

The 2009 State of Rural Transport & Development Research in South Africa: unravelling current and future research directions

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Structure of the Presentation

- Purpose of the Presentation [1 slide]
- RT&D Research Methodology [1 slide]
- The RT & D Analytical Context [3 slides]
 - Global Context
 - African Context
 - Sub-Saharan African Context
- South Africa Overview [3 slides]
 - Population
 - Road Network Distribution
 - Road Traffic Accident Overview
- South African RT & D Unit of Analysis [15 slides]
- Major RT&D Recommendations [3 slides]
- Conclusion [1 slide]

"It is not the wealth of nations that builds roads but the roads that build the wealth of nations" J. F. Kennedy



Purpose of the Presentation

- *This* presentation chronicles, analyses & takes stock of the state of RT&D research in South Africa for the year 2009.
- Some of the RT&D trends, patterns and gaps are discussed
- The envisaged dialogue and debate is expected to take forward the RT&D research agenda in South Africa to a higher level.
- The presentation is not expected to be a panacea for the state of RT&D research in South Africa but a departure point for furthering discussions.

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Methodology

- Study mainly an extensive desktop literature review of RT&D research output accessible in the public domain libraries such as books, internet libraries, journal articles, conference proceedings *etc.* directions are confirmed.
- The analysis is situated within the broader RT&D international research framework dialogue auspices.
- Benchmarking technique
 - Research trends mapping
 - Gaps identification
 - Confirmation of emerging rural transport and development and issues
- Limited primary data analysis
 - In-depth discussions with selected key informants from government, private sector, development agencies, research and academic institutions in South Africa.

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Global Context

- Rural Access & Service Planning Concept/Approaches
- Integrated Access Planning (IRAP) application and development (2000 – 2009) – Transport & Development Research Work & Demonstration Projects
 - IRAP (Malawi)
 - IRAP (Bangladesh & Sri Lanka)
 - Rural Access Mobility Programme [RAMP] (Nigeria)
 - Integrated Rural mobility & Access [IRMA] (South Africa)

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African Context

- **Transport, [Africa, Development & the Millenniums Development Goals] - 2009**
- Book by Margaret Grieco, Muna Ndalo, Debarah Bryceson, Gina Porter & Talia McCray
 - Transport is generally considered foundational to the development of the African continent
 - Lack of roads especially rural roads is viewed as a major physical constraint perpetuating rural poverty yet transport was excluded from the MDGs
 - Book argues that the original omission and many recent attempts since to include transport in the existing MDGs by inference or elaboration relate to misperceptions regarding the role of roads in rural areas and their potential impact on the poor (think of the strong and catalytic influence transport can have on MDG on health and education as an example)
 - Using recent survey evidence from Africa, it is argued that unless special attention is focused on their access to service and transport modality, the poor are least likely to achieve enhanced mobility through rural road expansion
 - The MDGs initiated in 2000 to alleviate poverty do not encompass targets to lessen the transport constraints on the poor
 - The role of “development transport” advocacy
 - Almost halfway through the fifteen year MDG targeted program transport began to be mooted as an important means of achieving the MDGs in Africa
 - Interactive Mobility & Accessibility Approach
 - Transport is multi-modal and multi-purposeful – each person devises his or her won mobility pattern
 - Transport and MDGs (Goal 1 – the eradication of extreme poverty and hunger, Goals 2 -6 reale to a range of health and education objectives to alleviate poverty etc)

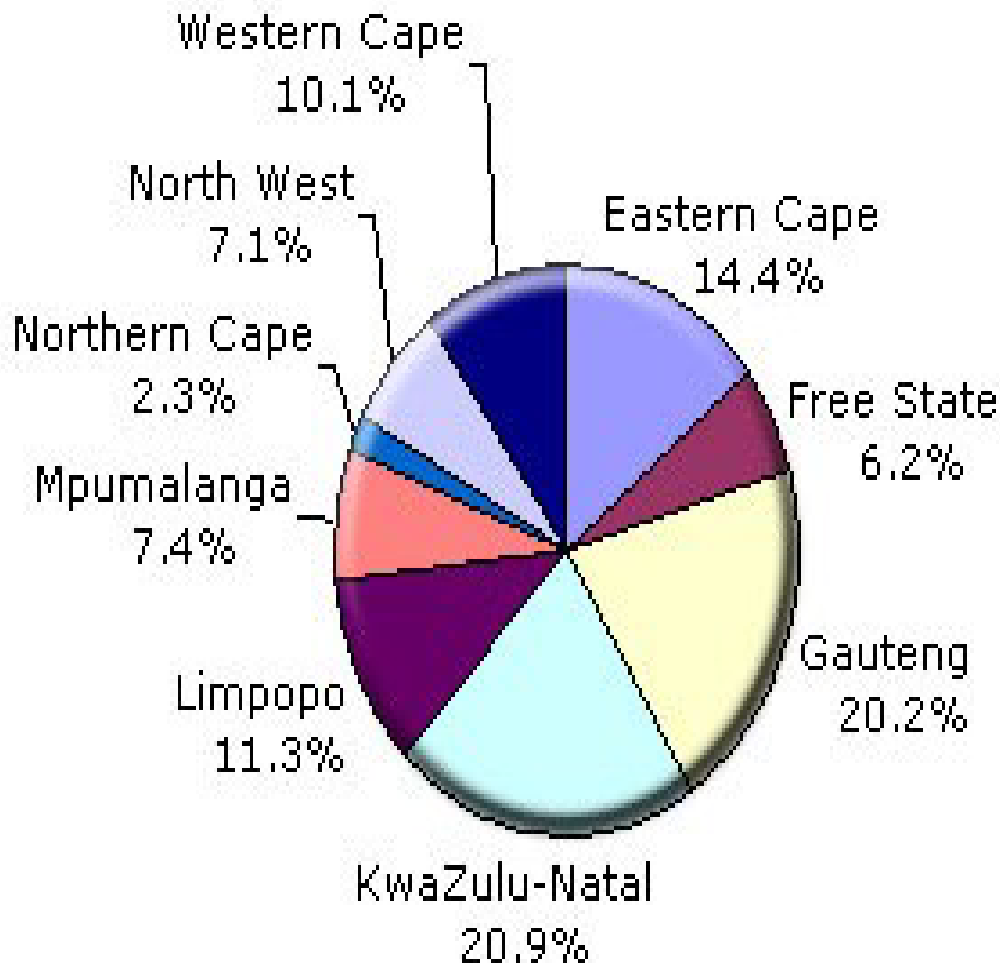
Sub-Saharan African Context

Rural Roads Convention (25-27th November, 2009), Arusha, Tanzania

1. Recognize the need to provide all weather farm to off-farm roads in Africa for improved trade and productivity
2. Recognized the importance of **community participation in rural roads construction and maintenance**, taking into consideration the **financial resources constraints** in rural communities.
3. Application of **labour based methods on rural roads construction**, expanding **opportunities for employment and income generation**.
4. Need for more **research which is better funded**.
5. Dissemination of **knowledge adapted to local context** through knowledge networks
6. Preference to **eco-friendly local construction materials** for rural roads (scope for retiring bitumen and cement – carbon emission concerns).
7. Commercial additives can contribute to reduced gravel loss, but **traditional construction** using thin bituminous seals has **a lower whole life cost**.
8. **Otta seals** are a **viable and affordable surfacing for rural roads** in Tanzania.
9. Promote the **sealing of rural roads**, including the **use of Otta seal**.

South Africa: Population Dynamics [1]

Population by province



- Slightly more than 50% of South Africa's population live in urban areas.
- The most rural province in South Africa is Limpopo.
- Gauteng, with both Johannesburg and Pretoria within its boundaries, is almost entirely urban. .

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South Africa : Road Network Distribution(1)

Estimated Length of Road per road/street Category - Kilometres

Province	Municipal Urban Roads and Streets	National and Numbered Provincial Roads	Provincial Rural Access Roads	Total Roads and Street Length
Gauteng	40,917	3,759	10,333	55,009
KwaZulu-Natal	33,237	9,938	54,734	97,909
Western Cape	31,830	10,293	50,057	92,180
Eastern Cape	10,124	10,505	57,855	78,485
Free State	11,484	9,836	90,033	111,353
Mpumalanga	11,471	8,444	36,110	56,025
North West	10,920	9,137	52,556	72,613
Limpopo	10,401	7,936	48,066	66,403
Northern Cape	9,145	12,173	89,877	111,195
RSA	169,530	82,019	489,623	741,172

Source: Road Traffic Report, March 2008

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South Africa : Road Traffic Accidents Overview [1]

2008 Vehicle Type	Number of Fatalities per Type of Vehicle									
	GA	KZ	WC	EC	FS	MP	NW	LI	NC	RSA
Motorcars	1 482	1 029	748	535	435	814	534	651	153	6 381
Minibuses	231	178	117	279	86	261	42	61	20	1 275
Minibus Taxis	9	266	-	7	20	16	71	74	-	462
Buses	23	56	39	71	9	176	12	16	4	406
Motorcycles	110	31	50	18	28	24	227	-	-	289
LDV's - Bakkies	339	543	280	391	172	436	325	347	100	2 934
Trucks	42	106	27	4	75	4	31	33	17	339
Trucks - articulated	80	74	68	100	6	156	12	23	4	522
Other and unknown	231	360	124	94	41	80	65	129	36	1 161
Total Motorised	2 546	2 643	1 453	1 499	872	1 965	1 113	1 342	335	13 769
Bicycle	77	22	47	20	14	26	51	24	7	288
Animal drawn	-	-	-	-	-	-	-	-	-	-
Total	2 623	2 665	1 500	1 519	886	1 992	1 164	1 366	341	14 057

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South African Context: A selection of Research Output 2009 (1)

Publication Type	Title/Thematic Focus	Methodological/Analytical Approaches	Theoretical Contributions	Practical Application of Research	Technological Innovations	Remarks & Emerging Research Prospects
RURAL TRANSPORT RESEARCH TRENDS IN SOUTH AFRICA FOR YEAR 2009						
Proceedings of the 28 th Southern African Transport Conference (SATC) on Sustainable Transport, 2009, ISBN 978-1-920017-35-2; Pretoria, South	<i>“Transport and Development in the Eastern Cape: A Children’s Perspective”</i> by Mac Mashiri, Siphon Dube & Goodhope Maponya	Application of an innovative two strand qualitative methodology. Strand 1 included children administered questionnaires and documented responses about daily mobility and travel experiences documented by means of a diary. Strand 2 included adult researchers administering qualitative survey questionnaires on children from the ages of nine to eighteen, their respective parents, focus group discussions with school and non-schooling children, observations, accompanied walks as well as photographs.	Better understanding of the spatial mobility and travel experiences of children and the youth as transport stakeholders informs rural sustainable transport and development inclusive policies and programmes that innovatively respond to all segments of the society.	Urban - Ngangelizwe; Peri-urban – Mthumbane; Rural – Mtambalala and Remorte Rural – Bolani <i>Children especially from poor households and communities encounter a variety of common mobility and access constraints which are however markedly different from the problems adults face.</i>	-	Rural transport and urban development linkages discourses <i>Children, youths, women, gender, disabled and aged in rural transport and development thematic focus areas and targeted interventions</i> Track stick application in child researchers mobility and movement mapping

South African Context: A selection of Research Output 2009 (2)

Publication Type	Title/Thematic Focus	Methodological/Analytical Approaches	Theoretical Contributions	Practical Application of Research	Technological Innovations	Remarks & Emerging Research Prospects
RURAL TRANSPORT RESEARCH TRENDS IN SOUTH AFRICA FOR YEAR 2009						
International Roads Federation, global knowledge transport partnership and Tanzanian Roads Agency, Africa Rural Road Convention on “Rural Roads for economic development, social cohesion and poverty reduction” 25-27 November 2009, Arusha, Tanzania	<i>“Road network Evaluation Tools (RONET)Version 2.0 developed by World Bank and article contributed by Rodrigo Archondo-Callao,</i>	Rural Transport Service Orientated Studio Based Design Approach Software Programming	Helps decision makers; monitor network condition; plan allocation of resources; assessment of consequences of macro policies; design road asset management systems. This has been developed for Africa specifically although it can be applied anywhere in the World	Network types, surface types, road network length, traffic categories, cracking progression etc	Road Network Evaluation Software Package RONET v2 Documentation	Rural transport development and the millennium development goals <i>Rural Roads Information Management Systems</i> Rural Roads Budgeting, Financing & Implementation Models <i>Rural roads local resource based development</i> Rural roads capacity building and development <i>Provision of farm to market all weather connectivity</i> Basic Rural accessibility Index
	<i>“Overview of Gravel Road Performance Studies in the Western Cape” by Robbie Uys</i>	Borrow Pit investigation & Material Design Performance Modelling Measurement Using gravel loss and road roughness (TRH 20 & HDM20)	Treated materials perform better than untreated sections	Low volume rural gravel roads, network length and utilisation; current asset value and condition, performance assessment; road user charges, road work standards	Develop low-carbon alternatives to bitumen and cement	Rural gravel low volume construction technologies <i>Rural roads low volume sustainable design, implementation and development standards</i> Rural roads low cost technology interventions <i>Rural roads and transport research funding and financing streams</i>

South African Context: A selection of Research Output 2009 (3)

Publication Type	Title/Thematic Focus	Methodological/Analytical Approaches	Theoretical Contributions	Practical Application of Research	Technological Innovations	Remarks & Emerging Research Prospects
RURAL TRANSPORT RESEARCH TRENDS IN SOUTH AFRICA FOR YEAR 2009						
South African Bureau of Standards (SABS) Design Institute , 2009	<i>“Non-motorised transport prototypes handing over to Department of Transport”</i> by South African Bureau of Standards (SABS) Design Institute.	International Design Workshop on sustainable Rural Transport in Rustenburg instituted in 2005. Design experts spend 2 week session with designers from South Africa and 16 other countries.	The inter-design on sustainable rural transport generated ways in which appropriate technology and good design could be harnessed to address mobility challenges of developing communities.	Rural communities originally involved in the design workshop tested these prototypes for functionality and social acceptability.	Prototypes include the bicycle for children (Children’s Z Frame Bicycle), The North-West Bicycle, The combination bicycle or bicycle modules, the load bearing tricycle, the refurbished donkey cart, the single axle donkey cart, The double axle donkey cart, the wheeled platform trolley and donkey harnesses. DIY manuals for producing harnesses and donkey carts were also developed	Implementation of non-motorised prototypes as trial and demonstration projects <i>Modelling & forecasting rural NMT growth in ownership, use and movement in Rural Areas</i> Rural NMT freight developmental logistics model <i>Development of Rural Transport NMT industrial developmental strategy</i> Sustainable NMT travel and demand supply management in small rural towns

South African Context: A selection of Research Output 2009 (4)

Publication Type	Title/Thematic Focus	Methodological/Analytical Approaches	Theoretical Contributions	Practical Application of Research	Technological Innovations	Remarks & Emerging Research Prospects
RURAL TRANSPORT RESEARCH TRENDS IN SOUTH AFRICA FOR YEAR 2009						
International Roads Federation, global knowledge transport partnership and Tanzanian Roads Agency, Africa Rural Road Convention on “Rural Roads for economic development, social cohesion and poverty reduction” 25-27 November 2009, Arusha, Tanzania	<i>“Overview of Gravel Road Performance Studies in the Western Cape” by Robbie Uys</i>	Borrow Pit investigation & Material Design Performance Modelling Measurement Using gravel loss and road roughness ('draft' Technical Recommendations for Highways Manual 20 [TRH 20] & World Bank Highway Development and Management [HDM20])	Treated materials perform better than untreated sections	Low volume rural gravel roads, network length and utilisation; current asset value and condition, performance assessment; road user charges, road work standards	Develop low-carbon alternatives to bitumen and cement	Rural gravel low volume construction technologies <i>Rural roads low volume sustainable design, implementation and development standards</i> Rural roads low cost technology interventions <i>Rural roads and transport research funding and financing streams</i>

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South African Context: A selection of Research Output 2009 (5)

Publication Type	Title/Thematic Focus	Methodological/Analytical Approaches	Theoretical Contributions	Practical Application of Research	Technological Innovations	Remarks & Emerging Research Prospects
RURAL TRANSPORT RESEARCH TRENDS IN SOUTH AFRICA FOR YEAR 2009						
Proceedings of the 28th Southern African Transport Conference (SATC) on Sustainable Transport, 2009, ISBN 978-1-920017-35-2, Pretoria, South	<i>“Mainstreaming Rural Travel & Transport in University Curricula: A Case Example”</i> by Tatenda Mbara	<i>Case Study Approach</i>	Mainstreaming RTT in University curricula is important to dispel misconceptions about superiority of conventional transport and has long term benefits in influencing policy	University of Zimbabwe, Department of Urban & Regional Planning	Suggestion for a regional or continental RTT centre of excellence	RTT short courses and diploma programmes <i>Strengthening existing transport and related programmes to have a strong in-built RTT component</i> Continuous curricula review to incorporate new and emerging trends in rural transport and development such as climate change, millennium development goals, energy crisis, food crisis, global warming etc.

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South African Context: A selection of Research Output 2009 (6)

Publication Type	Title/Thematic Focus	Methodological/Analytical Approaches	Theoretical Contributions	Practical Application of Research	Technological Innovations	Remarks & Emerging Research Prospects
RURAL TRANSPORT RESEARCH TRENDS IN SOUTH AFRICA FOR YEAR 2009						
Proceedings of the Fifteenth Americas Conference on Information Systems, San Francisco, California August 6-9 2009; ISBN: 978-0-615-30358-1	<i>“Supporting Home Based Health Care in South African Rural Communities Using USSD Technology”</i> by Bouters Martin, Maritz Johan, Maponya Goodhope & Mashiri Mac	Consultative extensive participatory research approach, user orientated design methodology including focused group discussions, user needs surveys, ICT software prototype design, demonstration project testing and results	ICT enabled information system whereby caregivers can transmit patients readings of vital signs to clinic. Caregivers submit the vital signs via a USSD technology on their own mobile phones. Sisters examine the personal health records on the web via a desktop computer.	South African rural areas of Moremela, Lerero, Matibidi A & B.	Telemonitoring system technology tool i.e. ICT enabled information system	Scope for exploring the up-scaling and technology transfer rolling out programme should be keenly investigated. <i>Digital doorway technology</i> Human Technology voice to text translation Devices

South African Context: A selection of Research Output 2009 (7)

Publication Type	Title/Thematic Focus	Methodological/Analytical Approaches	Theoretical Contributions	Practical Application of Research	Technological Innovations	Remarks & Emerging Research Prospects
RURAL TRANSPORT RESEARCH TRENDS IN SOUTH AFRICA FOR YEAR 2009						
International Conference on Rural Information and Communication Technology 2009, Bandung, Indonesia, 17-128 June 2009; ISBN: 978-979-15509-4-9	<i>“Development of a logistics brokering system for South Africa’s displaced rural residents “</i> by Johan Maritz	Use of a living labs approach to overcome sustainability challenges normally associated with systems in rural areas. A service system framework was applied to develop the system	The paper expands on both the living lab approach; the service system framework used to develop the logistics brokering framework and list factors that affected the outcome of the system development.	Use of ICT and relevant service system can overcome challenges in rural areas such as high transport costs, irregular or unpredictable transport services, transport of low passenger and freight volumes, low logistics service demand and supply, limited local skills availability and isolation from or limitations to accessing the information society or networks.	The system uses a session orientated service known as USSD (Unstructured Supplementary Services Data) providing a mechanism to capture demand for transport which could then be organised to and be matched with the supply of transport (local transport providers) Software Technology Demonstrator	Rural Agriculture Goods Harvesting & Preservation Transport Technologies [Trucks and Structures] <i>Rural & inland Freight transport corridor development and interventions</i>

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South African Context: A selection of Research Output 2009 (10)

RURAL DEVELOPMENT RESEARCH TRENDS IN SOUTH AFRICA FOR YEAR 2009						
Publication Type	Title/Thematic Focus	Methodological/Analytical Approaches	Theoretical Contributions	Practical Application of Research	Technological Innovations	Remarks & Emerging Prospects
Department of Rural Development & Land Reform South Africa 2009, Pretoria, South Africa	<i>“Comprehensive Rural Development Programme”</i> by The Department of Rural Development & Land Reform	Pilot site identification for targeted rural development interventions to transform very poor and marginalised rural communities – Miyexe National Pilot Site	Targeted rural development interventions should use the village level as multi-dimensional intervention unit, i.e. unit of analysis, unit of intervention, unit of investment, unit of monitoring & evaluation	Replication of Provincial Pilot Sites Throughout South Africa e.g. Mhlontlo in Eastern Cape etc	Infrastructure & Services Delivery Implementation & Upgrading Investment & Budgeting Framework	Provides a framework and learning laboratory for rural development in South Africa <i>Area Based Planning & Methodologies</i> Rural Poverty Profiles <i>Anchoring Sustainable and inclusive rural transport and development intervention agenda</i>

South African Context: A selection of Research Output 2009 (11)

RURAL DEVELOPMENT RESEARCH TRENDS IN SOUTH AFRICA FOR YEAR 2009						
Publication Type	Title/Thematic Focus	Methodological/Analytical Approaches	Theoretical Contributions	Practical Application of Research	Technological Innovations	Remarks & Emerging Prospects
Walter Sisulu University, Independent Development Trust, CSIR, 2009; 5th Annual Rural Development Conference, Mthatha, Province of the Eastern Cape South Africa	<i>"The New Rural Development Paradigm in South Africa: Strategies and Models for Making It Happen" by the Walter Sisulu University, Centre for Rural Development</i>	International Paper Presentations and Parallel Sessions Discussion by researchers from all over the World	The <i>"nearness"</i> of rural development seriously questioned and challenged. Current rural development momentum should be optimally utilised Knowledge sharing and dissemination of experiences critical in fertilising future rural development interventions e.g. Canada (The community learning campus story), India (India Punjab agricultural green revolution), Uganda (co-operative movement) etc	Rural communities in developing countries	Sandbag Low Income Housing Construction Technology employed in Cape Town could be rolled out for RDP housing Rural Community Development Portal Launched	Stakeholder development dialogue deepening <i>Implementation of low cost construction and appropriate technologies to support rural transport and development efforts in housing, roads development, health sector, farming, livestock breeding etc</i> Rural Water Harvesting & Cycling Technologies Organic Farming <i>Land care management techniques & programmes</i> Local socio-economic development planning

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South African Context: A selection of Research Output 2009 (12)

RURAL DEVELOPMENT RESEARCH TRENDS IN SOUTH AFRICA FOR YEAR 2009						
Publication Type	Title/Thematic Focus	Methodological/Analytical Approaches	Theoretical Contributions	Practical Application of Research	Technological Innovations	Remarks & Emerging Prospects
Umhlaba Rural Services, COFISA, Science & Technology 2009.	<i>“Introduction of the LEADER Approach to Rural Development in South Arica”</i> by Umhlaba Rural Services.	Benchmarking & Comparative Assessment of South Africa with other Countries.	The <i>LEADER</i> approach represents a break from traditional and mainstream approaches to rural development that generally speaking have been limited to an agriculture focus, and which were often implemented in a centralised and top-down manner.	Rolling out the <i>Cata</i> experience & Restitution Betterment in the <i>Keiskammahoek</i> region approaches	-	<i>LEADER</i> is area based, bottom up, emphasises local partnerships, promotes innovation, multi-sectoral integration, inter-territorial co-operation, networking and decentralised management and financing in a manner that the current rural development practice in South Africa has never practised before.

South African Context: A selection of Research Output 2009 (13)

RURAL DEVELOPMENT RESEARCH TRENDS IN SOUTH AFRICA FOR YEAR 2009						
Publication Type	Title/Thematic Focus	Methodological/Analytical Approaches	Theoretical Contributions	Practical Application of Research	Technological Innovations	Remarks & Emerging Prospects
Proceedings of the Third International IDIA Development Informatics, 2009; ISBN: 978-0-620-45037-9; pp132-145	<i>"A Theoretical framework for Government Information Service Delivery to Deep Rural Communities in South Africa"</i> by Promise S Mvelase, Nomusa Dlodlo, Sizakele U Mathaba, Chris Krause, Salah K. Kabanda	Questionnaire administered in three areas [KwaKhangela, KwaMeme and KwaSomkhele]. The questionnaire covered issues related to health, energy, water, education and transport etc. Sampling method used for selecting participants from three study sites.	Study proposes an e-government theoretical framework that utilises deep rural small, medium and micro-enterprises (SMMEs) to serve as access points to the government information on services available and needed by rural communities	ICT in deep rural areas, ICT rural Hubs [KwaKhangela, KwaMeme and KwaSomkhele] Proposed e-government information services delivery framework should be informed by; ease of use, best available appropriate technology, ease of configuration, security of data etc.	e-government service delivery framework (software technology demonstrator)	People in deep rural areas do not have an easy access to information on government services that are essential to improve quality of life. <i>ICT for disadvantaged communities e.g. disabled, youths, isolated etc.</i>

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South African Context: A selection of Research Output 2009 (14)

RURAL DEVELOPMENT RESEARCH TRENDS IN SOUTH AFRICA FOR YEAR 2009						
Publication Type	Title/Thematic Focus	Methodological/Analytical Approaches	Theoretical Contributions	Practical Application of Research	Technological Innovations	Remarks & Emerging Prospects
Department of Cooperative Governance & Traditional Affairs 2009, COTGA Working Documents	<i>“ State of Local Government in South Africa”</i> by COTGA	Policy Review & Document Analysis	A turnaround strategy for local government is needed to drive intergovernmental and a social compact agenda for change.	Local Government Service Delivery Improvement Plans and Programmes	-	In 2009 and beyond there is a need to ensure that municipalities are responsive, efficient and provide value for money in discharging services to community/residents. <i>Strong Civil Government Lobby Groups</i> Better Governance & Service Excellence Standards <i>Rural Monitor/Barometre</i> Rural Transport & Development Observatory Network of Practitioners [Transport development advocacy]

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South African Context: A selection of Research Output 2009 (15)

RURAL DEVELOPMENT RESEARCH TRENDS IN SOUTH AFRICA FOR YEAR 2009						
Publication Type	Title/Thematic Focus	Methodological/Analytical Approaches	Theoretical Contributions	Practical Application of Research	Technological Innovations	Remarks & Emerging Prospects
Agadir international Conference, November 12-14 , 2009, Anezi hotel, Agadir, Morocco	The Integration of Sustainable Agriculture, Rural Development, and Ecosystems in the Context of Food Insecurity, Climate Change and the Energy Crisis	<i>“A policy framework for Sustainable utilisation of Farmland for Waterberg District Municipality in South Africa”</i> by Charles Nhemachena, James Chakwizira, Mac Mashiri & Siphso Dube	Participatory situational analysis, extensive farmer and stakeholder user group surveys, validation workshops and local municipality road shows	The project crafted a policy framework for the sustainable utilisation of farmland in Waterberg district Municipality taking into account the contention in terms of land allocation among traditional agricultural land uses versus contemporary uses such as a stroll of golf estates, game ranching and foreign investors	Revision and updating of the land subdivision regulations no. 22 of 1970 to take into account contemporary realities i.e. the generation and development of rural farmland subdivision protocol/guideline	Rural agriculture development and climate change <i>Rural agriculture development and the energy crisis</i> Rural agriculture development and the food crisis <i>Rural agriculture development and infrastructure needs</i> Balanced rural development and growth <i>North-South Forum on Sustainability</i>

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Major Recommendations (1)

- RT&D research capacity building and training is a critical pillar that under-girds the implementation of any successful rural transport and development programme, activity or project.
 - Perhaps it is not far fetched to think of establishing a **rural transport and development academy or alternatively finding a practical way of fully integrating the rural transport and development course curriculum** in University and Tertiary education.
- Rural research rapid participatory research should factor much strongly ways of blending and **involving much more user groups, participatory technology intervention design, children, youths and the disabled in research methodologies** such as the typical example of **child researchers** in the Eastern Cape Child, Mobility and Development Research Project, development of a logistics brokering system for South Africa's displaced rural residents *etc.*

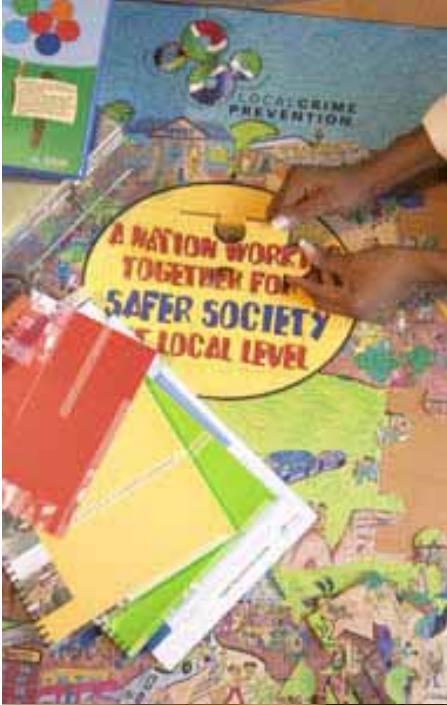
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Major Recommendations (2)

- Rural home based health and development initiatives are not only solved by point of access interventions solely. The case of the **informal home health based care information access and distribution database development technology demonstrator** in Leroro is a case in point.
- RT&D interventions should be **meaningful in the eyes of the intended beneficiaries** i.e. the rural dwellers. This brings about the need for rural development impact measuring tools perhaps needing to focus beyond evaluating development projects against the original project objectives and aims template only, but adding a **strong rural user group and perception evaluation component**.

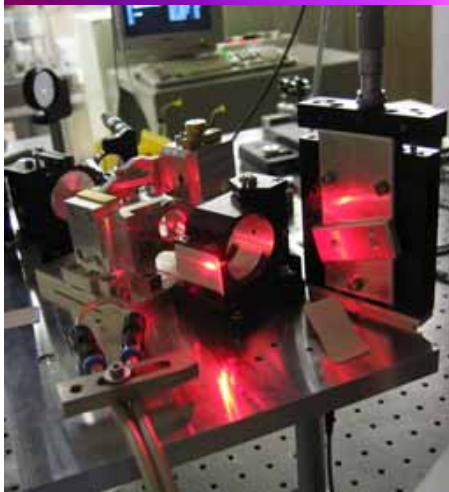
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Major Recommendations (3)

- Transport and rural development **needs to be inclusive** such that factors such as appropriate institutions and governance structures, gender, HIV/AIDS, climate change, millennium development goals, food and energy crisis, integrated rural infrastructure development and implementation plans are better represented and translated into rural transport and development actions and measures meant to better society.
- Themes such as transport and rural development safety and security, **appropriate and sustainable construction standards for low volume rural roads** including scope for utilising additives such as otta seals, generation and production of new soil maps taking into account climate change needs priority as well as **anchoring sustainable rural transport and development interventions** in the context of the energy and food crisis.

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Conclusion

- Refreshing to note that while RT&D is faced with critical challenges, at the same time a lot of authentic research and technology applications are being generated to respond to these issues.
- A sobering thought is realising the vast world of promise and prospect that application and replication of shared experiences and knowledge can generate for RT&D interventions.
- It is also important that government commitment including funding of RT&D research work be guaranteed.
- The contribution and scope for the integration of rural RT&D interventions including synergies gained from partnerships and collaborations cannot be over-emphasised.

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Thank you

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