

THE CONTRIBUTION OF RURAL TRANSPORT TO THE SUSTAINABLE DEVELOPMENT GOALS



photo by: Ravisankar Pandian

Rural communities are expected to represent 34% of the global population by 2050, and it is vital that they are not “left behind” in the 2030 Agenda for Sustainable Development. Rural access is a key enabler to achieving a number of the Sustainable Development Goals (SDGs) of the 2030 Agenda. Although there is no dedicated SDG target on rural access, successful scaled-up implementation of rural transport will contribute to realizing SDG 1 to alleviate poverty; SDG 2 to achieve zero hunger and ensure food security; SDG 3 to ensure good health and well-being; SDG 4 to provide access to education; SDG 5 to empower women in rural areas; SDG 6 to facilitate access to clean water and sanitation; SDG 8 to promote inclusive growth and economic opportunities; SDG 9 and SDG 11 to contribute to sustainable infrastructure and communities for all; and SDG 13 to increase climate resilience and adaptation in rural areas. In addition to indirect linkages to SDGs and associated targets, rural access is directly addressed in SDG indicator 9.1.1 (Proportion of the rural population who live within 2 km of an all-season road) developed by the Interagency Expert Group on Sustainable Development Goals.

For more information on rural transport and SDGs, please visit: www.slocat.net/ruraltransport

Key Messages on Rural Transport and Sustainable Development Goals

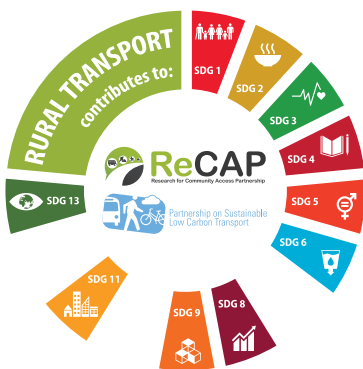


photo by: Maastricht School of Management

Improved rural transport drives sustainable rural development and national growth



photo by: sunlifegroup.in

Better rural transport is key for food security and zero hunger



photo by: Simon Elwell

Poor rural transport condemns the poor to stay disconnected and poor



photo by: World Bank

Additional money and commitment is needed to develop and maintain rural road networks and transport services



photo by: Monzur Sadeque

Better rural transport calls for local solutions to local challenges



Improved rural transport drives sustainable rural development and national growth

Good rural road infrastructure and services promote connectivity and social cohesion. They drive agriculture, trade, commerce and industry as well as accessibility to knowledge, jobs, health, education, and the social and economic facilities necessary to counteract poverty, isolation and social exclusion.



- In Ethiopia, access to all-season roads increases consumption growth by 16% and reduces the incidence of poverty by 6.7%.¹



- In Bangladesh, rural roads reduced poverty significantly through higher agricultural production, higher wages, lower input and transport costs, and higher output prices.²



- Improved rural access has led to increase in attendance at hospitals in Indonesia, Sri Lanka and the Philippines by 20 % as a result of rural road habilitation schemes.³



- Evidence from many countries including Bangladesh, Ethiopia, India, Morocco, Pakistan and Vietnam shows that investment in rural roads, particularly to provide first-mile connectivity, leads to greater school enrolment.⁴



- Currently, women in rural areas are still up to three times more likely to die while giving birth than women living in urban centres⁵. Good rural access to maternity clinics reduces this risk tremendously.



- Increasing rural income is proven effective in stimulating demand for industrial products that generated unprecedented nation-wide growth rates in East Asian countries.⁶



Better rural transport calls for local solutions to local challenges

Rural access challenges require local resource based solutions that are compatible with the local road sectors: the engineers and technicians who will design the roads, the contractors and labourers who will construct them, the villagers who maintain them and use them.



- In Dehong, China, 69 community-based maintenance groups were established to maintain 656 km of rural roads, resulting in 80% of the rural population having all-season access, and providing local employment and skills to 1,648 people and 350 migrants (90% women and 56% ethnic minorities).²⁵



- In Nicaragua, local labour-based rehabilitation road schemes increased the use of latrine by 10% more than in villages with no road rehabilitation improvement.²⁶



- In Mpwapwa, Tanzania, community-based routine maintenance was successfully introduced at a cost of US\$600 - US\$1,200/km/yr compared to US\$1,500/km/yr for a more commonly used framework contract.²⁷



- Studies have shown that graders towed by farm tractors are as effective as motor graders in maintaining rural roads, and they involve significantly less capital and recurrent maintenance costs (as in Kenya, Tanzania, Zimbabwe, Zambia).²⁸



- Road pavement trials conducted over a 2 – 5 year period in Cambodia, Lao PDR and Vietnam have demonstrated the sustainability for high rainfall environments of block surfaced low volume roads constructed from locally sourced materials.²⁹



Better rural transport is key for food security and zero hunger

Improving rural access can lead to increased agricultural production, lower costs for farm inputs and lower transport costs for marketed outputs. Improvement in rural transport will lead to higher productivity through access to knowledge on better agricultural practices.



- It is estimated that rural poverty in Lao PDR could be reduced from 33% to 29.7% with dry season access and this could be further reduced to 26% by providing all rural households with all-season road access.⁷

- In Nepal, fertiliser use reduces significantly with increased travel time from distribution centres and effective crop prices reduce with increased market transportation costs.⁸

- Research conducted over 35 years in Sub-Saharan African countries found that a doubling of market access leads to an increase in cropland by between 2-6%, with a small but measurable associated increase in GDP.⁹



- In Ghana, bringing vehicle access closer by 5km would increase farm-gate maize prices by 11.4%.¹⁰

- In Uganda, rehabilitation of more than 200 rural roads has led to the increases of proportion of marketed agricultural produce by 7.5%, farm gate prices by 36%, household income by 40%, and a reduction of post-harvest losses by approximately 20%.¹¹

Case Study: Impacts of Zambézia Feeder Roads Project in Mozambique

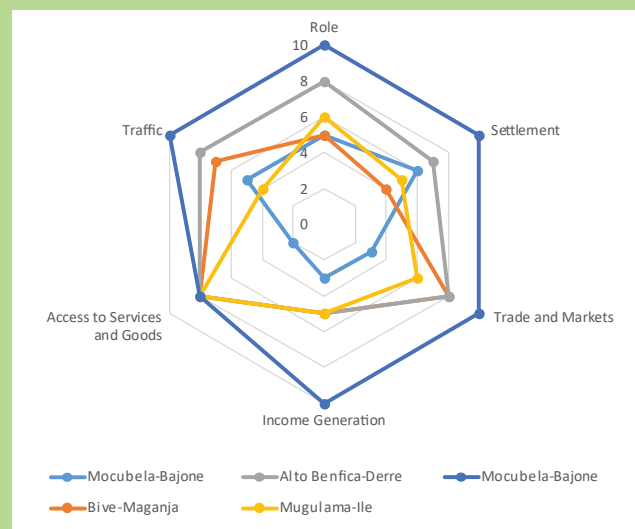


Figure 1. Impact assessment of the five rehabilitated rural roads in Mozambique (Thompson and Pedro 2012)¹²

The Zambézia Feeder Roads Project rehabilitated over 900 km of rural feeder roads in Zambézia Province from 1996 to 2001, using labour-based methods. Several important socio-economic changes have taken place since then. These include increased access to services and number of social infrastructure (schools, health units, water supplies); increased number of small businesses; increase in local processing and trade; increased flow of goods and transporters; changes in settlement patterns with people moving from areas further away to the roadside; the growth of logging and charcoal burning and their commercialization; and an increase in women's participation in the informal labour force as an income generating activity.



Poor rural transport condemns the poor to stay disconnected and poor

The provision of improved rural transport will increase markets and employment opportunities. Access to markets through better rural transport infrastructure and services is an essential pre-condition to generating rural income and thus reduce poverty. Only adequate all-season access will enable farmers to optimize their production and thus generate rural growth.



- At least 70% of the world's very poor people are living in rural areas. It is the poorest households that rely mostly on providing farming and agricultural labour.¹³
- In Bangladesh, rural roads improvements have been found to reduce poverty by 5-7%. The overall effect of road improvement on household per capita annual consumption was by 11%.¹⁴
- An investment of US\$1000 in rural roads is estimated to lift 7 people out of poverty in India and 9 in China.¹⁵



- Rehabilitation of 200 rural roads in Uganda was shown to lead, inter alia, to the emergence of new schools and health facilities; higher school enrolment and improved health, particularly for expectant mothers.¹⁶



- In Tanzania, the probability of communities migrating from rural to urban areas decreased by approximately 7% where the nearest national road was upgraded, due to the resulting locally improved economic opportunities and living conditions.¹⁷



Additional money and commitment is needed to develop and maintain rural road networks and transport services

Existing funding sources need to be expanded and new funding sources need to be developed, piloted and implemented not only for building but also for managing and maintaining the road assets as well as developing transport services. Dedicated political will is a pre-condition for success in realizing improved rural access and its effective maintenance.



- It is estimated that over a 10-year period, maintenance of Sub-Saharan Africa's rural road network constitutes approximately 30% of all its infrastructure investment needs. This is equivalent to 0.8% of the region's GDP and far exceeds the actual expenditure on rural roads.¹⁸
- Research in Rwanda revealed that a tax of only US\$12 cent per litre of fuel would be enough to finance maintenance of Rwanda's entire road network.¹⁹
- Rural transport services need to be developed in addition to infrastructure to address the lack of adequate access in many Low Income Countries. For example, less than 40% of the rural populations of Bangladesh (37%), Mongolia (36%), Afghanistan (22%), Myanmar (23%) and Nepal (17%) have access to an all-season road within 2 km.²⁰
- Impacts of providing all-season rural roads in Vietnam demonstrated a 6% increase in bicycle ownership and a significant increase in the number of households loaning motorcycles.²¹



Whole-life costing approach for low volume sealed rural roads

A lack of, or poor, maintenance can reduce significantly the asset value of rural roads, increase road use costs and reduce social interaction. However, maintenance budgets for rural roads are insufficient in low income countries. A whole-life costing approach which considers social value is required. It can identify and prioritise appropriate types and frequencies of maintenance treatments as a function of road use and type, and social benefit, across the entire road network.

Furthering such approaches will allow the identification of roads that should be upgraded on socio-economic grounds (e.g. sealing low volume gravel roads, to reduce vehicle operating costs and improve low cost access). For example, using the World Bank's Highway Development and Management Model (HDM-4), optimal grading frequencies of gravel roads have been determined as a function of traffic levels and gravel type.^{22,23} Whole-life costing research suggests that in low income countries upgrading poor condition gravel roads to low volume sealed roads has a net present value of approximately USD \$50,000 per km over a 20-year analysis period.²⁴



Case Study: My Road, My Responsibility: Empowering Women in Vietnam to Maintain Rural Roads³⁰

A project funded by DFID- UK and supported by the World Bank trained women to maintain rural roads, allowing them to earn extra income while making the roads last longer, improving access to schools and markets. The local women's unions established self-maintenance teams to manage the work on their village roads. Aside from women earning additional income from doing maintenance work, the project was also economically beneficial for the authorities. It saved them from hiring more expensive civil work contractors who had to move their people and equipment from the city to remote locations for the job.

Source: World Bank <http://www.worldbank.org/en/news/feature/2013/03/07/my-road-my-responsibility-empowering-women-in-vietnam-to-maintain-rural-roads>



Measuring Universal Rural Access in the Sustainable Mobility for All Global Tracking Framework



The Sustainable Mobility for All (SuM4All) initiative aims to act as a platform for advocacy to influence policies on sustainable mobility at global to local levels. The initiative works to facilitate the delivery of four primary objectives of sustainable transport, which include Universal Access, Efficiency, Safety, and Green Mobility. Rural Access and Urban Access are the two sub-objectives under the SuM4All Universal Access objective.

Under the initiative, a Global Mobility Report (GMR) is currently being developed to outline definitions of rural access and its linkage to global agendas; trends and future projections for rural access; methodological challenges in measuring rural access; and an assessment of the scale of these challenges. A set of principal indicators and associated supporting indicators is also being developed, which includes *input indicators* (e.g. expenditure on rural transport infrastructure and services – US\$), *output indicators* (e.g. rural roads in fair condition – km), and *impact-level indicators*, (e.g. Rural Access Index), with the latter measuring progress toward SDG Target 9.1, which aims to support economic development, human well-being, and affordable and equitable access for all through reliable, sustainable and resilient infrastructure.

The GMR 2017 establishes a baseline for data and indicators, and periodic updates are planned to refine indicators and update trend analyses. The planned application of the GMR includes engaging national and subnational governments in dialogue on sustainable mobility supported by a country dashboard, which can help to identify “high-impact” countries that can be targeted for further action to achieve global goals on sustainable development and climate change.

For more information, please visit: <http://www.worldbank.org/en/topic/transport/brief/sustainable-mobility-for-all>

**For all references and further information of the factsheet, please visit:
www.slocat.net/factsheetkeymessages**



ReCAP is a research programme, funded by UK Aid, with the aim of promoting safe and sustainable transport for rural communities in Africa and Asia. ReCAP comprises the Africa Community Access Partnership (AfCAP) and the Asia Community Access Partnership (AsCAP). These partnerships support knowledge sharing between participating countries in order to enhance the uptake of low cost, proven solutions for rural access that maximise the use of local resources.
www.research4cap.org

The Partnership on Sustainable, Low Carbon Transport (SLoCaT) promotes the integration of sustainable, low carbon transport in global policies on sustainable development and climate change. SLoCaT is the largest multistakeholder partnership working on sustainable transport with its 96 member organizations including multilateral development banks, bilateral development agencies, transport operators, civil society, private sector as well as research and academe.
www.slocat.net/ruraltransport