

PROVISION OF RURAL ACCESS

Key Publications (recommended by participating experts)

- Ethiopian Roads Authority. (2016) Manual for Low Volume Roads. Addis Ababa: Ethiopian Roads Authority (ERA). Available online at: <https://www.gov.uk/dfid-research-outputs/manual-for-low-volume-roads-part-a-introduction-to-low-volume-road-design>
- Transport Research Board. (2016) Landslides: Investigation and Mitigation. TRB Special Report 247. Available online at: <http://www.trb.org/Main/Blurbs/153305.aspx>
- Struder R, Zeh H, and De Cesare G. (2014) Soil Bioengineering. Construction Type Manual. European Federation for Soil Bioengineering, vdf Hochschulverlag, Zürich.
- Hearn GJ (ed.). (2011) Slope Engineering for Mountain Roads. Geological Society Engineering Geology Special Publication - 4, London.
- Larcher et al. (2010) Small Structures for Rural Roads: A Practical Planning, Design, Construction and Maintenance Guide. SEACAP and gTKP.
- Johannessen B. (2008) Building Rural Roads. ILO, Geneva.
- Transport Research Laboratory. (2004) Overseas Road Notes 1-9, and 31, 2004 edn. Crowthorne, UK.
- Head, KH. (2003) Manual of Soil Laboratory Testing. 3 Vols. Whittles Publishing, Dunbeath, Scotland.
- Lebo J, and Schelling D. (2001) Design and Appraisal of Rural Infrastructure. World Bank Technical Paper No. 496, World Bank, Washington DC.
- Howell J. (1999) Roadside Bioengineering. Department of Roads, Kathmandu.
- Transport Research Laboratory. (1997) Principles of Low Cost Road Engineering in Mountainous Regions. Overseas Road Note 16. Crowthorne, UK.
- Smith MR, and Collis L (ed.). (1993) Aggregates: Sand, Gravel and Rock Aggregates for Construction Purposes. Geological Society Special Publication No 9.
- Blyth FGH, and De Freitas MH. (1984) A Geology for Engineers. CRC Press.

Key Learnings

- From the design phase, there is a need to consider: - What the road will be used for and what type of vehicles will be using it
 - What funding is available for construction
 - What funding will be available for maintenance later (continuity of service)
- There is still a need to develop and institutionalise adequate standards and specifications
- Conventional road construction materials do not behave as we would expect them to in temperate climates and a lot of progress has been made regarding the use of local materials
- Local resource-based approaches for construction and maintenance are successful
- Local champions are the key to making any approach sustainable
- Long-term support is needed to ensure continuity.

Knowledge Gaps

- Socio-economic impact of rural roads / rural access continuum: evaluations are still focusing on the technical aspects of road construction. There is a need for a better understanding of the socio-economic impact of rural roads and to look at these projects in terms of a rural access continuum
- Climate resilience: still little research on how to build more resilient rural roads
- Rural roads and motorcycles: with the increasing use of motorcycles in rural areas, there is a need to better understand which roads are more appropriate for motorcycle use
- Materials and aggregates: there is still research to be done on better use of local materials, use of waste materials and how the choice of materials can reduce the initial construction and lifetime costs of rural roads.

Current Challenges

- Introduction and institutionalisation of local standards and specifications
- Building and sustaining local capacity (government authorities, private sector, quality assurance, research capacity)
- Financing for rural road construction and maintenance
- Introduction of local standards and specifications
- Climate change and vulnerability of rural roads
- External factors (new actors and investors)
- Policies and institutional frameworks for rural road development and maintenance
- Failure to uptake a lot of good research that has been done
- Changes in types of transport using rural roads (e.g. large increase in motorcycle usage)
- Pressure to bituminise all roads and lack of consideration of the advantages of gravel roads and local seals.

All of the suggested key publications, knowledge gaps, key learnings and current challenges are those expressed by the experts interviewed as part of this project. They were either communicated during the interviewing process or as part of the online survey and do not necessarily reflect the views of others in this sector.

PRESERVATION OF RURAL ACCESS

Key Publications (recommended by participating experts)

- Burrow M, Ghataora G, Bopoto C, Lema C. (2018) Approaches to Appraise the Impact of Rural Road Maintenance in Sub Saharan Africa. Conference Paper SARF/IRF/PIARC. Durban, South Africa.
- Petts, R. (2012) Handbook of Intermediate Equipment for Road Works in Emerging Economies. Intech Associates, Great Bookham, Surrey, UK.
- Ahmed F. (2010) Roads 2000 Nyanza Programme in Kenya: Socio-economic Monitoring Studies – Final Report. Kenya Rural Roads Authority/SIDA.
- IT Transport. (2003) Community Participation in Road Maintenance: Guidelines for Planners and Engineers. DFID. Available online at: <https://www.ittransport.co.uk/documents/Guidelines%20for%20CPR.pdf>
- SDC. (2003) Views of the Poor: The Perspectives of Rural and Urban Poor in Tanzania as Recounted Through Their Stories and Pictures. Swiss Agency for Development & Cooperation, Bern.
- Makajuma, G. (2001) Roads 2000 - Districts Rural Roads Rehabilitation. African Development Bank.
- Bentall P, Beusch A, de Veen J. (1999) Employment Intensive Infrastructure Programmes: Capacity Building for Contracting in the Construction Sector. ILO, Geneva.
- Johannessen B. (1991) Labour-based Road Construction and Maintenance Technology – Course Notes. ILO, Geneva.

Key Learnings

- Asset management in terms of rural road infrastructure
- Maintenance needs to be considered at the planning stage
- Examples of successful approaches:
 - Performance-based contracting
 - Local labour-based methods for maintenance
 - Private sector needs to be included and provided with continuous training
- Government ownership is decisive
- Appropriate policies in place
- Network Planning
- Prioritisation is key and multiple factors need to be considered:
- What the road is being used for (access to markets, healthcare)
- Road user profile (pedestrians, different types of vehicles)
- Where people/goods are moving
- Funding for both construction and maintenance needs to be allocated
- Consideration of service provision requirements where settlements develop along new road networks.

Knowledge Gaps

- Road Asset Preservation Index: To what extent are we preserving our investments in road infrastructure? Is our asset value stable? Is it depreciating or appreciating?
- How are roads affecting transport services, how can this be measured?
- How modes of transport affect the rural road infrastructure especially with increase in motorised transportation
- Rural roads will be disproportionately affected by extreme absence of greater certainty about climate change, materials and management practices applied need to promote greater resilience against anticipated change
- The impact of poor management of the road asset on access specifically for vulnerable groups
- The impact of poor preservation of access on the food security of a given rural area.

Current Challenges

- Asset management is still the area where least progress has been made in the sector
- Comprehensive policies are often lacking and should be in place prior to planning and design stages
- The allocation of funds for maintenance in the long term is still often not a consideration
- Capacity building at a local level for road maintenance needs to be strengthened
- Network planning needs to be thought of holistically and the impact on the spatial distribution of populations needs to be considered
- Network design needs to take into account the road safety threat to road users and mitigating measures implemented
- In the absence of accurate climate models, rural road resilience must be improved through the use of appropriate materials and aggregates to minimise ongoing management needs

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ACCESS TO RURAL TRANSPORT SERVICES

Key Publications (recommended by participating experts)

- Transaid. (2019) Technical Brief: Training of Rural Motorcycle and Three-Wheeler Taxi Riders in Sub-Saharan Africa. London. Available online at: http://www.transaid.org/wpcontent/uploads/2019/02/RAF2114A_Technical-Brief_Training_06022019_FINAL.pdf
- WHO. (2018) Global Status Report on Road Safety. World Health Organization, Geneva. Available online at: https://www.who.int/violence_injury_prevention/road_safety_status/2018/en/
- National Rural Roads Development Agency India. (2016) Rural Road Safety Manual – Promoting Safer Connectivity in Rural India. Ministry of Rural Development, India.
- Fernando P, and Porter G (eds.). (2002) Balancing the Load: Women, Gender and Transport. Zed Books.
- Malmberg Calvo C. (1994) Case Study on the Role of Women in Rural Transport: Access of Women to Domestic Facilities. SSATP Working Paper No 11. World Bank.
- Dawson J & Barwell I. (1993) Roads Are Not Enough: New Perspectives on Rural Transport Planning in Developing Countries. Intermediate Technology Publications. London.
- Ross A. (1991) Towards Safer Roads in Developing Countries; A Guide for Planners and Engineers. Transport Research Laboratory, Crowthorne, UK.
- Adler, H. (1987) Economic Appraisal of Transport Projects: A Manual with Case Studies. World Bank.

Key Learnings

- Transport Services (passenger and freight)
- Challenges include:
 - Transport services primarily in the hands of the private sector and therefore profit driven
 - Lack of investment particularly in rural areas where low density populations impact profitability
 - Subsidies and other incentives to providers are often not in place
 - It's necessary to coordinate with a variety of stakeholders
 - There is a need for a more participatory approach to ensure the uptake of transport services
 - Two major changes in recent years – motorcycle use, and Information and Communication Technologies
- Rural Road Safety
 - The economic and social impact of road traffic crashes is potentially significant in rural areas
 - There is a need for a more collaborative approach between engineers and transport services specialists to address safety concerns
 - There is low profitability in running transport services in rural areas, therefore many of the vehicles used are old and in poor condition
 - Fewer vehicle maintenance in the rural areas and less economic incentive for maintenance
 - There is a lack of available data to understand where crashes happen
 - There is under-investment in road safety measures as other issues are prioritised
- The approach to addressing road safety is often disjointed as road safety is a cross-cutting issue.

Knowledge Gaps

- Lack of reliable country data on transport services both formal and informal provision
- Understanding the impact that subsidies and other government led incentives could have and how can funding support transport services?
- Motorcycles and motorcycle taxis as an increasingly useful informal means of transport in rural areas
- First mile transport for agriculture
- Gender and vulnerable groups: who's benefiting or not from transport services?
- Vulnerable groups and access to transport
- Market conditions for rural transport services
- Measuring the impact of rural transport services for rural development
- Rural transport services indicators (for sustainable development)
- Pedestrian load carrying (e.g. impact on the health primarily of women and children)
- Impact of Information and Communication Technologies on rural transport services
- How greater gender equity in transport provision would promote more inclusive access to transport.

Current Challenges

- Transport costs for both passengers and freight are still disproportionately high in sub-Saharan Africa
- The lack of political buy in and under investment is a challenge to efficient transport services in rural areas
- There is competition for resources between urban and rural transport with the majority allocated to urban populations
- Rural decisions made by urban-based specialists are often not appropriate with low uptake
- Lack of quality data related to road safety in rural areas.

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