Baseline survey of past and current road sector research undertakings in Uganda and establishment of a Research Management System (RMS)

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Outline

- Background
- Methodology
- Analysis and Findings
- RMS
- Conclusions and Recommendations
Project Objectives

- Review, analyse, and compile a comprehensive listing of all past and current research.

- Categorise past and current research and comment and/or make recommendations on the validity and reliability of the outcomes of each research undertaking.

- Undertake a gap analysis to identify and prioritise research knowledge gaps.

- Assess the prevailing modes of knowledge management

- Develop an implementation plan for the establishment of a centralized knowledge base of research undertakings
Project Scope

- Identify and review the current institutional, organizational and technical issues relating to road-related research in Uganda.

- Review the institutional frameworks of key institutions and agencies that undertake road related research in other countries to identify research best practices.

- Propose a structure and institutional arrangement to better facilitate and coordinate road research in the country.

- Evaluate the level of dissemination and uptake of research recommendations and feedback by stakeholders.

- Establish an EDMS – Research Management System
Team

- UNRA
- Ministry of Works & Transport
- Statehouse of Uganda
- UNCST
- The European Union
- KCCA
- Uganda Road Fund
- Makerere University
- Ndejje University
- Kyambogo University
- Uganda Christian University
- The Private Sector
- Ministry of Water and Environment
- Ministry of Local Government
- Ministry of Finance, Planning, and Economic Development
- National Planning Authority
- Uganda Industrial Research Institute
- Mt. Elgon Labour-based Training Centre (MELTC)
Methodology

1. Institutional review and study methodology
   - Identify and assess key role players
   - Identify best practices
   - Framework for evaluating historic and current road research
   - Workshop

2. Field survey and Knowledge database design proposals
   - Collect, collate and analyse road research
   - Structure for facilitating and coordinating road research
   - Design a centralized knowledge database
   - Report

3. Deliver database and Final report
   - Implement the database
   - Workshop and Final Report

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Analysis of research

- Only reports and theses analysed, no papers

Road material stabilization

Simplified TT model

Efficient stabilization of marginal road materials in Uganda

Road materials stabilization options, processes and properties

Stabilizer characteristics and availability

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Key findings

- **Solution/Application level**: Majority
- **Platform level**: $1/3$ of the reports
- **Base level**: Least number of reports

- Expectation that *needs* lead to *base*, then *platform*, then *solution* level research is defied!!
- Lack of coordination between the 3 levels of research
- Clear evidence of lack of coordination of research efforts with subsequent duplication

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Key findings

- Specific test sections were identified as suitable for immediate field monitoring & research programme
- Generally technicians trained, but not certified
- Laboratories need certification & quality control to meet research standards
- No central repository where research is consolidated
The Research Management System (RMS)

- Web-based
- Open to all researchers
- Hosted by UNRA
- Has user registration procedures
- Has research management procedures
The Research Management System (RMS)

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Research Management Procedure

1. A registered user will be able to submit research to the Research Management System.
2. The system administrator will receive an email, requesting research to be evaluated (approved/declined).
3. The system administrator will log in and approve/decline the research.
4. The user will receive a notification email stating that research has been approved/declined.

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Project Status

- Gap analysis and prioritisation not undertaken
- RMS security vulnerability tested by UNRA IT
- RMS functionality tested in national research stakeholders meeting on 30th Aug. 2017, User Acceptance Report generated
- Fully operational RMS expected soon
- Implementation plan for the RMS in early stages
Key Conclusions

- The lack of an overall research entity in Uganda - biggest hindrance towards implementation of research
- Implementation of local research outcomes e.g. MELTC low volume seals not happening - no national coordination or formalized communication
- (Research) laboratories are not accredited; equipment with varying degrees of functionality
- Researcher competence: Most available research by undergrads – no funding for industry research
- Research quality & reliability: Official research review system is lacking, except for the internal review system of examiners in the academic institutions
Key Recommendations

- A focused policy should be developed on active dissemination of research outputs to gain the most value for the investment made.

- An objective process should be developed for evaluation of researcher competence in the Ugandan context.

- National effort should be launched to evaluate the condition of the various (research) laboratories and develop a roadmap for accreditation.

- The roads research budget in Uganda should be benchmarked and approved along international guidelines in terms of the % of GDP.
Key Recommendations

- An autonomous Centre of Excellence (CoE) required to coordinate the research. CoE should link into UNRA structure to ensure that coordination is done with a national focus, incorporating all relevant stakeholders.
### What next?

<table>
<thead>
<tr>
<th>#</th>
<th>Roadmap Activity</th>
<th>Starting date after approval of AfCAP project recommendations and initiation of UNRA project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Project initiation – development of project within UNRA based on conclusions and recommendations from AfCAP project</td>
<td>Months 0 to 3</td>
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<tr>
<td>2</td>
<td>Implement Research Management System – includes rolling out the system into an operational status.</td>
<td>Months 0 to 3</td>
</tr>
<tr>
<td>3</td>
<td><strong>Arrange and present national needs assessment event</strong> – incorporating national (all stakeholders) workshop to ensure that needs are assessed and prioritized for at least a 5-year programme. Incorporates gap analysis as outcome.</td>
<td>Months 3 to 6</td>
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<tr>
<td>4</td>
<td>Develop national coordination system of all road-related research needs in Uganda</td>
<td>Months 3 to 6</td>
</tr>
<tr>
<td>5</td>
<td>Develop process for evaluation of researcher competence</td>
<td>Months 3 to 6</td>
</tr>
<tr>
<td>6</td>
<td>Evaluate condition of laboratories and develop roadmap for accreditation</td>
<td>Months 3 to 6</td>
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<tr>
<td>7</td>
<td>Evaluate availability of road survey equipment</td>
<td>Months 3 to 6</td>
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<tr>
<td>8</td>
<td>Benchmark Uganda roads research budget along international guidelines</td>
<td>Months 3 to 6</td>
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<tr>
<td>9</td>
<td>Develop and present course on research methodology</td>
<td>Months 3 to 6</td>
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<tr>
<td>10</td>
<td><strong>Arrange and present national workshop to discuss and resolve on Activities 1 to 9 as input into Activities 11 to 18. Activity should include resolution on outcome of gap analysis based on Activity 3.</strong></td>
<td>Months 7 to 9</td>
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<td>11</td>
<td>Establish national roads research discussion forum</td>
<td>Months 7 to 9</td>
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<tr>
<td>12</td>
<td>Develop CoE mandate and structure</td>
<td>Months 10 to 12</td>
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<tr>
<td>13</td>
<td>Develop policy on active and managed dissemination of research outputs</td>
<td>Months 10 to 12</td>
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<td>14</td>
<td>Initiate autonomous CoE through national stakeholder event</td>
<td>Month 13</td>
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<td>15</td>
<td>Mandate all road-related research and investigations to be conducted through the CoE</td>
<td>Months 13 to 15</td>
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<td>16</td>
<td>Discuss and agree custodianship of national roads specification / standards documents</td>
<td>Months 13 to 15</td>
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<tr>
<td>17</td>
<td><strong>Conduct regular (5-monthly) national stakeholder events (follow-up from Activity 11)</strong></td>
<td>Months 13 onwards</td>
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<td>18</td>
<td>Evaluate implementation of CoE and related activities on annual basis</td>
<td>Months 24 onwards</td>
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Thank you for your attention

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