ReCAP
Research for Community Access Partnership

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Institutional Capacity for Knowledge Management of Transport Research Centres in Africa and Asia

Caledon, Western Cape, South Africa, 17 November 2016

Workshop Report

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25 November 2016

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Cover image: Local Government Infrastructure and Transportation Research centre (LoGITReC), Dodoma, Tanzania

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Abstract

The **Research for Community Access Partnership (ReCAP)** is a six-year UKAid funded research programme that supports rural road infrastructure and transport services research in Africa (AfCAP) and Asia (AsCAP). The aim of ReCAP is to strengthen the evidence base on more cost effective and reliable low volume road and transport services approaches, thereby influencing policy and practice. The output for the Knowledge Management and Communications component is that the generated evidence base of low volume rural road and transport services knowledge is widely disseminated to, and easily accessible by, policy makers and practitioners. This will contribute to the high-level aim of the ReCAP in facilitating effective research uptake into policy and practice.

A **half-day workshop on 'Institutional Capacity for Knowledge Management of Transport Research Centres in Africa and Asia'** was held jointly with a two-days knowledge exchange event on Road Asset Management. The objectives of the KM workshop were: 1) To raise awareness about knowledge management as a discipline in the core process of knowledge generation by the research centres; 2) To address issues related to the institutional capacity to manage knowledge effectively and efficiently, with a view of long-term sustainable research management; 3) To inform participants of the current on-going local KMN projects supported by ReCAP and have participants discuss and exchange experiences in implementing KM initiatives within their institutions. A combination of presentations, group work and plenary discussions was used during the KM workshop.

Keywords
Knowledge Management; Transport Research Centres; institutional capacity;

Acronyms

AFCAP	Africa Community Access Partnership
ARTReF	African Road and Transportation Research Forum
ASCAP	Asia Community Access Partnership
CB	Capacity Building
CSIR	Council for Scientific and Industrial Research, South Africa
DFID	Department for Further International Development
ERA	Ethiopian Road Authority
I&K Products	Information and Knowledge Products
IM	Information Management
KM	Knowledge Management
M&E	Monitoring & Evaluation
ODI	Overseas Development Institute (UK)
PMU	Project Management Unit
ReCAP	Research for Community Access Partnership
SDG	Strategic Development Goal
UK	United Kingdom (of Great Britain and Northern Ireland)
UKAid	United Kingdom Aid (Department for International Development, UK)

Contents

1. BACKGROUND

The **Research for Community Access Partnership (ReCAP)** is a six-year UKAid funded research programme that supports rural road infrastructure and transport services research in Africa (AfCAP) and Asia (AsCAP). The aim of ReCAP is to strengthen the evidence base on more cost effective and reliable low volume road and transport services approaches, thereby influencing policy and practice. ReCAP works with 12 partner countries in Africa (Democratic Republic of Congo, Ethiopia, Ghana, Kenya, Liberia, Malawi, Mozambique, Sierra Leone, South Sudan, Tanzania, Uganda and Zambia) and three in Asia (Bangladesh, Myanmar and Nepal). ReCAP is a demand-driven programme of research in which ReCAP partners will determine the details of research projects to be undertaken.

A Research Strategy, Capacity Development Strategy, and Knowledge Management and Communications Strategy have been developed for ReCAP. The output for the Knowledge Management and Communications component is that the generated evidence base of low volume rural road and transport services knowledge is widely disseminated to, and easily accessible by, policy makers and practitioners. This will contribute to the high level aim of the ReCAP in facilitating effective research uptake into policy and practice.

The Knowledge Management and Communications Strategy contributes to the main ReCAP objective through influencing policy and research practice in Africa and Asia and effectively:

- Strengthen research influence on policy: translating and synthesising research evidence into policy implications and impacts and facilitating policy dialogues with key policy makers and other stakeholders;
- Strengthen research uptake by practitioners: supporting the documentation, storing, accessing, publication and dissemination of research;
- Strengthen countries' rural road and transport research capacity through better knowledge management;
- Strengthen the interconnectedness of rural access practitioners' communities internationally.

In the framework of the **ReCAP Knowledge Management strategy**, one of the objectives is to contribute to strengthening partner countries' rural road and transport research capacity through **enhanced knowledge management (KM)**. KM capacity building activities in ReCAP range from KM workshops to projects such as the establishment of national online portals and repositories and training of research centre staff in information/library management. A number of projects are being implemented in Mozambique, Tanzania, Nepal, Kenya and Uganda (see Annex 1).

This document is the report on the half-day KM workshop on 'Institutional Capacity for Knowledge Management of Transport Research Centres in Africa and Asia' held in conjunction with a two-days knowledge exchange event on road asset management. Both activities were attended by 50 participants (see Annex 2 for the participants list). The group was composed of national representatives of the African Transport and Research Centres Forum (ARTReF), road asset management experts and other representatives of road agencies and research institutions of ReCAP countries in Africa and Asia.

2. OBJECTIVES OF THE WORKSHOP

The objectives of the KM workshop were:

- To raise awareness about knowledge management as a discipline in the core process of knowledge generation by the research centres;
- To address issues related to the institutional capacity to manage knowledge effectively and efficiently, with a view of long-term sustainable research management;
- To inform participants of the current on-going local KMN projects supported by ReCAP and have participants discuss and exchange experiences in implementing KM initiatives within their institutions.

3. METHODOLOGY AND APPROACH

The workshop was prepared and facilitated by Mr Ruud Crul, Knowledge Management Consultant. Prior to the workshop preparatory meetings were held with Ms Caroline Visser, the Knowledge Management and Communications Manager of the ReCAP PMU and Ms Madeleine van Heerden, the Information and Knowledge Management Expert of CSIR, involved in KM studies and workshops in three ReCAP countries in Africa, i.e. Kenya, Mozambique and Tanzania. The programme of the workshop is given in Annex 3.

For the half-day KM workshop, a combination of presentations, group work and discussion sessions was used:

1. Presentations on findings and initial results of the projects that are being implemented under the ReCAP Knowledge Management component
2. Introductory presentation on Knowledge Management and its role to support research in the national centres and dissemination of evidence-based results to policy and practice
3. Interactive sessions in which participants will work in groups and report back to plenary
4. Plenary wrap-up session to summarize the workshop and recommend on next steps.

The workshop was reviewed by the participants using an evaluation questionnaire. The evaluation results are discussed in paragraph 4.5 .

3.1 Learning objectives

At the end of the workshop participants should be able to:

1. Understand that Knowledge Management is an essential process for knowledge-based organizations such as research centres.
2. Understand what Knowledge Management is and how KM can be integrated in the organizational processes of a research centre
3. Use a practical stepwise approach to develop/update a KM Strategy and Action Plan for their research centre
   a. In which KM activities are linked with organizational objectives, research and management activities and stakeholder needs
   b. Be able to use Knowledge Mapping as a tool to identify I&K products inputs & outputs, stakeholders that provide I&K Products, and stakeholders that will be the recipients of the outputs

   c. Be able to identify supporting systems and tools, and channels that are needed
   d. Be able to use of the 'KM Piano' to provide an overview of all KM activities, products and supporting systems and tools
   e. Understand that KM needs to be implemented as an iterative process (in response to changing context and needs).
4. Understand the importance of a 'KM Governance and Support structure' to support implementation of the KM Action Plan
5. Understand the need for capacity building to develop the necessary IM and KM skills of staff
6. Understand the need of a M&E plan for monitoring progress and evaluating outputs, outcome and impact

3.2 Presentations

The following presentations were given in Session 1 and 2 of the workshop:

1. An introduction on Knowledge Management by Mr Ruud Crul;
2. Developing the Capacity for Sustainable Knowledge Management in African (and Asian) Transport Research Centres: Observations from Studies in Kenya, Mozambique & Tanzania by Ms Madeleine van Heerden;
3. ARTReF - African Road and Transportation Research Forum - Introduction and Status by Mr Alemayehu Ayele, Vice President of ARTReF;
4. Knowledge and Information management – the Case of Ethiopia by Mr Alemayehu Ayele, Research and Development Director, ERA, Ethiopia.

All presentations are given in Annex 4. After each presentation, the participants had the opportunity to raise questions and/or give comments on the presentation.

4. WORKSHOP SESSIONS

4.1 Session 1 – Knowledge Management and ReCAP KM Support activities

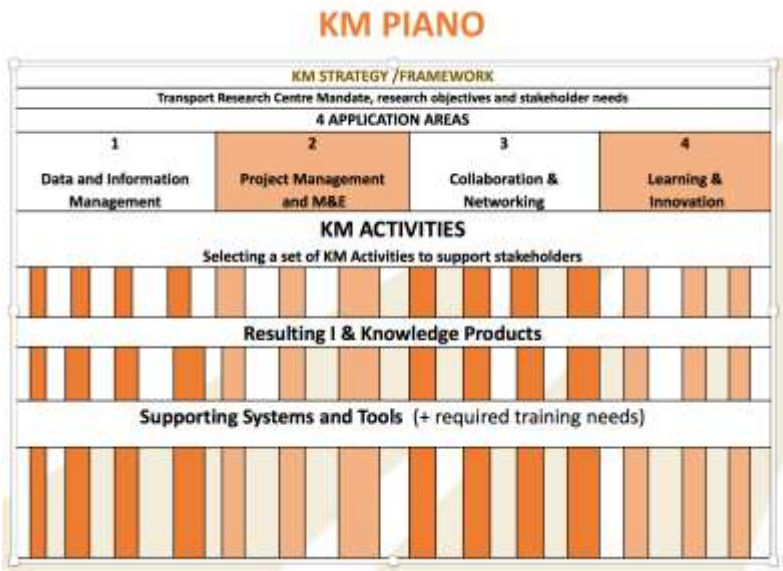
Presentation 1. Introduction to Knowledge Management at Transport Research Centres by Ruud Crul

In this first presentation Mr Ruud Crul introduced a step-wise approach to implement KM activities within a research centre. Research Centres, as knowledge-based organizations, will benefit from a Knowledge Management Framework to support its staff members to carry out their work efficiently and effectively to achieve the centre's research objectives and to provide the required services, advice on (rural) roads and transport services to policy-makers and practitioners. To develop and implement such a KM Framework and a subsequent Action plan the Research Centres can best use a structured, stepwise approach to establish a KM Framework and prepare an action plan for KM activities to collect, store, share, collaborate, and learn to support their research and advisory work on key challenges related to community access (roads and transport services) and the possible solutions for these challenges.

Stepwise approach for developing a KM Strategy/Framework and Acton plan to be used by a research centre

1. Assess the scope of the research work (national policies/mission and mandate of research centre/research objectives of research centre);
2. Consult the key stakeholders (at policy and practice level including local communities) and assess needs of main stakeholders;
3. Select the main KM activities based on research scope and assessed stakeholder needs in four main applications areas:
   1) Data & Information management;
   2) Programme management;
   3) Collaboration & Networking;
   4) Learning & Innovation.
4. Identify the supporting systems and tools needed for the selected KM activities & Information and Knowledge Products (what is needed)
5. Carry out a priority setting on the KM activities and supporting tools (what is done first, what later, as not all KM activities and set up of supporting systems and tools can be carried simultaneously)
6. Prepare KM Action plan with roles and responsibilities (including a Governance and Support structure) and a feasible time schedule for implementation including training activities (capacity development plan), communication and awareness activities and M&E plan
7. Implementation of KM Activities based on the Action plan
8. M&E on the progress and impact of the KM activities and, when needed, adapt and/or change KM Action plan at regular intervals based on results of the M&E activities.

The steps 1-4 of this stepwise approach can be visualised with a 'KM Piano' through which a research centre can identify the key data, information and knowledge that the research centre needs to carry out its research activities and to provide the advisory services to the key policy and practice stakeholders, and their own Information and Knowledge outputs. The 'Piano' indicates that each centre and stakeholder may use/participate in different KM activities, use/need different Information and Knowledge products, and will subsequently also use different systems and tools. So, each stakeholder will play its own tune on the KM Piano.



Use of 'KM Piano'

1. Describe the research centre mandate and research objectives and identified stakeholders' needs (at the top of the 'KM Piano')
2. Select for the four Application areas the KM activities needed to manage (collect, capture, analyse, synthesize, use, repackage and disseminate) data, information and knowledge (KM Cycle) for research activities and (advisory) services to be delivered;
3. Identify the key Data, Information and Knowledge products as inputs and outputs of these KM activities;
4. Identify supporting (online and offline) systems & tools, and channels that the research centre needs for the data, information and knowledge management. In addition, identify any training activities that the research centre needs to carry out to assure that its staff and stakeholders can use the systems and tools to access the data, information and knowledge products.

For research activities and advisory services to, researchers always use a range of sources of data, information and knowledge. So, preparing a 'KM Piano' for a research centre is not quick and easy process. Information and knowledge management experts may assist the research centres in this process and the ReCAP KM programme is currently supporting the research centres in different countries.

To support the preparation of the KM Piano a *Knowledge Mapping* tool was introduced to identify all information required for the 'KM Piano'. The 'Activity-based Knowledge Mapping' is a tool which enables an organization to link data, information and knowledge inputs and outputs in a systematic way to organisational (research) activities and services. Originally developed by ODI (UK) in 2009 an adapted Knowledge Map was developed for bringing together the information needed for the 'KM Piano'. This Knowledge Mapping tool with its 10 boxes (see below) was introduced in this presentation and later in the workshop used for a group exercise.

By preparing Knowledge Maps for the prioritized research activities and advisory services a research institution will gain insight into the main data, information and knowledge inputs and outputs of their key activities and will be able to select key KM activities needed to support their research and advisory work to stakeholders.

Knowledge Mapping tool

<table>
<tr><td colspan="5">BOX 1
RESEARCH ACTIVITY/SERVICE: .....
THEMATIC AREA: .....</td></tr>
<tr><td rowspan="2">3. DATA, INFORMATION & KNOWLEDGE INPUTS
[List ordered in terms of priority]</td><td rowspan="2">4. PROVIDERS OF THE INPUTS
[own activity; stakeholders at national, sub-national local and international level]</td><td>2. SERVICE
[Detailed description]</td><td rowspan="2">6. INFO & KNOWLEDGE OUTPUTS
[List ordered in terms of priority]</td><td rowspan="2">7. RECIPIENTS OF THE OUTPUTS
[stakeholders at national, sub-national local and international level]</td></tr>
<tr><td>5. GAPS IDENTIFIED FOR INPUTS
[Based on inputs given]</td></tr>
<tr><td colspan="2">8. SUPPORTING SYSTEMS & TOOLS - CHANNELS
[Existing and new SYSTEMS & TOOLS used for inputs or outputs, and channels to be used for dissemination]</td><td>9. CHALLENGES in RESEARCH & SERVICE DELIVERY
[internal and external challenges]</td><td colspan="2">10. SOLUTIONS/IDEAS FOR CHALLENGES
[→recommendations for ReCAP KM support]</td></tr>
</table>

Presentation 2. Developing the Capacity for Sustainable Knowledge Management in African (and Asian) Transport Research Centres: Observations from Studies in Kenya, Mozambique & Tanzania by Ms Madeleine van Heerden.

Ms Madelein van Heerden, Information and knowledge Management specialist of CSIR, South Africa, carried out KM studies and workshops for three Transport Research Centres in Kenya, Mozambique and Tanzania.

Reports on these studies are at the ReCAP Rural access library:

1. Technical Assistance to Mozambique Road Research Centre (Interim Phase) - Progress report 3: KM study
2. Technical Assistance to Tanzania Local Government Infrastructure and Transportation Research Centre (Interim Phase) - Progress report 3: KM Study

In her presentation (Annex 4.2) Ms van Heerden summarized the main findings of her work in the three countries, and provided recommendations for the research institutions on how the implement KM activities for their centres with specific attention to Information management (a library and information service and a record management system), and knowledge sharing within the research centre and between research centre and stakeholders (physical and online spaces for sharing, collaboration and interaction).

4.2 Session 2 - Institutional Capacity for KM of national Transport Research Centres

In Session 2 KM activities of Transport Research Centres in Africa planned and implemented at the regional and national level were presented by Mr Alemayehu Endale. In his capacity as Vice President of the newly established African Road and Transportation Research Forum (ARTReF), he presented the planned KM support to the research centres of the member countries of ARTReF. In a second presentation Mr Alemayehu Endale, in his capacity as Director Research and Development of the Ethiopian Road Authority (ERA) presented the plans and activities of the newly established Road Research Centre in Ethiopia (see Annex 4.3 and 4.4 for presentations). In addition, the representatives of Nepal, Bangladesh and Uganda provided information on the research and KM activities supported by the ReCAP programme.

4.3 Session 2-3 – Knowledge Mapping Tool

In Session 2 and 3 the Knowledge Mapping Tool was used to bring together information needed for one specific (exemplary) research activity: the Impact of dust pollution on people, their livelihoods and the environment.
The participants were divided into 4 groups. In the Knowledge mapping exercise they were asked to prepare with their group a Knowledge Map for the 'Dust research activity' by filling the boxes 1-10 (see Annex 5 for a Guidance note on knowledge mapping). The exercise provided the participants a knowledge mapping tool to be used at their own research centre to identify their key Information & Knowledge needs (inputs) for their activities, the outputs resulting from their research and the systems & tools that they need to set up to be able to collect, store, share and use the data, information and knowledge.

The research activity on 'impact of dust' was chosen, as it was a common issue for rural roads in most countries. It was a topic that would foster brainstorming in the different groups and facilitate interaction between all participants. The Knowledge mapping provided the participants insight into the information and knowledge

needs for work. Inputs for research and advice will depend on the participation and collaboration with other stakeholders from government, research, civil and private sector, and local communities. These stakeholders are also the main audiences for the research outputs and advices the research centres will produce.

4.4 Session 4 – Wrap-up and conclusions

At the end of the workshop Mr Ruud Crul summarized the different sessions of the half-day KM workshop and emphasized again the need for the stepwise approach for the implementation of KM activities at the newly established and planned national Transport Research Centres in Africa and Asia. He thanked all participants for their valuable inputs during the discussions, and their active participation and interaction in the group and plenary sessions of the knowledge mapping. See Annex 6 for a photo impression of the KM workshop.

Ms Caroline Visser thanked the facilitator and the two other presenters during the workshop, Ms Madelein van Heerden and Mr Alemayehu Endale for their presentations. She highlighted again the role ReCAP is playing in supporting the KM activities of the national research centres and the important role that ARTReF has to play at the regional level in Africa in supporting the national transport research centres by knowledge exchange.

4.5 Evaluation feedback

The participants gave feedback on the KM Workshop using the evaluation form. This revealed that the participants understood after the workshop that Knowledge Management is important for the transport research centres and that it requires a framework and planning for implementation. Overall the KM workshop was evaluated as very useful with an average of 4.8 (on scale of 1-5). Faciliation of KM workshop and the Knowledge Mapping exercise were both evaluated with an average of 4.3, the summary of key points with an average of 4.1 and the presentation of Ms van Heerden with a 4.4 (on a scale of 1-5).

Knowledge Management was understood as a continuous process in which leadership, management support, and change management are important aspects. The systematic approach of Knowledge Management with stakeholder involvement and priority setting was mentioned by the participants what was learned from the workshop. Recommendations mentioned were follow-up workshops, and dealing with specific smaller aspects in more detail.

Annex 1. ReCAP KM projects

1. Technical assistance to Mozambique Road Research Centre (MOZ2045A), which includes a Knowledge Management study addressing the application of KM principles in the generation and transfer of relevant knowledge;

2. Technical Assistance to Tanzania Local Government Infrastructure and Transportation Research Centre (TAN2046A), which includes a Knowledge Management study determining organisational expectations for a proposed Information Centre within the Local Government Infrastructure and Transportation Research Centre (LoGITReC) in Dodoma and considering the services, associated resources and infrastructure;

3. A workshop held in April 2016 in Nepal on the topic of Knowledge Generation in the Rural Transport Sector (NEP2090A), which included an interactive session on Knowledge Management and Research Uptake, outlining uptake objectives, current KM practices within the institutions involved and KM priorities;

4. Mapping of Knowledge Management and Capacity Building needs of the MTRD, Kenya (KMN2047), which matches current practice with the needs and provides and implementation road map for KM and CB;

5. A Baseline survey of past and current road sector research undertakings in Uganda and the establishment of electronic document management system (EDMS) is currently being tendered (UGA2096)

Annex 2. Participants list

Eng Francis Afukaar	Ghana
Dr Paulina Agyekum	Ghana
Mr Mahbub Alam	Bangladesh
Eng Tamba K Amara	Sierra Leone
Mr John Asiedu	Ghana
Mr Jeremiah Turic Bairiak	South Sudan
Mr Peter Banda	Zambia
Mr Charles Tongai Bopoto	Zimbabwe
Mr Mandivenga Caetano	Zimbabwe
Mr Mohan Raj Chapagain	Nepal
Mr Grumel Ghatoara	United Kingdom
MrPresley Chilonda	Zambia
Mr Jasper Cook	United Kingdom
Mr Ruud Crul	Netherlands
Mr Alemayehu Ayele Endale	Ethiopia
Mr Robert Geddes	Zimbabwe
Mr Kingstone Gongerah	Zimbabwe
Mr Mervyn Henderson	South Africa
Ms Taapopi Jeanette Shirley Ithana	Namibia
Dr Rodrigues Alberto Jamine	Mozambique
Mr Robert Kakiiza Kagaba	Uganda
Mr Peter Kome	Sierra Leone
Mr Mohamed Lahai	Sierra Leone
Mr Nkululeko Leta	Zimbabwe
Dr Fikiri Fredrick Magafu	Tanzania
Mr Joachim Mimaria	Kenya
Mr Victor Miti	Zambia
Dr Rodgers Bangi Mugume	Uganda
Mr Grace Mulondo	Uganda
Mr Azni November	South Africa
Dr Ignasio Ngoma	Malawi
Ms Camilla Lema	USA
Dr Adewole Simon Oladele	Botswana
Mr George Ngozi Omange	Nigeria
Mr Michael Pinard	United Kingdom
Mrs Lerato Molefe	Lesotho
Mr Samuel Ndengani Monzele	DRC
Miss Caitlin Poole	Australia
Mr Gerome Rich	United Kingdom
Dr Mark Henry Rubarenzya	Uganda
Mr Leslie Sampson	United Kingdom
Mr Ram Krishna Sapkota	Nepal
Mr. Alusine Abdulai Sesay	Sierra Leone
Mr Hilario Tayob	Mozambique
Ms Madeleine van Heerden	South Africa
Mr Andre van Gryp	South Africa
Mr Gerrie van Zyl	South Africa
Mr Benoit Verhaeghe	South Africa
Mrs Caroline Visser	Netherlands
Mr Robin Workman	United Kingdom

Annex 3. Programme of the KM Workshop

8:30 - 9:45	**SESSION 1 - KM AND RECAP KM SUPPORT ACTIVITIES**
8:30 - 8:40	Opening Statement Introduction to the workshop and session 1 [Ruud Crul]
8:40 - 9:00	Introduction to Knowledge Management [Ruud Crul]
9:00 - 9:45	Presentation by Ms Madelein van Heerden (CSIR, SA) on findings of the ReCAP KM studies and workshops in Tanzania, Mozambique, and Kenya; Short statements by participants on activities & plans in their own countries (e.g. ReCAP activities in Uganda, Nepal and Bangladesh) Discussion on ReCAP KM support activities, needs and challenges identified in different countries
9:45 – 11:00	**SESSION 2 - INSTITUTIONAL CAPACITY OF NATIONAL RESEARCH CENTRE**
9:45 - 10:10	**Introduction session 2- Institutional Capacity for KM of national Transport Research centres** ARTREF - Presentation by Mr Alemayehu Ayele, ARTReF Vice President, on ARTReF's views on knowledge management and how ARTReF plans to address this topic in its strategy/ business plan National Transport Research Centre of Ethiopia – Mr Alemayehu Ayele, Research and Development Director, ERA, Ethiopia
10:10 – 11:10	**KM supporting research centres with their activities and services** How can KM support national research centres in carrying out their research activities and providing demand-led advisory services to policy and practice stakeholders in their countries? Introduction to Knowledge Mapping [Ruud Crul] **Knowledge Mapping Exercise – part 1** Group work Plenary presentations by rapporteurs of the groups and discussion
11:10 - 11:30	**Coffee break**
11:30 - 11:35	**SESSION 3 - CAPACITY FOR KM (SKILLS & TOOLS)**
11:30 – 11:35	**Introduction session 3**
11:35 – 12:35	What kind of Systems & Tools, HR and skills the centres need for their information and knowledge management and I&K sharing? What are the challenges and solutions? **Knowledge Mapping Exercise - part 2** Group work – and plenary presentations by groups and discussion
12:35-13:00	**SESSION 4 - WRAP–UP AND CONCLUSIONS OF KM WORKSHOP**
12:35 – 13:00	How can ReCAP support the KM activities of the national research centres? Summary, conclusions and recommendations

Annex 4. Presentations

1. An introduction on Knowledge Management by Mr Ruud Crul;
2. Developing the Capacity for Sustainable Knowledge Management in African (and Asian) Transport Research Centres: Observations from Studies in Kenya, Mozambique & Tanzania by Ms Madeleine van Heerden;
3. ARTReF - African Road and Transportation Research Forum - Introduction and Status by Mr Alemayehu Ayele, Vice President of ARTReF;
4. Knowledge and Information Management – the Road Research Centre in Ethiopia by Mr Alemayehu Ayele, Research and Development Director, ERA, Ethiopia.

Annex 4.1 An introduction on Knowledge Management by Mr Ruud Crul

Introduction on Knowledge Management

ReCAP

Institutional Capacity for Knowledge Management of Transport Research Centres in Africa and Asia
ReCAP KM Workshop

Ruud Crul
17 November 2016, Caledon, South Africa

KM Workshop Objectives

- To raise awareness about knowledge management as a supporting discipline in the core process of knowledge generation by the research centres;
- To address issues related to the institutional capacity for KM;
- To inform participants of the current KM projects supported by ReCAP and have participants discuss and exchange experiences in implementing KM initiatives within their institutions.

KM Workshop

Transport Research Centres in Africa and Asia

AfCAP AsCAP

SCOPE
Developing institutional capacity for KM at the research centres

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KM Workshop

TRANSPORT RESEARCH CENTRES

Large differences between countries

- Status – some countries have a centre established, others are in process of establishing a centre, and other have plans for setting up a research centre
- Legal status and institutional context differ between countries
- Differences in mandate, scope, research objectives, # of staff and budget

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KM Workshop

Sessions

1. Introduction on KM and ReCAP KM support activities
2. Institutional Capacity for KM at regional level and national level
3. Practical approach for KM at the research centres and the use of two tools to develop, plan and implement demand-led KM activities
4. Wrap-up session with conclusions and recommendations

Workshop Programme – SESSION 1

8:30 - 9:45	SESSION 1 - KM AND RECAP KM SUPPORT ACTIVITIES
8:30 - 8:40	Opening Statement Introduction to the workshop and session 1 (Ruud Crul)
8:40 - 9:00	Introduction on Knowledge Management (Ruud Crul)
9:00 - 9:45	Presentation by Ms Madelein van Heerden (CSIR, SA) on findings of the ReCAP KM studies and workshops in Tanzania, Mozambique, and Kenya; Short statements by participants on activities & plans in their own countries (e.g. ReCAP activities in Uganda, Nepal and Bangladesh) Discussion on ReCAP KM support activities, needs and challenges identified in different countries; Conclusions

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ReCAP KM Workshop - Caledon, South Africa, 17 Nov 2016

1

Introduction on Knowledge Management

Workshop Programme – SESSION 2

9:45 – 11:00	SESSION 2 - INSTITUTIONAL CAPACITY FOR KM OF NATIONAL RESEARCH CENTRES
9:45 – 10:10	Introduction session 2- Institutional Capacity for KM of national Transport Research Centres Presentation by Mr Alemayehu Endalu, ARTRoF Vice President, on ARTRoF's views on knowledge management and how ARTRoF plans to address Knowledge Management in its strategic/ business plan National Transport Research Centre of Ethiopia – Mr Alemayehu Endalu, Research and Development Director, ERA, Ethiopia
10:10 – 11:10	**KM supporting research centres with their activities and services** How can KM support national research centres in carrying out their research activities and providing demand led advisory services to policy and practice stakeholders in their countries? Introduction to Knowledge Mapping (Ruud Cruz) **Knowledge Mapping Exercise – part 1** Group work Plenary presentations by rapporteurs of the groups and discussion
11:10-11:30	Coffee break

Workshop Programme – Sessions 3 and 4

11:30 - 12:35	SESSION 3 - CAPACITY FOR KM (SKILLS & TOOLS)
11:30 – 11:35	Introduction session 3
11:35 – 12:35	What kind of Systems & Tools, HR and skills the centres need for their information and knowledge management and I&K sharing? What are challenges and solutions? Knowledge Mapping Exercise – part 2 Group work Plenary presentations by groups and discussion
12:35-13:00	SESSION 4 - WRAP-UP AND CONCLUSIONS OF KM WORKSHOP
12:35 – 13:00	How can ReCAP support the KM activities of the national research centres? Summary, conclusions and recommendations

KM Workshop

What are
YOUR
Expectations ?

Quick inventory – each participant will put at least one expectation on a post-it and put it on the poster board

KM Workshop

SESSION 1

Introduction to Knowledge Management

Outline

- Definition of KM
- How to implement KM?
- Stepwise approach
- Introduce two tools that can be used in the approach
- Result: Plan for KM at the research centre

Knowledge Management

Many definitions of KM

ReCAP KM Workshop - Caledon, South Africa, 17 Nov 2016

2

Introduction on Knowledge Management

Knowledge Management

Definition used by ReCAP in their KM Strategy:

Knowledge management is the systematic management of an organization's knowledge assets for the purpose of creating value and meeting tactical & strategic requirements; it consists of the initiatives, processes, strategies, and systems that sustain and enhance the storage, assessment, sharing, refinement, and creation of knowledge.

Knowledge Management

I use: KM is 'assuring that the **right people** get the **right information/ knowledge** at the **right time** in the **right form** ***to do their work***'

How to implement KM?

- **WHY**
  - Drivers & guiding principles
- **HOW**
  - Stepwise approach
- **Result**
  - KM Action Plan

KNOWLEDGE MANAGEMENT

WHY KM CAPACITY AT RESEARCH CENTRES?

- KM is a process to support research centre's key activities in research and advisory services provided to policy and practice stakeholders
- **DRIVERS?**

DRIVERS FOR KNOWLEDGE MANAGEMENT

- Improve performance (effectiveness and efficiency)
- Improve access to relevant data, information and knowledge
- Build up an institutional memory
- Knowledge retention (within organization)
- Share knowledge (cases, LLs, GPs, methods, tools)
- Better informed stakeholders
- Improve decision making
- Stakeholders use information and knowledge shared
- Stimulate learning and innovation

Knowledge Management

KM deals with 3 components:
PEOPLE , PROCESSES and TECHNOLOGY

1. **People** – focus on staff & key stakeholders
2. **Processes** – Link KM to research objectives & mandate of the Research Centre + needs of stakeholders
3. **Technology** – supporting systems and tools & channels to store, share data, information & knowledge

ReCAP KM Workshop - Caledon, South Africa, 17 Nov 2016

3

Introduction on Knowledge Management

Knowledge Map

Introduction to Knowledge Management

Summary

- Definition of KM
- How to implement KM?
- Stepwise approach
- Introduce two tools that can be used in the approach
- Result: Plan for KM at the research centre

ReCAP KM support activities

- Presentation by Ms Madelein van Heerden (CSIR, SA) on her findings of the ReCAP KM studies and workshops in Tanzania, Mozambique, and Kenya;
- Discussion session:
  - Findings of the work done by Madelein van Heerden
  - ReCAP KM activities & plans in other countries (Uganda, Nepal and Bangladesh)
  - KM needs and challenges of research centres
  - Look at how ReCAP can support research centres in developing institutional capacity for KM

KM Workshop

SESSION 2

Workshop Programme – SESSION 2

9:45 – 11:10	SESSION 2 - INSTITUTIONAL CAPACITY FOR KM OF NATIONAL RESEARCH CENTRES
9:45 - 10:10	Introduction session 2- Institutional Capacity for KM of national Transport Research Centres Presentation by Mr Alemayehu Endale, ARTRoP Vice President, on ARTRoP's views on knowledge management and how ARTRoP plans to address Knowledge Management in its strategy/ business plan National Transport Research Centre of Ethiopia – Mr Alemayehu Endale, Research and Development Director, ERA, Ethiopia
10:10 – 11:10	KM supporting research centres with their activities and services How can KM support national research centres in carrying out their research activities and providing demand-led advisory services to policy and practice stakeholders in their countries? Introduction to Knowledge Mapping (Ruud Civi) **Knowledge Mapping Exercise – part 1** Group work Plenary presentations by rapporteurs of the groups and discussion
11:10-11:30	Coffee break

Knowledge Map

Knowledge map tool provides a 'one-pager' for a research activity or advisory service by a research centre.

Introduction on Knowledge Management

Research activities/services

1. Identify research activities & services based on research objectives and stakeholders needs
2. Priority setting to select the most important research activities & key services
3. Knowledge maps for the selected research activities & services
4. Information can be used to the KM Piano for the KM overview to be used for the KM planning

Session 2 and 3 – Knowledge Mapping

1. Knowledge mapping for one Research activity

2. **Research activity on 'the impact of DUST pollution on gravel roads'**
   - Identify and assess the socio-economic effects of dust pollution on people (living close to the road), their livelihoods and the environment
     (Next step: identify and select solutions to reduce the impact of dust)

Impact of dust on gravel roads

Background

- Dust is seen as a problem in several countries in Africa and Asia
- It has impacts on people, livelihoods, and environment close to the roads
- Study will have to identify these impacts and assess how large the impacts are.

Knowledge Mapping

1. We will start with the boxes 1-7 in this session
2. In the next session boxes 8-10

- Split into 4 groups
- Each group will do his own knowledge mapping
- Each group will have a rapporteur that will present the mapping in the plenary session
- Use sheets for the different boxes:
  - Box 1 and 2 on one sheet
  - Box 3, 4 and 5 on three sheets
  - Box 6-7 on 1 sheet

KM Workshop

SESSION 3

Workshop Programme – Sessions 3 and 4

11:30 - 12:35	SESSION 3 - CAPACITY FOR KM (SKILLS & TOOLS)
11:30 – 11:35	Introduction session 3
11:35 – 12:35	What kind of Systems & Tools, HR and skills the centres need for their information and knowledge management and I&K sharing? What are challenges and solutions? Knowledge Mapping Exercise - part 2 Group work Plenary presentations by groups and discussion
12:35-13:00	SESSION 4 - WRAP-UP AND CONCLUSIONS OF KM WORKSHOP
12:35 – 13:00	How can ReCAP support the KM activities of the national research centres? Summary, conclusions and recommendations

Introduction on Knowledge Management

Knowledge Mapping exercise

- **In this session we will deal with boxes 8-10 of the knowledge map:**

Knowledge Mapping

In this session we deal with boxes 8-10

- Remain in the same groups
- Use sheets for the different boxes:
  - Box 8, 9 and 10 on 3 sheets

KM Workshop

SESSION 4

KM Workshop – Session 4

WRAP-UP of KM Workshop

- Summary and conclusions
- Recommendations
  - How can ReCAP support the KM capacity of the research centres?

Annex 4.2 Presentation by Ms Madelein van Heerden

Development the Capacity for Sustainable KM in Africa (and Asia) Transport Research centres: Observations from Studies in Kenya, Mozambique and Tanzania

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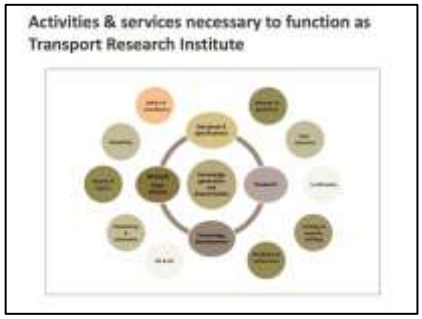
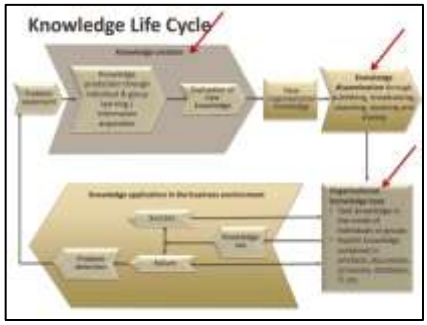
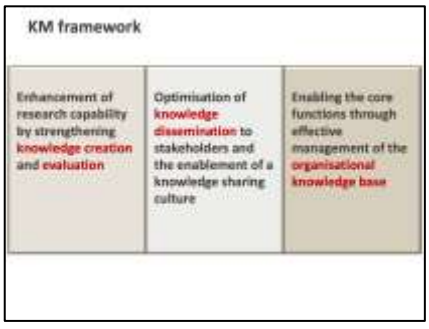
Development the Capacity for Sustainable KM in Africa (and Asia) Transport Research centres: Observations from Studies in Kenya, Mozambique and Tanzania







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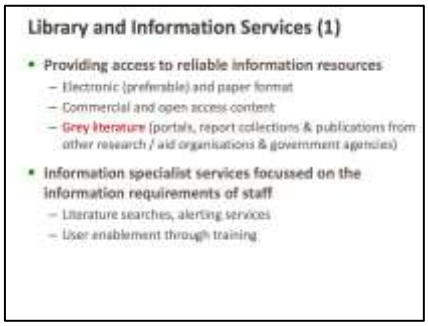

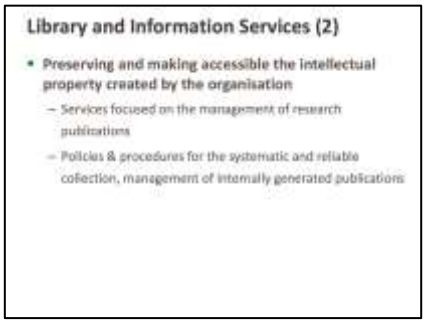

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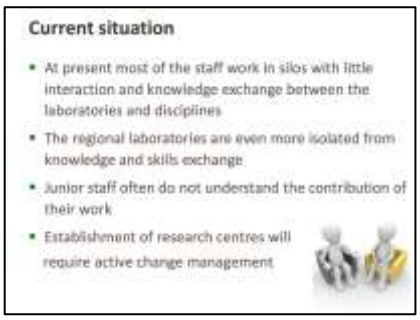

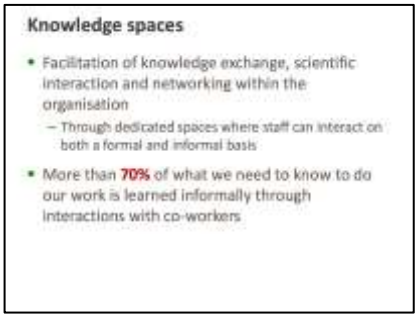

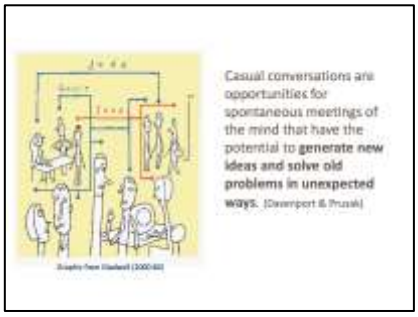

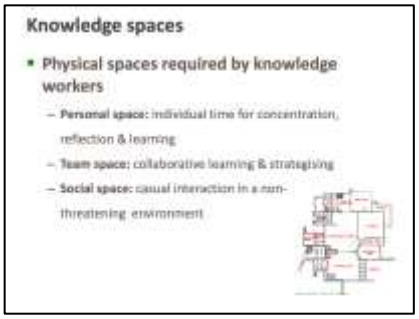

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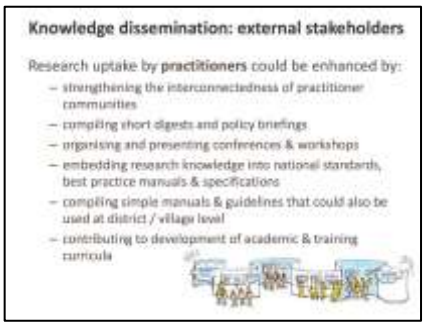

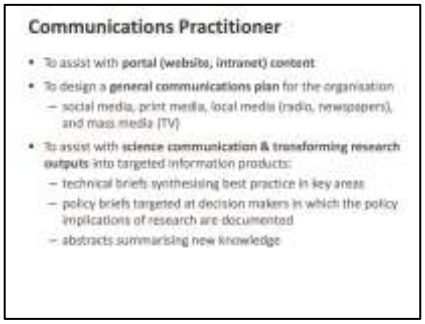

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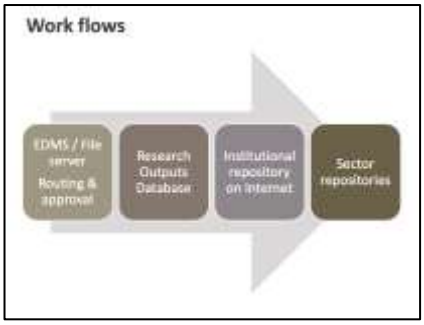
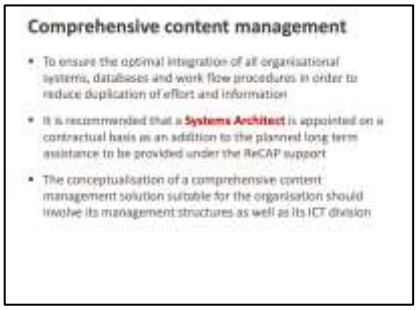
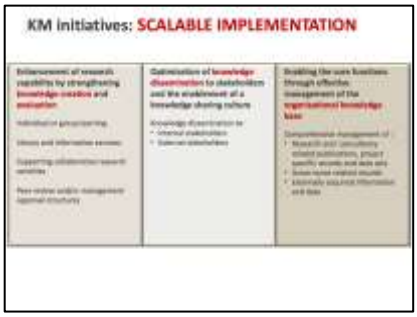
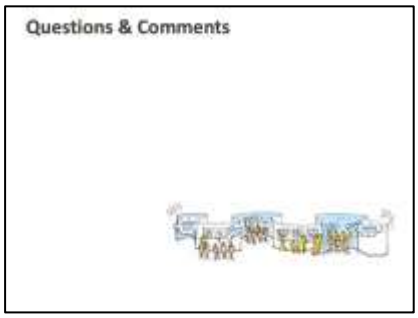








Annex 4.3 Presentation by Mr Alemayehu Ayele

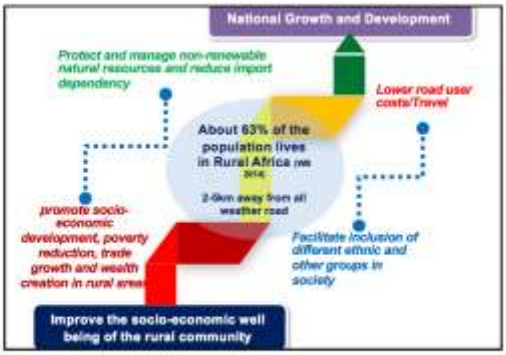
ARTReF - African Road and Transportation Research Forum - Introduction and Status

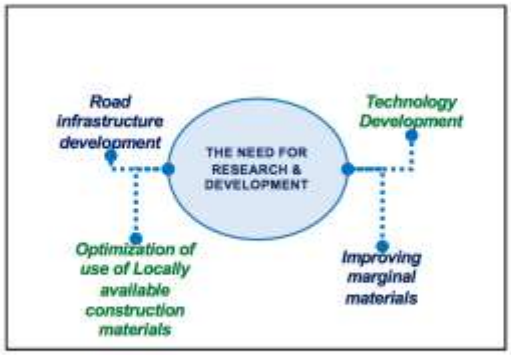
ARTReF
Introduction and Status

14 – 18 Nov 2016, Caledon, South Africa

ReCAP ARTReF AfCAP

1. INTRODUCTION

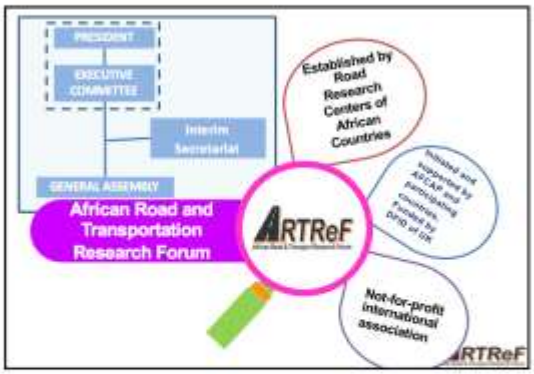


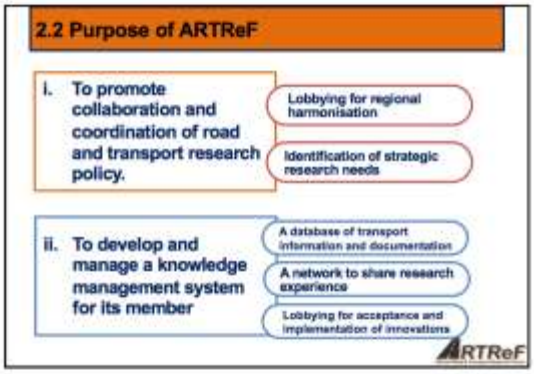


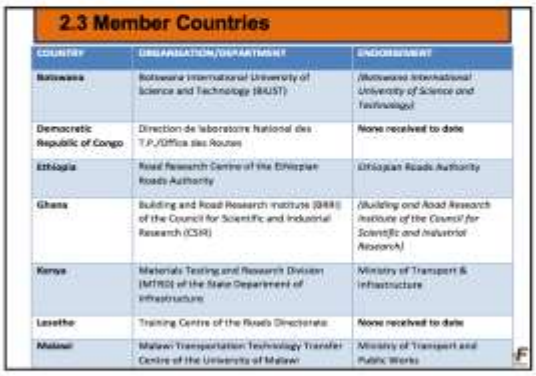
- Most problems associated with Rural Access is similar in Sub Saharan Africa and is characterized by (mostly), long distance from social, health and economic centers.
- Road and Transport Research programs in Africa shall support and facilitate the improvement of Rural Access.
  - Countries are now establishing Road Research Centre to support their road development programs
    - Focusing on Low Volume Rural Roads research
    - to help utilize locally available materials and other resources more efficiently.
    - Increase the rural connectivity more economically and in short period of time. (URRAP)
- AFCAP (Africa Community Access Partnership) supports develop their capacity of research
- The emerging and existing African Road Research Centers collaborated to form an international Research Forum (called ARTReF) though the help of AFCAP

2. ARTReF

ARTReF - African Road and Transportation Research Forum - Introduction and Status







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ARTReF - African Road and Transportation Research Forum - Introduction and Status

COUNTRY	ORGANISATION/DEPARTMENT	ENDORSEMENT
Mozambique	Centro de Pesquisa Rodoviário, Direcção de Manutenção	Administração Nacional de Estradas (ANE)
Namibia	Division: Research and Development of the Roads Authority of Namibia	Roads Authority of Namibia
Nigeria	Nigerian Building and Road Research Institute (NBRRI)	(Federal Ministry of Science and Technology)
Sierra Leone	Division: Feeder Roads Development of the Sierra Leone Roads Authority	Sierra Leone Roads Authority
South Africa	CSIR Built Environment of the Council for Scientific and Industrial Research	The South African National Roads Agency (SOC) Ltd
South Sudan	Materials Testing Laboratory	Ministry of Transport, Roads and Bridges
Tanzania	Local Government Infrastructure and Transportation Research Centre (LoGITReC)	President's Office – Regional Administration and Local Government (PO-RALG)

COUNTRY	ORGANISATION/DEPARTMENT	ENDORSEMENT
Zambia	Research and Development Unit of the Road Development Agency	Ministry of Transport, Works, Supply and Communications
Zimbabwe	Department of Roads	Ministry of Transport and Infrastructural Development
POTENTIAL NEW MEMBERS:		
Rwanda		
Uganda		

ARTReF

2.4 Areas of Collaboration

- Knowledge sharing of research outputs
- Regional, strategic research programmes and projects
- Collaboration on concept notes for regional projects
- Identification of funding opportunities
- Ensure linkages to regional structures and organisations for improved lobbying
- Formulation of research strategies and policies, and implementation plans for the Forum
- Influencing national roads and transport policy
- Collaboration on scientific validation and peer review
- Capacity building

ARTReF

3. Current Projects/Identified Needs

i. **Capacity Building**
   - Capacity of Road Research Centers

ii. **Knowledge and Information Sharing among member countries**

iii. **Current Regional Projects**
   - Climate Vulnerability and Adaptation: Risk Management and Resilience Optimization for Vulnerable Rural Road Access; (Ethiopia, Ghana and Mozambique) –
     - *Identify, define and eventually trial pragmatic adaptation options that are available to counter impacts of current and future climate threats*

ARTReF

- Sustainable Maintenance Programme, focused on sustainability of LVRR -
  - *Identify, test, document and disseminate an improved approach, or approaches, including institutional arrangements, for an approach to asset management for the maintenance and improvement of local access to rural areas in sub-Saharan Africa*
- Monitoring and Evaluation of Research Trial sections (Ethiopia, Kenya Mozambique)
  - *The objective of the Monitoring & Evaluation Programme is to provide performance based evidence which will contribute to the establishment of appropriate standards for Low Volume Sealed Roads.*

ARTReF

- Investigation of Cinder Gravel for use in LVRR (Ethiopia)
  - *Focused on identification and classification of Cinder gravels through out the country as part of an effort to utilize locally available construction materials in the construction and maintenance of LVRR*
- LVRR Manuals (Ethiopia, Mozambique, Tanzania

iv. **Regional R&D**
- Harmonization and Updating of Materials Testing Standards

  Purpose: *preparation and adoption of appropriate testing standard to eliminate the use of specifications developed under different climatic conditions by standards that suit African conditions and traffic characteristics*

ARTReF

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ARTReF - African Road and Transportation Research Forum - Introduction and Status

v. Regional Capacity / Skills Development Needs

- National Research Centre Management Training
  Purpose: *facilitate the development of appropriate and the necessary capacity to manage the research centres through cooperation with, and learning from, international Research Institute's experience and capability. The key impacted group will be Middle Manager's who will be sensitised to research centre management, operational management and research programme management*
- Regional Capacity Building Programme
  - Purpose: *Following on a needs assessment study, to adopt a regional approach to the building of sustainable capacity, predominantly through research centres and through the establishment of a train-the-trainer programme. Activities could include: training courses, study tours, distance/e-learning, mentoring, secondments, joint research projects, post-graduate research*

ARTReF

4. CONCLUSION

- **We need to be able to share information and knowledge through establishing KICs within each of National Research Centers and preparing. Including in the Business plan of ARTReF.**
- **Member countries collaborate to create a strong forum to exchange knowledge generated through research and development activities**

THANK YOU!

Alemayehu Ayele
email: alem.nhm@gmail.com

ARTReF

Annex 4.4 Presentation by Mr Alemayehu Ayele on KM activities at ERA, Ethiopia

Knowledge and Information Management – the Road Research Centre in Ethiopia

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Knowledge and Information Management – the Road Research Centre in Ethiopia

2. Knowledge & Information Management

2.1 Gaps in Knowledge Management

- The existing practice in Knowledge management was poor and one can notice that there is no experience or established system.
- Reference materials such as books, journals etc. are not found in sufficient amount that hinders the performance of researchers
- Therefore, the gap in the practice of managing information and knowledge was high and need to be addressed as soon as possible.

- Lack of information leads to weak research results and discourage young researchers
- Need for Knowledge and Information Centre (KIC) Establishment within the RDD for the purpose of facilitating knowledge and information capturing/creating and sharing.

2.2 Measures taken

- Experience from international research centers was required and study tours were organized,
- South African Research Centre, CSIR was visited and their practices as to how they are managing knowledge and information were benchmarked.
- Based on that, a business plan was developed for KIC in Research and Development Directorate(Submitted to AFCAP).

2.3 Current Status

- Established KIC within the temporary Road research Centre

Aims

- *Create and continuously improve knowledge and information management system and strategies to follow in implementing, preserve and curate relevant information and data sets*
- *To increase the visibility of ERA Research outputs globally.*

- Linkage to Local Universities to cooperate on knowledge and information sharing, training and consulting.
- Obtained support from AFCAP:
  - Books
  - Computers (Desktop and Laptop),
  - copier and printers
  - Server

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Knowledge and Information Management – the Road Research Centre in Ethiopia

*Currently a proposal is prepared and Linkage to one of International Knowledge base is under consideration,

*Purchase of more than 60 reference books is being made

*High speed internet access is available

*AFCAP resource base is now Linked to ERA web site under the Research & Development section

Conclusion

* Further works are required to fully establish the KIC
* Need to link to international knowledge base
* Develop awareness of the researchers and the road sector about the AFCAP recourses linked to ERA website

*THANK YOU!

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Annex 5. Guidance for Knowledge Mapping for research activities and services

For each research activity or advisory service to be provided by the research centre as identified by the needs assessment and the research mandate and objectives a knowledge map can be prepared. The Knowledge Map, shown in the table below, will provide research centres all information on data, information and knowledge needed for a specific research activity or advisory service.

<table>
<tr><td colspan="5">BOX 1
RESEARCH ACTIVITY/SERVICE: ……
THEMATIC AREA: …….</td></tr>
<tr><td>3. DATA, INFORMATION & KNOWLEDGE INPUTS
[List ordered in terms of priority]</td><td>4. PROVIDERS OF THE INPUTS
[own activity; stakeholders at national, sub-national local and international level]</td><td>2. SERVICE
[Detailed description]
5. GAPS IDENTIFIED FOR INPUTS
[Based on inputs given]</td><td>6. INFO & KNOWLEDGE OUTPUTS
[List ordered in terms of priority]</td><td>7. RECIPIENTS OF THE OUTPUTS
[stakeholders at national, sub-national local and international level]</td></tr>
<tr><td colspan="2">8. SUPPORTING SYSTEMS & TOOLS - CHANNELS
[Existing and new SYSTEMS & TOOLS used for inputs or outputs, and channels to be used for dissemination]</td><td>9. CHALLENGES in RESEARCH & SERVICE DELIVERY
[internal and external challenges]</td><td colspan="2">10. SOLUTIONS/IDEAS FOR CHALLENGES
[→recommendations for ReCAP KM support]</td></tr>
</table>

How to prepare the Knowledge Map

You will be filling the boxes of the above table following the order **from 1 to 10**

1. Start with short description of the research activity/service in box 1.
2. In Box 2 use the detailed description of the service/activity

3. In Box 3 you will give for each service the inputs needed (data, reports, expert advice, consultation meeting with experts or stakeholders, working group etc.)
4. In Box 4 you indicate the providers that will/can provide these inputs (use the same order as in box 3) – see below
5. In Box 5 you can indicate any gaps observed/expected when inputs are not available/cannot be provided.
6. In Box 6 you give the outputs created by the activity or service by the research centre
7. In Box 7 you can indicate for whom the outputs are meant (use the same order as in Box 6).

8. In Box 8 you can indicate existing systems and tools that you are using/want to use for the inputs & outputs
9. In Box 9 (organizational/institutional) challenges that have an impact on the research activity or service to be delivered (a list of key challenges)
10. In Box 10 you list solutions for the challenges listed in Box 9 (wish list/suggestions list).

Annex 6. Photo impressions of KM Workshop