



ISOLATION AS A PRIMARY DRIVER OF RURAL POVERTY

What is rural isolation?

58% of developing country populations live in rural areas, yet 78% of the extreme poor are located in rural areas. In his seminal work, "Rural Poverty Unperceived," Robert Chambers linked rural poverty firmly to isolation.¹ Ian Barwell stated "If a rural area cannot be easily reached, if people living in the rural area cannot easily travel, if the flow of goods and services in and out of that area is physically difficult, unreliable or expensive ... these are the characteristics of isolation."² According to the World Bank, one billion people worldwide lack access to an all-season road and thus live in isolation, which is a major contributor to poverty and marginalization.

Figure 1. Number of rural residents in Kenya without access to all-season road



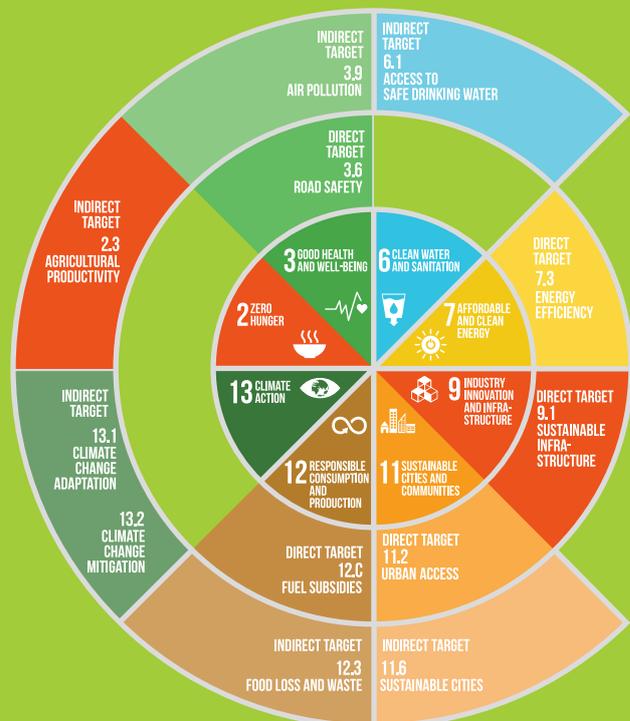
Isolation causes poverty

Isolation constrains rural economic development, makes access to markets difficult and expensive and lowers rural incomes. It has negative impacts on productivity because the access to agricultural extension services is hindered and few incentives are provided for farmers to increase production. Isolation also hampers the access to sources of non-agricultural income.

Poor access to schools and health services lowers educational levels, fosters diseases and increases child mortality. Thereby a vicious circle is induced where lower education and health standards will entail a lower level of productivity and thus generate smaller incomes, less savings and lower capital formation.



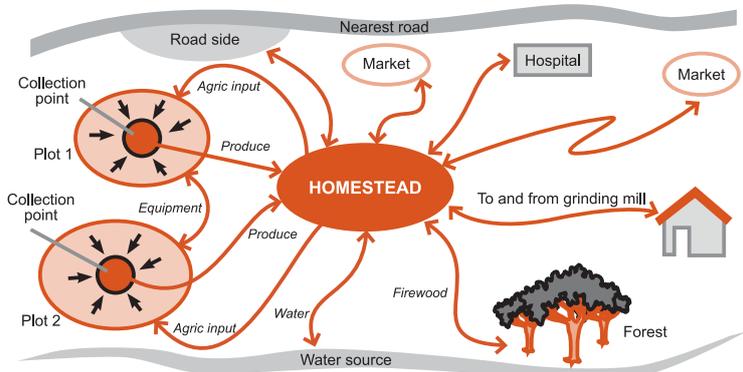
Figure 2. Rural Transport Contribution to Sustainable Development Goals



Internal access within the village

From the viewpoint of a rural inhabitant, most transport activities are undertaken within the village, mainly to satisfy subsistence needs such as accessing energy and water supplies, tasks which are achieved within seconds in industrialised countries. In Africa it is common that domestic transport tasks consume 30% to 60% of the travel time of rural households.³ Agricultural products are collected at the plots, transported to the homestead or storage facility and from there directly to the roadside, to buying points or to local and regional markets. Women often carry more than 80% of the transport burden.

Figure 3. Internal access in the village



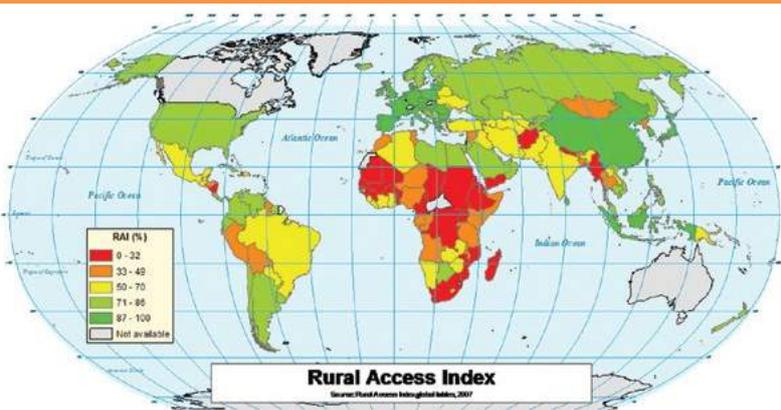
Source: O'Neill, D. H. 2005

External access from the village

Even though most trips are within the village, external access is crucial to reach markets, social services and places of employment. However, many villages can only be reached through footpaths, tracks or roads that are not passable throughout the whole year. A dirt road may be unpassable for days during rains or a water stream may prohibit the crossing of motor vehicles.

The Rural Access Indicator (RAI), developed by the World Bank, measures the percentage of rural inhabitants within two kilometres of an all-season road (i.e. one that is motorable year round by the prevailing means of rural transport), which is the equivalent to a walk of 20-25 minutes⁴. Worldwide, more than one billion people do not have adequate access to transport. Regionally 90% of the rural population in East Asia and the Pacific enjoy sufficient access to transport as defined by the RAI, compared to only 34% of their counterparts in Sub-Saharan Africa.

Figure 4. Share of population within 2 km of walking distance from next all-season road



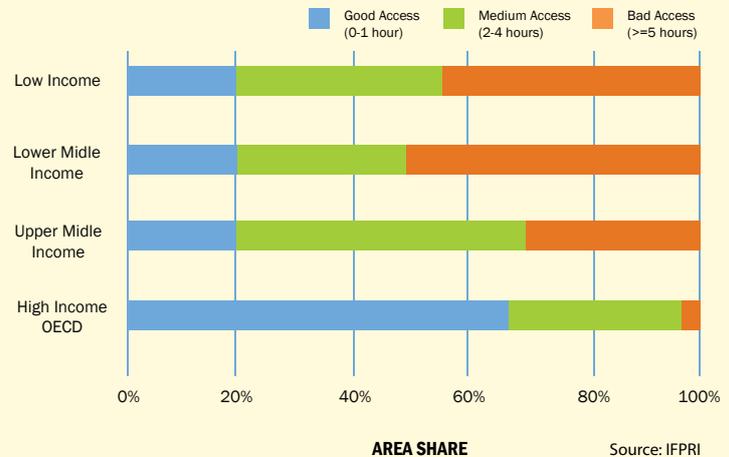
Source: FPRI: International Food Policy Research Institute <http://www.ifpri.org/>

BENEFITS OF IMPROVED ACCESS

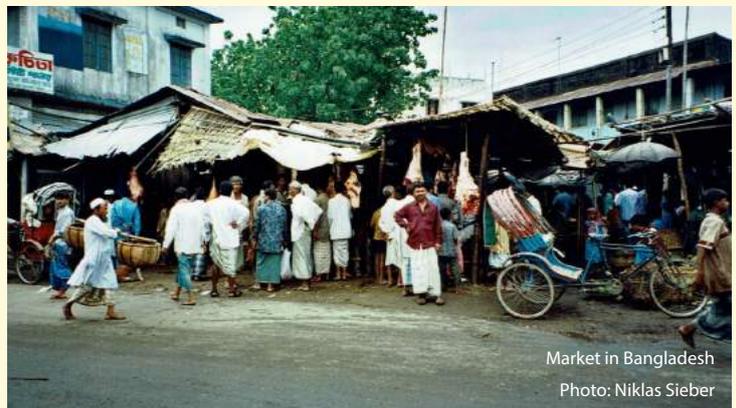
If farmers have poor or no access to markets, they are excluded from the monetary economy, which forces them to remain in a subsistence economy and thus in poverty. Access to markets is an essential prerequisite for rural development. 45% of the land area in low income countries (LIC) and 51% of the land area in the lower middle income countries (LMIC) is located more than five hours away from the next market.

Impacts of improved access to markets

Figure 5. Market access in rural areas



Source: IFPRI



Market in Bangladesh
Photo: Niklas Sieber

Providing access to markets can induce a “Transport Induced Local-Market Development” (TILD) that helps rural people to escape the poverty trap. World Bank research in Vietnam found significant impacts of a rural road project “on the presence and frequency of markets and on the availability of various services.”⁵

Impacts of improved rural access on employment and poverty

Rural road investments in Bangladesh reduced “poverty significantly through higher agricultural production, higher wages, lower input and transportation costs, and higher output prices”.⁶ Research in Ethiopia revealed that “access to all-weather roads increases consumption growth by 16% and reduces the incidence of poverty by 6.7%.”⁷ Significant effects of rural roads are observed through the generation of employment in Nicaragua through direct employment in road works and indirect employment in the non-farming sector.⁸ In Vietnam, road improvements are facilitating a switch by significant numbers of rural households from agriculture to service-based activities to increase household incomes.⁹



Mount Kenya Banana Transport
Photo: Niklas Sieber

Access to education and health facilities

A broad consensus exists amongst researchers regarding the positive effects of rural roads on accessibility to social services and places of employment. A survey in Cambodia found that rural road improvements increase attendance in primary school (marginal change), lower secondary school (26%) and upper secondary school (16%).¹⁰ Research in Brazil found that rural road improvements increased school attendance, particularly for girls.¹¹ A study in Vietnam confirms the “early and sustained impacts of improved access on primary school completion rates.”¹²

Another important impact is improved access to health facilities. Between 40 and 60 percent of people in developing countries live more than eight kilometres from a healthcare facility. Babinard and Roberts reviewed many studies from around the world to highlight how poor access was a major cause of peri-natal mortality, with an estimated 75% of mortality resulting from inadequate transport to access basic health facilities and/or transport for referrals to hospitals.¹³ In Cambodia, a road rehabilitation programme increased attendance at rural health centres by 36%.¹⁴



Rural Community Health Centre, Kenya
Photo: CGHD

Impacts of rural road improvements on maternal health in Tanzania

Every year around 50 million women give birth without skilled care, and the vast majority live in developing countries like Tanzania. In rural Bagamoyo, access is a major problem. Many roads are difficult to travel on, and transport during rain can be impossible.

The Bago to Talawanda road was in such poor condition that the local community called it a ‘passing.’ The Africa Community Access Partnership (AfCAP) assisted in building the local capacity to undertake durable improvements to district roads, using local resource based solutions, hence improving reliable access for local communities and allowing pregnant women to access the health facilities they need at any time.¹⁵

With construction now complete, cars and motorcycles are able to navigate the road in any weather, and a new weekly public bus enables frequent access to the health dispensary in Talawanda.



Western Tanzania road
Photo: Jayne McElwee

STRATEGIES TO REDUCE RURAL ISOLATION

Types of access infrastructure and means of transport

Most of the trips within a village are undertaken on footpaths, tracks, trails and roads. For travel outside the village, earth, gravel and paved roads, bridges and river jetties for water transport are used. Rural roads are often unpaved and narrow, are often limited to a single lane, and often carrying very low daily traffic volumes (generally below 200 vehicles per day). The quality of infrastructure may vary depending on weather, season, construction, and maintenance, and some means of transport require certain infrastructure standards to operate effectively.



Tanzania river crossing
Photo: Niklas Sieber

The most common mode of transport is walking and headloading a load of up to 20 kg at an average speed of 3 km/h. If larger quantities must be moved or longer distances must be covered, motorised means or Intermediate Means of Transport (IMT) may be used.¹⁶ The poorer the rural area, the less motorised vehicles are available; therefore, “roads are not enough”.¹⁷ The large majority of rural inhabitants is too poor to afford a motor vehicle and in extremely poor areas even a bicycle. More information may be found in SLoCaT’s Rural Transport and Agriculture Factsheet.

Improvement of Rural Transport Infrastructure

Access is often constrained by infrastructure that is not passable during heavy rains or potentially during the whole rainy season. In Sub-Saharan Africa and Latin America less than 15% of roads are paved and thus are more likely to provide all-season access. The problem is exacerbated through inadequate maintenance of earth roads and tracks, resulting in rapid deterioration and thus increasing transport costs tremendously.

A first step in providing all-season access to the one billion people that live in isolation would be to improve maintenance systems to a standard that effectively counters deterioration. This requires political will to provide the necessary public funds and improve maintenance systems. Additionally, the concept of basic access is appropriate since it provides “the minimum level of infrastructure network service required to sustain socioeconomic activity”.¹⁸ This may be achieved through appropriate construction standards, where the majority of roadway comprises lower cost infrastructure, and higher cost investments are undertaken only in critical spots.



Kenya Pothole and Agricultural Transport
Photo: Niklas Sieber



The role of transport services cannot be underestimated. "Efficient, reliable and affordable transport services play an essential role in promoting growth and reducing poverty".¹⁹ However, rural transport services in many developing countries show major deficits regarding speed, reliability, safety, comfort and affordability. Buses and taxis are often overcrowded, utilising often 150% of their capacities, driving at high speeds on bad roads (after letting passengers wait for hours to fill up the capacity).²⁰ The growth of the usage of motorcycles poses additional safety problems.

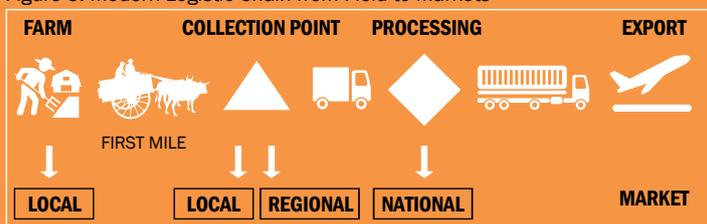
The most common passenger complaints, particularly in the more remote rural areas relate to a lack of services, especially a shortage of emergency transport and unaffordable transport fares. These problems are caused by low density of demand and bad road conditions, both resulting in low supply, little competition and an inefficient market that enables service providers to maximise profits while offering substandard services.

Improved access through modern logistic chains

70% of the population in Least Developed Countries is engaged in agriculture.²¹ Modern logistic chains can help farmers to access new markets and thus increase their incomes. The diagram shows that the logistic chains start within the village where the goods are transported on the "first mile" to the collection point, which can make up to one fifth of the total transport costs. The costs may be reduced through the usage of Intermediate Means of Transport (IMT).

The rest of the transport chain is conducted with cooled vans or trucks to regional, national or international markets. Complements such as low cost cooling devices, grading sheds, safeguard of quality standards and organisation of producers is required to reduce food loss and increase farmers' incomes. Experience from India shows that modern logistic chains, especially for high value crops, provide large benefits for small and medium scale farmers.²²

Figure 5. Modern Logistic Chain from Field to Markets



Source: KENDAT, IFRTD, TCP International (2013): Rural Logistics for Smallholder Farmers to Meet New Agricultural Market Demands: Analysis of various Horticultural Value Chains, Project AFCAP/GEN/060

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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

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² Ian Barwell's introductory speech at the First Africa Meeting of the Forum for Rural Transport and Development in Lilongwe, Malawi November 1993.

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¹² Mu, R. and D. van de Walle (2009).

¹³ Babinard, J. and P. Roberts (2006): Maternal and Child Mortality Development Goals: What Can the Transport Sector Do?, World Bank Group Transport Papers No. 37366, World Bank.

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¹⁵ Roughton (2015): Better access to healthcare: How AFCAP is helping pregnant women in Tanzania access health facilities, AFCAP-Roughton Rural Access Newsletter, 15 January 2015.

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²¹ World Bank Data, Agriculture and Rural Development, available at <http://data.worldbank.org/topic/agriculture-and-rural-development>, June 2016.

²² KENDAT, IFRTD, TCP International (2013): Rural Logistics for Smallholder Farmers to Meet New Agricultural Market Demands: Analysis of various Horticultural Value Chains, Project, AFCAP/GEN/060.