – Other

- Datafields
 - Authors
 - Institution
 - Title
 - Published where
 - Location of document
 - Abstract
 - Keywords
 - Funders / sponsors / programme
 - Date
 - Other

Framework – Other

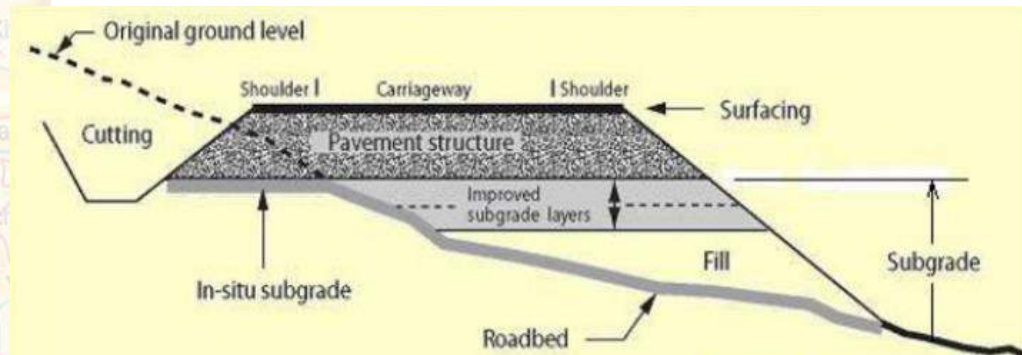
- Guidelines for
 - Research panels
 - Research funding
 - Experimental designs
 - Demonstration and test sections

Dashboard

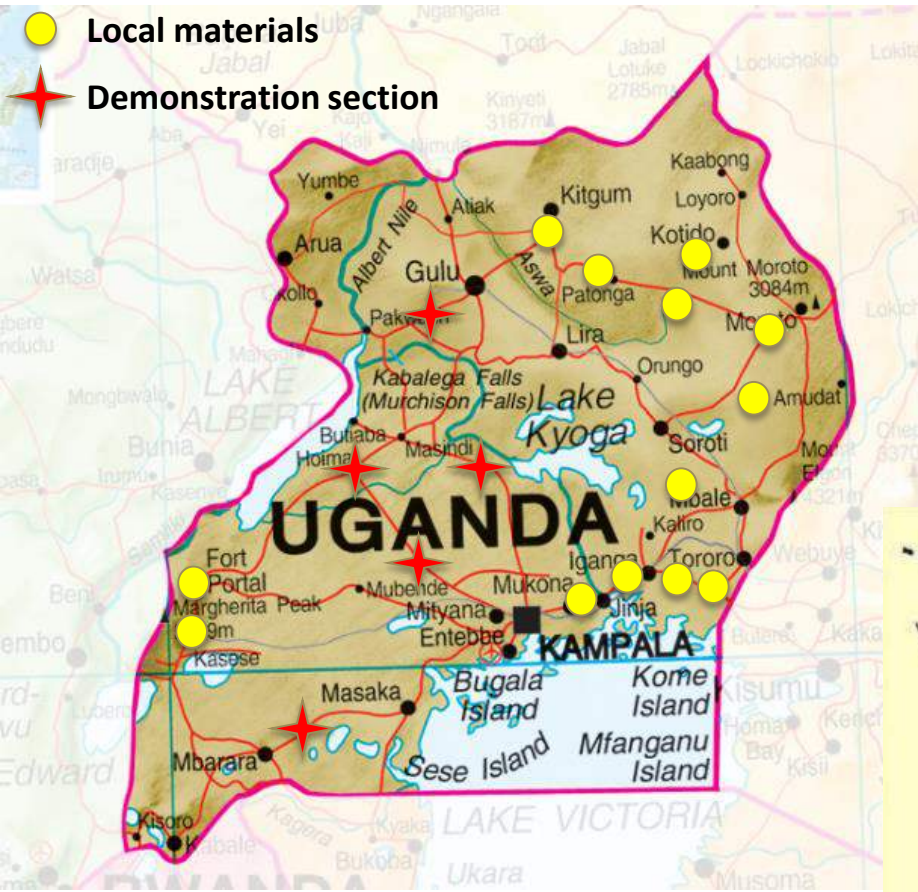


Search

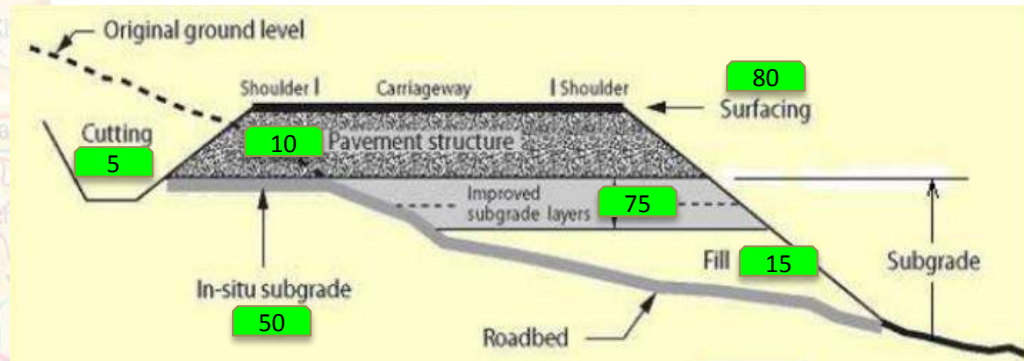
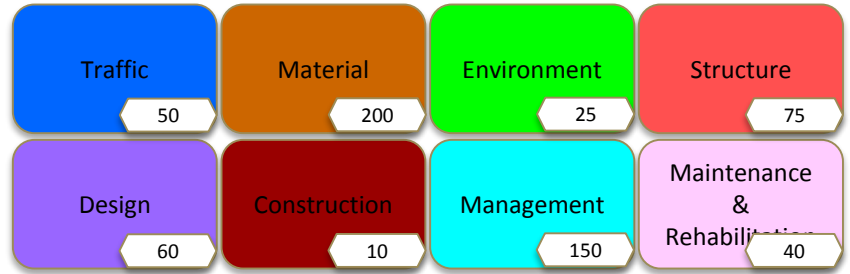
- Traffic
- Material
- Environment
- Structure
- Design
- Construction
- Management
- Maintenance & Rehabilitation



Dashboard



Search





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Thank you for your attention

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