



ReCAP
Research for Community Access Partnership



Back Analysis Project – Findings and Recommendations for Phase 2/Phase 3 Inception

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Presentation Topics

- Project Background
- Activities Conducted in Phase 1
- Activities Conducted in Phase 2
- Main Data Gaps Identified in Phase 2
- Main Activities Planned for Phase 3
- Completed Reconnaissance Visits
- Final Remarks

Project Background – *What is ‘The Back Analysis Project’?*

- RAF2069A: Development of Guidelines and Specifications for Low Volume Sealed Roads through Back Analysis

Project Background – *What are Back Analysis Projects?*

- Projects that look back in time at the PERFORMANCE OF EXISTING ROADS (or roads that EXISTED)
 - design,
 - construction,
 - characteristics of materials used,
 - All in relation to climatic conditions and traffic
- and analyse these to provide evidence for revisions to existing standards

Project Background - *objectives*

- **Review of performance of existing LVSRs**
 - Create a database of existing LVSR research
 - Use info to review and refine specifications and guidelines for LVSRs
 - Refine or verify catalogues currently used for design
 - Provide a basis for use of non-conventional designs and materials
- **Capacity Building**
 - Enhance capacity of AfCAP partners in assessing, analysing and managing LVSR data
- ***Uptake and Embedment***
 - *Disseminate findings for adoption of outputs into national guidelines, manuals, specifications and standards*

Project Background – *Why are Back Analysis Projects Important?*

- Looks at roads where the climatic factors have acted on the materials for a long time
- Evidence-based performance of LVSRs
- A cheaper way of gathering performance data (Construction of full trials expensive - AASHO road about \$30 m in 1958)

Activities Conducted in Phase 1

Phase 1 (Completed)

- Web-based database structure created

lvroadsdata.com

- Existing research/experimental studies identified – some added to the database (>1 million rows) includes **SEACAP data**
- Dissemination workshop conducted in Dar – Es-Salaam

Activities Conducted in Phase 2

Phase 2 (Completed)

- Training of advanced DB users from 12 AfCAP countries
- Further improvement of the database structure
- Further addition of data from more research/experimental studies (> 3 million rows)
- Detailed Gap Analysis and Identification of key study areas for Phase 3

Main Data Gaps Identified in Phase 2

- LVSRs with surfacing +10 yrs (no reseal) in areas of high rainfall
- Pavements that have carried traffic loading in the range 0.5 MESA to 1MESA
- Non-conventional surfacings (Otta, Sand, Combinations, Road Mix, CMA, etc) especially in areas of high rainfall
- Dealing with weak subgrades for LVSRs at 0.5 MESA to 1MESA

Main Activities Planned for Phase 3 (now underway)

- Field investigations
- Laboratory testing
- Data analysis (Combining data in database+ Phase 3 fieldwork + SEACAP data)
- Dissemination of findings (to enable uptake and embedment) - Workshop
- Capacity Building
- Production of a scientific paper

Completed Reconnaissance Visits (part of Field Investigations)

- To identify study sites to fill the gaps identified in Phase 2
- Conducted in Ghana, Mozambique, Uganda, and Zambia.
- (Tanzania) – identified good roads

Completed Reconnaissance Visits (Ghana)



- DSD, 12 yrs plus (no reseal)
- Thin pavement
- Neat lateritic gravel
- High rainfall

Completed Reconnaissance Visits (Ghana)



- DSD, 20 yrs plus (no reseal)
- Thin pavement
- Neat lateritic gravel
- High rainfall
- Note particle size
- **Mozambique** also similar

Completed Reconnaissance Visits (Uganda)



- Double Sand Seal, 8 yrs (no reseal)
- Over 1000 vpd
- High rainfall

Completed Reconnaissance Visits (Zambia)



- DSD, 15 yrs (no reseal)
- Through swamp
- Very low embankment
- High rainfall

- The Back Analysis Project will provide the evidence-based data and analysis results that will assist in the next revision manuals, guidelines and specifications. (Evidence for uptake and embedment)
- Cooperation from partner countries and in grasping this vision and continuing with this system beyond ReCAP.
- AfCAP countries – PLEASE ADD DATA TO THE DATABASE.



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Thank you for your attention

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