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Workshop on Roads, Culture and History
Interdisciplinary Crossroads
A Workshop on roads in Europe, Asia Africa, Latin America

Report on AFCAP contribution

February 2013

INTECH ASSOCIATES

This project was funded by the Africa Community Access Programme (AFCAP) which promotes safe and sustainable access to markets, healthcare, education, employment and social and political networks for rural communities in Africa.

Launched in June 2008 and managed by Crown Agents, the five year-long, UK government (DFID) funded project, supports research and knowledge sharing between participating countries to enhance the uptake of low cost, proven solutions for rural access that maximise the use of local resources.

The programme is currently active in Ethiopia, Kenya, Ghana, Malawi, Mozambique, Tanzania, Zambia, South Africa, Democratic Republic of Congo and South Sudan and is developing relationships with a number of other countries and regional organisations across Africa.

This material has been funded by UKaid from the Department for International Development, however the views expressed do not necessarily reflect the department's or the managing agent's official policies.

For further information visit
<https://www.afcap.org>

1. INTRODUCTION

The London University School of Oriental and African Studies (SOAS) invited AFCAP to contribute to a workshop entitled 'Roads, Culture and History: Interdisciplinary Crossroads – A workshop on roads in Europe, Asia, Africa and Latin America'.

The workshop was a one day event organised by SOAS and held at their main building in Thornhaugh Street, Russell Square, London on Saturday 2 February 2013.

Workshop contributions were provided by 10 academics and experts representing UK, Dutch and German institutions and organised into 5 chaired sessions each with a discussion opportunity.

The workshop was an initiative to allow an interchange of experiences and ideas on roads, their development and impact on communities.

The participants' disciplines spanned anthropology, geography, economics and engineering.

Robert Petts of Intech Associates was appointed by AFCAP to prepare and deliver a PowerPoint presentation at the workshop and raise the profile of AFCAP and other DFID funded transport research work.

2. THE WORKSHOP

The Poster for the workshop and the programme are provided in Annex 1 and 2 of this report.

The workshop provided an unusual opportunity to exchange experiences and views with academics and practitioners in the sector.

Different perspectives on the history and development of roads and networks, cultural dimensions and the impact on communities were provided, including on-going research.

The AFCAP presentation is provided in Annex 3. It presented selected facts about the road sector in developing countries, key challenges in the sector to develop affordable and sustainable transport networks, recent research by AFCAP and others, and made the case for a transport knowledge forum.

In the following discussion it was possible to emphasise the importance of appropriate standards and specifications and the use of appropriate technology. The improved benefits for local communities, local enterprises and employment from using local resource based approaches were also discussed.

Other workshop key discussion points included:

- Road as a socio-technical phenomenon
- Should road networks continue to spread (more related to developed countries)?
- Evidence of peaking of car travel in developed countries
- Young people in developed countries now less likely to get driving licence
- Does the right road get built (appropriate standards, route etc.)?
- Roads introduce possibility to escape rural subsistence
- Substantial time scales in life and benefits/dis-benefits streams of roads
- Does road building create demand?
- Scale of automobility space, including parking, in some developed economies
- The engineer's challenge of building stable structures in an unstable environment!

- The challenges of economic modelling of road investment impacts
- Obvious potential for local resource use is not always applied
- The challenges of achieving effective maintenance of infrastructure assets
- The Killing fields: and big differences in accident mortality rates between countries
- Impact of interruptions of mobility (more an issue in developed economies).

An important benefit of the workshop was to create new expert linkages for future inter-disciplinary interaction.

3. SUGGESTED FOLLOW UP

In follow on discussions, the issues of need and possible arrangements for a transport knowledge forum were discussed with the SOAS workshop organisers. The view was expressed that SOAS may be interested in being involved with the development of a transport knowledge forum that encompasses technical and socio-economic aspects of the transport sector in developing and emerging nations.

It is recommended that this interest is followed up to explore possible co-funding and resourcing mechanisms with SOAS and other sector stakeholders.

Roads, Culture and History: Inter-disciplinary Crossroads

A workshop on roads in Europe, Asia, Africa, Latin America



Saturday 2nd of February, 2013, 10.00-6.00pm. SOAS, 116. A limited number of places are available.

Clive Bell (Heidelberg, World Bank)

Frank Schipper (Leiden)

Penny Harvey (Manchester)

Peter Merriman (Aberystwyth)

Rob Petts (Africa Community Access
Programme)

Jan-Bart Gewald (Leiden)

Dimitris Dalakoglou (Sussex)

Nitin Sinha (York)

Alessandro Rippa (Aberdeen)

Marloes Janson (SOAS)

Discussant: John Urry (Lancaster)



SOAS
University of London

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Edward Simpson es7@soas.ac.uk

Roads, Culture and History: Inter-disciplinary Crossroads

A workshop on roads in Europe, Asia, Africa, Latin America

Programme

SOAS Main building Room 116

9.30 Tea and Coffee

WELCOME

10.00 - 10.15: Welcome and introduction by Edward Simpson

SESSION 1: Chair Edward Simpson

10.15 – 10.35: Jan-Bart Gewald

Roads, War, People and Labour: The Establishment of Colonial Rule in Zambia, 1890 – 1920

10.35 – 10.55: Nitin Sinha

Roads and Early Colonial State-Formation in India: A Historiographical Agenda

10.55 – 11.15: Discussion

11.15 – 11.30: Coffee break

SESSION 2: Chair Richard Axelby

11.30 – 11.50: Frank Schipper

Roads to Regional (Dis)Integration

11.50 – 12.10: Dimitris Dalakoglou

An Anthropology of the Road: Myths, Migration and Transnationalism Along the Albanian-Greek Cross-Border Motorway

12.10 – 12.30: Discussion

12.30 – 13.30: Lunch

SESSION 3: Chair Richard Fardon

13.30 – 13.50: Clive Bell

Extending the Network: An Economist's Reflections on PMGSY (Pradhan Mantri Gram Sadak Yojna – rural road building programmes in India)

13.50 – 14.10: Rob Petts

The Path to Prosperity: The Challenges to Overcome in Developing Sustainable Rural Road Networks in Emerging Nations

14.10 – 14.30: Discussion

SESSION 4: Chair Kanchana Ruwanpura

14.30 – 14.50: Peter Merriman

Geographies of Roads

14.50 – 15.10: Penny Harvey

Engineering in Action. Exploring the Material Politics of Road Construction in Peru

15.10 – 15.30: Discussion

15.30 – 15.45: Tea break

SESSION 5: Chair Kat Cagat

15.45 – 16.05: Alessandro Ripa

Subjectivity, Diaspora and the State: Traders and Goods on the Karakoram Highway

16.05 – 16.25: Marloes Janson

The Spiritual Highway: Nigeria's Lagos-Ibadan Expressway

16.25 – 16.45: Discussion

SESSION 6

16.45 – 17.30: Discussant/overview by John Urry, followed by a general discussion

17.30-19.00 Drinks

19.30 Dinner, Malabar Junction, 107 Great Russell Street, 02074369942

AFCAP presentation by
Robert Petts, Intech Associates

for

Roads, Culture and History: Inter-disciplinary Crossroads

A workshop on roads in Europe, Asia, Africa, Latin America



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**The Path to Prosperity –
The challenges to overcome in
developing sustainable rural road
networks in emerging nations**


Robert Petts
AFCAP Steering Group



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from the Department for
International Development


ISSUES FOR DISCUSSION

- Context
- Roads and poverty linkages
- Some statistics on road under-development
- Sector challenges
- Current Africa capacity issues – Royal Academy of Engineering
- Rationale for local-resource-based approaches
- Appropriate Standards
- Available tools and good practice knowledge (AFCAP, SEACAP, gTKP, IFG etc. initiative outputs)
- ‘Knowledge chain’ and current shortcomings
- Required Knowledge Forum

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CONTEXT


The World Bank Transport Business Strategy (2008-2012) advises:

- 1.2 billion of the world's poor still lack access to an all-weather road
- Between 40 and 60 % of people in developing countries live more than 8 km from a healthcare facility. Few transport services exist
- In some regions less than 15% of roads are paved
- Without effective rural transport systems, the **MDGs** and ALL rural development & poverty initiatives, agriculture & growth are substantially constrained
- There are serious concerns that the **MDGs** may not be achieved, unless radical new initiatives are taken.

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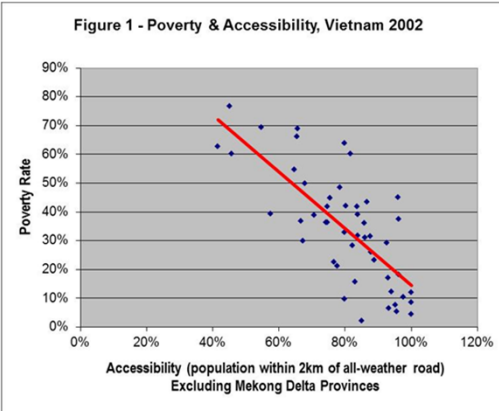
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ROADS AND POVERTY LINKAGES

- Roads a key 'enabler' of economic and social development
- Also vital for 'cohesion' and security
- Poverty linkages complex
- Recent study for DFID identifies strong poverty linkage evidence

Source : SEACAP



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ROADS AND POVERTY LINKAGES


Appropriately constructed **AND** maintained roads

- Provide year round access to services, inputs, trade, employment, education, health, economic & social activities
- Reduce unit transport costs
- Improve productivity
- Encourage investment
- Facilitate escape from subsistence





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STATISTICS

Country	Classified Road Network: Km Paved	Classified Road Network: Km Total	Percentage Paved	Population (millions)	km of paved road / million population	Min Wage rate (US\$ / day equiv)
South Sudan	200	20,000	1%	8	25	4
Ethiopia	7,476	149,177	5%	83	90	8
South Africa	70,000	754,000	9%	50	1,400	9
UK	394,000	394,000	100%	62	6,355	71




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SECTOR CHALLENGES

Improved management of the Rural Transport Infrastructure:

- Achieve improved and informed **policy & decision making**
- Strengthen **sector support framework** and **capacity**
- Improve **Research and Development** funding & arrangements
- Develop an **asset management culture** – ‘invent’ **maintenance!**
- Focus on **local-resource-based** methods
- Initiate a **Basic Access** approach
- Apply **appropriate standards and specifications**
- Involve and mobilise the various **stakeholders**
- Create ‘enabling environment’ for **transport services** providers
- Ensure Performance **audit (Transparency)**

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SECTOR CHALLENGES

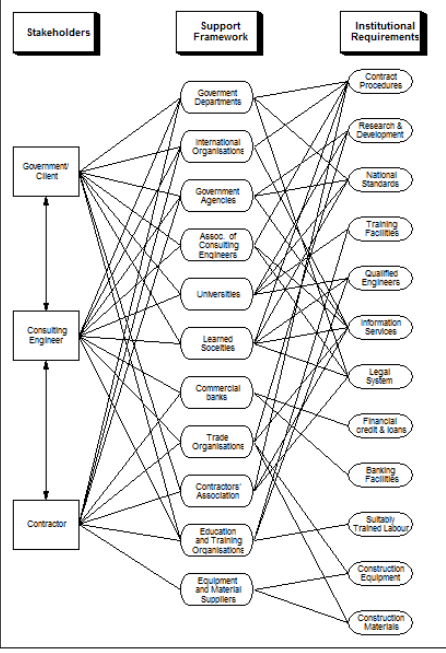
Sector Support framework is in place in Developed countries, however many components weak or missing in Developing countries.


Stakeholders need to work to improve support framework

Source: MART research


Action required: O’Neill et al

Linkages between Users and Providers in the Construction Industry



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AFRICA CAPACITY ISSUES : RAEng - EAP Report

Severe Local Engineering capacity deficiency (numbers & skills)

Due to:


- Insufficient government investment in engineering skills
- Out of date curricula and teaching methods (appropriate?)
- Weaknesses in academic and professional institutions
- Poor Asset Management culture
- Poor knowledge transfer
- Lack of Continuing Professional Development
- Brain drain

<http://www.raeng.org.uk/international/>

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NEED FOR LOCAL RESOURCE BASED APPROACHES



Developed countries: wage rate **>US\$100/day**
and credit **<10%pa**

This suggests capital intensive,
labour saving approaches are most appropriate

Emerging Countries: wage rate **<US\$10/day**
and 'real' credit **>20%pa**
(credit quotas increase 'market' rates)

This suggests Low-Capital (Capital saving),
Low-cost equipment, labour & local materials approaches are most
appropriate:

..... Local Resource Based Technology

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NEED FOR LOCAL RESOURCE BASED APPROACHES

The Versatile 2 axle Agricultural Tractor

Agricultural Tractors are the simplest and cheapest mobile flexible power source


There are many road works applications for tractors that can reduce unit costs, boost cross-sector utilization and profitability for owners





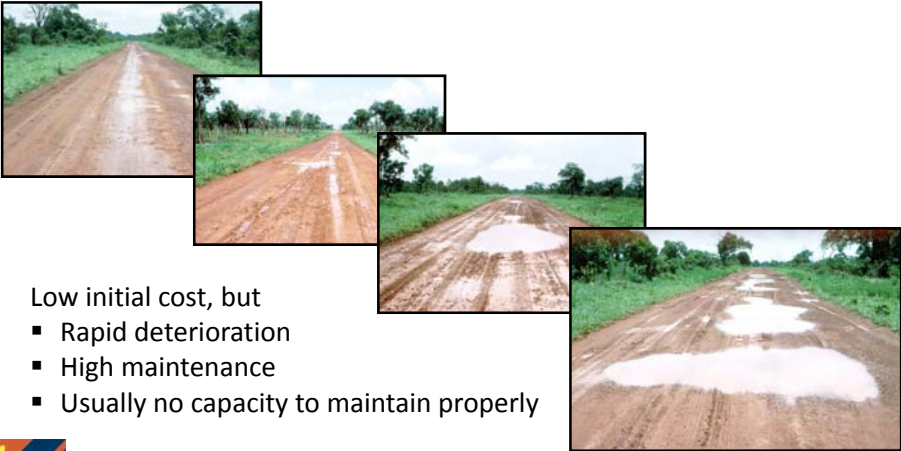
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APPROPRIATE STANDARDS & SPECIFICATIONS

THE GRAVEL ROAD PROBLEM



Low initial cost, but

- Rapid deterioration
- High maintenance
- Usually no capacity to maintain properly



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APPROPRIATE STANDARDS & SPECIFICATIONS

(SEACAP Research) Gravel Roads should not be used where:

- Gravel quality is poor (it should meet local durability, grading and plasticity specifications/recommendations)
- Gravel deposits are limited/environmentally sensitive
- Haul distances are long (suggest cost analysis for haulage >10km)
- Rainfall is very high (>2m/year), or dry season dust problems
- Traffic levels are high (more than 200 motor vehicles/day)
- Longitudinal Gradients > 6% (>4% if rainfall >1 metre/year)
- Sub-grade is weak or soaked (flood risk)
- Compaction & thickness cannot be assured (bad quality control)
- Camber and side Drainage are not provided, or
- Adequate Maintenance is not provided (on say >50% of network)



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There are many **PROVEN** Alternative Surface Options using:


- Stone
- Bitumen
- Concrete
- Brick



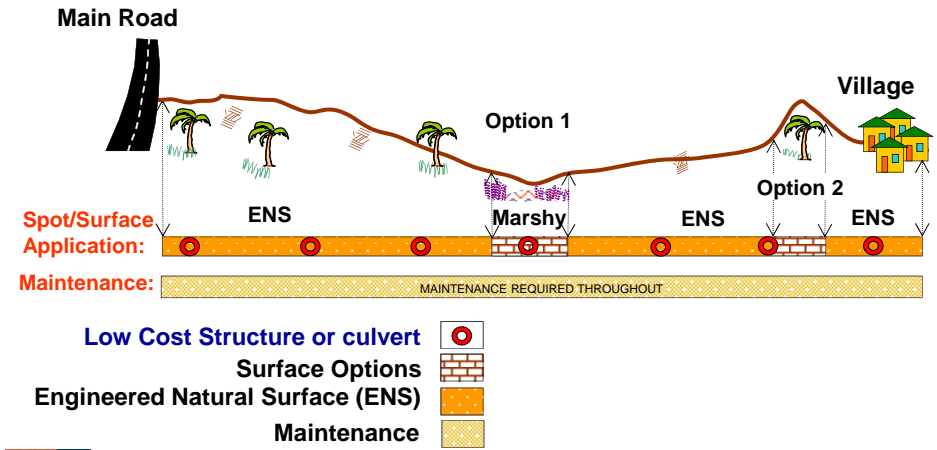
They can have better **Whole Life Cost and Local Resource Use** attributes > International Guide



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Basic Access & Spot Improvement strategy
Example application over a typical rural route



Spot/Surface Application: [Diagram showing application points for ENS, Marshy, and Option 2]

Maintenance: MAINTENANCE REQUIRED THROUGHOUT

Legend:
 Low Cost Structure or culvert: [Red circle icon]
 Surface Options: [Brick pattern icon]
 Engineered Natural Surface (ENS): [Orange dotted pattern icon]
 Maintenance: [Yellow dotted pattern icon]

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APPROPRIATE STANDARDS & SPECIFICATIONS

Appropriate road widths, alignment, surfaces can provide year round rural access at a fraction of the cost of conventional roads, by using Environmentally Optimized Design, local skills, insitu materials and spot improvements on problem sections .



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APPROPRIATE STANDARDS & SPECIFICATIONS

- The road sector is 'hooked' on the high carbon footprint inputs of cement, bitumen, heavy equipment, steel
- We need to research and develop alternative sustainable technologies and build affordable 'climate resilient' roads.







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AVAILABLE TOOLS & KNOWLEDGE

DFID funded programmes such as AFCAP, SEACAP and gTKP, and other programmes have carried out research and developed many guidelines supporting affordable, sustainable road development








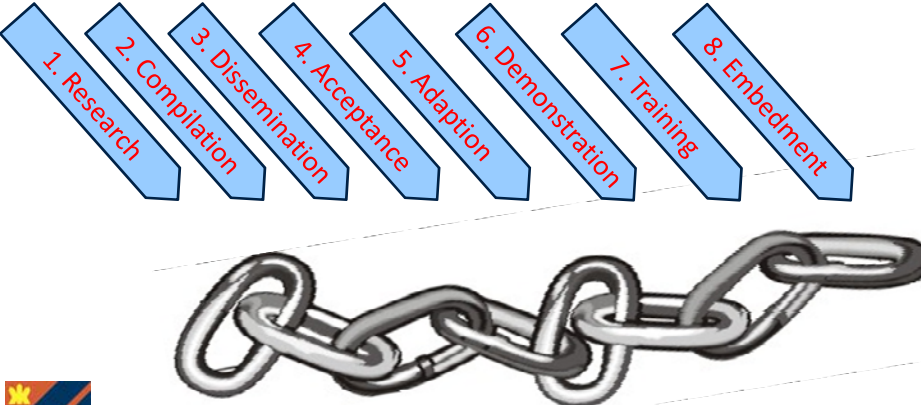


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THE KNOWLEDGE CHAIN

The process of Knowledge creation and application



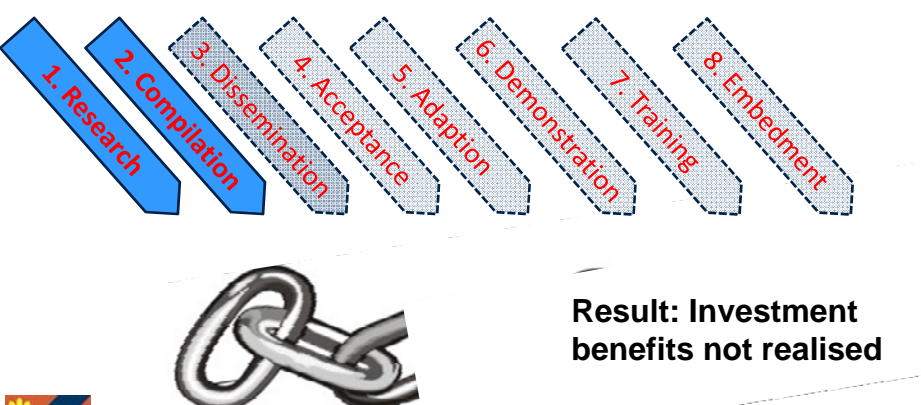
1. Research
2. Compilation
3. Dissemination
4. Acceptance
5. Adaption
6. Demonstration
7. Training
8. Embedment

 <https://www.afcap.org>


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THE KNOWLEDGE CHAIN


Unfortunately many previous sector initiatives have not followed the process through



1. Research
2. Compilation
3. Dissemination
4. Acceptance
5. Adaption
6. Demonstration
7. Training
8. Embedment

 **Result: Investment benefits not realised** <https://www.afcap.org>



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TRANSPORT KNOWLEDGE FORUM REQUIRED

- 1. Durable Stakeholders Forum**
 - Consult & Mobilize practitioner and funding stakeholders
 - Rolling 5 year commitments
 - Update Good Practice Guidelines (soft & hard copy)
 - Training, demonstration, application etc.
 - All stakeholders 'bring something to the table' & benefit
- 2. Website**
 - Credible, 'neutral', active, 'durable' website & database
 - Download and signpost key documents (rated)
 - Topic syntheses, Training Materials etc.
 - Other facilities?

..... **PARTNERS REQUIRED!**

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FURTHER INFORMATION : WWW.AFCAP.ORG



The screenshot shows the AFCAP website homepage. At the top, there are logos for Crown Agents and UKaid. Below the logos, the text 'AFCAP' is prominently displayed. The main content area includes a navigation menu, a search bar, and several news items. The news items are: 'What is the African Community Access Programme?', 'Latest Reports available in our Library:', '2nd Practitioners Conference Videos', 'African Studies Association UK Conference 2012', 'AFCAP in the news', 'Hitting the road to boost growth in sub-Saharan Africa', 'Mozambique Seeks to Improve Unimproved Roads', and 'What do you think about research?'. At the bottom of the screenshot, there is a 'THANK YOU' message and contact information for Rob Petts: rob@intech-consult.demon.co.uk.


THANK YOU

ROB PETTS: rob@intech-consult.demon.co.uk





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SELECTED REFERENCES (available from presenter)

1. AFCAP documentation : WWW.AFCAP.ORG
2. gTKP documentation : WWW.GTKP.COM
3. MART Research Programme (Loughborough, Intech, ITtransport)
4. O'Neill et al, Improved Asset Management-Climbing out of the Road Sector Pothole, 2010
5. Petts, Parliamentary Select Committee (Infrastructure & Development) evidence, 2011
6. Petts, Handbook of Intermediate Equipment for Road Works, 2012
7. PIARC, International Road Maintenance Handbook, 1994 & 2006,
8. PIARC, Save Your Country's Roads, 1999
9. SEACAP documentation : WWW.GTKP.COM
10. TRL, Overseas Road Notes



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