Session 1.1: Notes

Overview of the Rural Transport System and the Role of Transport Services

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1. The role of transport services
2. The rural transport system

Learning Objective

This is an introductory session to the course. The session sets the scene and provides an and introduces the participants to the main components of rural transport and to many of the main issues that will be discussed in greater detail later on.

During this session it is hoped that the participants will introduce themselves and discuss their interests and concerns with rural transport.

1. The Role of Transport Services

(Source: Njenga and Davis, 2003)

The general principle is that rural transport contributes to rural poverty through a set of interacting 'vicious circles' low incomes in turn lead to low demand and a low tax base that has a knock-on effect on the limited diversity of transport modes, limited supply of services and limited funding of road infrastructure. The low demand helps restrict competition in services and promotes cartels leading to high costs. This in turn helps perpetuate poverty.

Many planners and policy makers do not consider a transport systems approach to rural accessibility. As such there is an over emphasis on infrastructure and little attention paid to mobility issues.

Rural Transport Services (RTS) refers to motorised and non-motorised vehicles operated privately and by the state in rural and peri-urban areas. In remote rural areas, RTS predominantly provide access between farms, villages and markets for the transit of agricultural inputs and produce. Transport services also include intermediate means of transport, including tractors and even motorbikes and bicycles. The provision of RTS is largely demand driven, hence the cost of operating transport services on low volume roads is often very high because they are more likely to be poorly maintained than roads that carry a greater volume of traffic. Consequently, RTS vehicles require regular maintenance and re-fuelling as the poor quality infrastructure and terrain impacts directly on vehicle operating costs. These costs are transferred to the service user and tend to be inflated because of the low density of demand.

African rural transport services are typically uncompetitive, high cost and undiversified. In contrast, Asian transport is very competitive, low cost and has a high service frequency with diversified routes, aided by a high density of demand (Ellis and Hine, 1998). Low density of demand for transport services in Africa, caused by low population densities is not conducive to an enabling operating environment, resulting in high costs of transport that deter farmers from cultivating more produce than can be transported to market at an affordable rate. For instance, African farmers receive only 30-50% of the final price of produce sold, compared to 70-85% in Asia (Ahmed and Hossain, 1990).

This market failure taking place in countries of Africa is sustaining an uncompetitive environment, characterised by high vehicle and parts prices, low vehicle utilisation and high maintenance costs. In spite of the sporadic distribution of rural communities, there are other factors that affect the operating environment for rural transport services, including import tariffs and transport cartels.

The cost of a vehicle tends to be much higher in Africa, as much as two to three times the untaxed price than in Asia due to a combination of factors, including a small market, exclusive dealerships and government taxation; costs which are invariably transferred to transport service users. Whilst taxes and import duties prevent the over supply of vehicles, tax relief measures lower the purchase cost of vehicles which in turn lowers user fares and increases demand for rural transport services.

Transport services in developing countries are often regulated by unions, transport associations and other informal cartels who determine fares and routes, which leads to under-utilised vehicles and inefficient operating practises. In some instances, vehicles queue for days in urban centres while they fill up to capacity before they can depart for their rural destination (Ellis and Hine, 1998). More stringent regulation of RTS by national and district level government organisations and private sector transport associations would increase service frequency to more remote locations through route licensing, quantity controls and quality controls. If operators were required to run services to a timetable, they would have to leave the bus terminal before the vehicle has reached capacity, thus allowing passengers along the service route to use the RTS before it gets full (Witkiss et al, 2001). Quantity controls would ensure that all routes are serviced by an appropriate number of vehicles to avoid operators limiting routes to those that are most lucrative or heavily trafficked. Similarly, quality controls would prevent the overloading and operation of unroadworthy vehicles to reduce the incidence of road traffic accidents, although this latter measure is extremely difficult to regulate, particularly on remote rural roads.

2. Rural Transport Systems

(Source: TRL, 2002)

Rural transport involves many types of movement for a wide range of purposes both within villages and beyond. The purpose of the travel may relate to the household (obtaining water, fuel, and food), agriculture (tending and marketing crops and livestock), or a wide variety of socio-economic activities (education, religion, recreation, health, employment, income generation). Journeys may have multiple purposes. Different transport services may be appropriate depending on infrastructure, purpose, distance, gender, and age.

Effective rural transport relies on a variety of means of transport to move passengers and goods, with the type and diversity depending on infrastructure, environmental conditions, users, and demand. Most rural transport takes place in the vicinity of villages. These trips generally involve short distances and small loads carried on paths and tracks, typically for marketing, collecting water and firewood, and tending crops and animals. Intermediate means of transport (IMT) are ideal for such purposes but are

not sufficiently promoted or supported by transport planners, and they are expensive for poor rural people.

Out-of-village travel is less common but of enormous economic and social importance, including trips to and from distant farms and markets, employment opportunities, schools, health facilities, grinding mills, and friends and relatives. These trips involve longer distances and are more likely to involve intermediate means of transport or motorised transport services. But in many rural areas, walking and carrying may be used even for long-distance movement. Motorised public and private rural transport services concentrate on routes from villages to market towns and from towns to cities, where there is greater demand and better infrastructure.

There are a number of factors that are important to take into account when planning in a transport systems approach:

- The vehicles
- The infrastructure
- The transport hubs (Villages, rural markets and urban terminals)
- The organisations and institutions which manage and regulate the system
- The user

Vehicles

An efficient transport system will have a diversity of vehicle types that provide complementary transport services with different but overlapping ranges, capacities and operating costs. Various complementary means of transport can work together, fulfilling different market needs. Large-scale motorised transport is seldom cost-effective for short distances and small loads. The first and last links of transport systems and marketing chains involve local collection and distribution, so it is common to use two or more transport services for one journey. For these feeder services, intermediate means of transport are likely to be appropriate, convenient, and affordable particularly where paths and tracks form the bulk of infrastructure.

The importance of complementary transport services is not always recognised and particularly intermediate means of transport is not promoted as heavily as it should be. However, it is now becoming increasingly recognised that large motorised vehicles will not be able to operate cost effectively without the feeder services provided by intermediate means of transport.

Where demand for transport is high such as around markets and transport hubs there is a greater potential for high diversity of complementary means of transport. This is good for the user because it generates competition, gives users choice and keeps prices down. In contrast, remote rural areas may only have a few multipurpose means of transport (animal carts, a few

pickups, and perhaps cycles). Among the reasons for this lack of diversity are overall transport demand, availability of cash and credit and seasonality.

Infrastructure

Rural mobility depends on good rural transport infrastructure (roads, paths, footpaths, bridges) as well as good, low-cost transport services. For transport services in rural areas, the priority must be maintaining basic year-round access for the types of vehicles likely to be operating. The quantity of access is even more important than the quality. Other sections of this toolkit discuss issues of basic access in more detail.

Where more than the minimum number of links and length of road are present on a road network, the network is said to exhibit redundancy. In providing access to remote rural communities, road engineers and planners often try to minimise costs by avoiding redundancy. One result is that rural feeder road networks have many dead-end routes with some exceeding 100 kilometres. Interconnected routes help maximise potential demand for transport services. There is less chance of poor load factors, and rural communities can respond to a wider range of market opportunities.

Transport Hubs

Transport hubs are vital to a multi-modal transport system because they provide the areas where interchange between modes takes place and where demand can be amalgamated. Without sufficient transport nodal points it becomes difficult to amalgamate goods. For example, where rural markets are non-existent or too distant then intermediate means of transport cannot operate because distances are too large and motorised means of transport do not operate because demand is too low.

Transport hubs of particular interest are villages, rural markets and urban terminals. In terms of planning an efficient transport system it is important that these facilities are located appropriately, vehicle operators have fair access to them and that the necessary facilities are there for the users. Transport hubs are often the key to both the transport and marketing chain and as a result there is a tendency for monopolistic provision of these services which places users at a significant disadvantage.

Managers and regulators of transport services

The provision of transport services is big business employing a large proportion of a country's total workforce. While it is important that this business is allowed to get on with service delivery it is also important that this is within a conducive operating environment free from unfair operating practise and over restrictive regulation. To achieve this delicate balance requires extensive planning, management and appropriate regulation. Very often this has been ignored with the argument that the market will provide

transport services and that government departments should be more concerned with the provision of infrastructure. This has been shown to be false and rural transport policy needs to address this element of service provision.

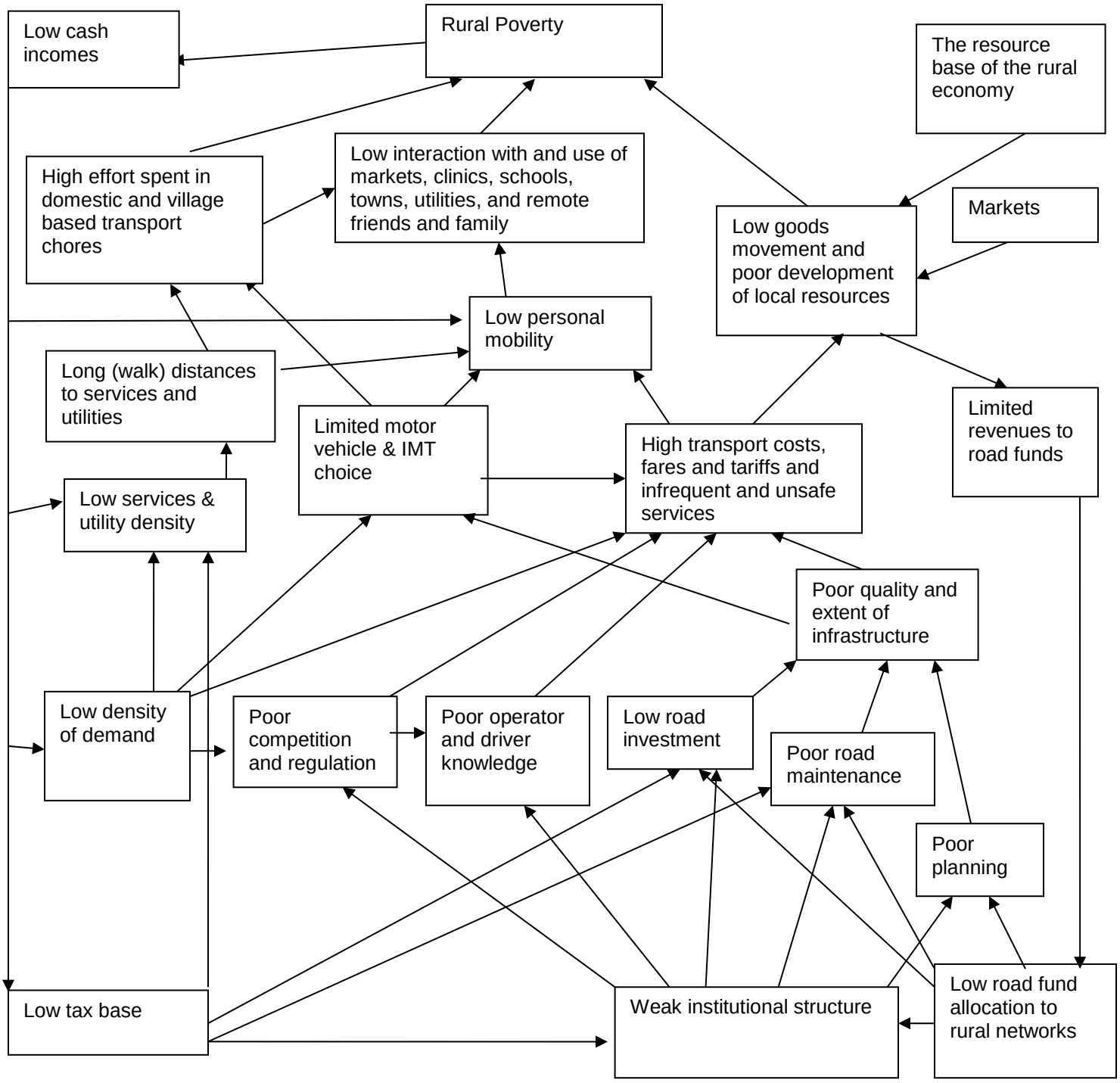
The user

Understanding the requirements of the user is the starting point for planning rural transport services. This requires extensive consultation and participation. Users and their requirements are not all the same. The needs of the isolated and extremely poor are very different from those living in rural areas with high population densities, high vehicle diversity and high incomes. Table 1.1 provides some typical scenarios of users which might be considered together with their problems and types of interventions that might be considered.

Table 1.1: Interventions for Transport Service Users

	Case 1	Case 2	Case 3	Case 4	Case 5
Population and income characteristics	Low population density, mainly subsistence agriculture, low incomes.	Low to medium population density, low incomes, subsistence & some cash-crop agriculture	Medium to high population density, low income, mainly cash crop agriculture and some non-agriculture income	Medium to high population density, medium income, cash crop agriculture & non-agricultural income sources	High income, high-intensity agriculture or non-agricultural income sources
Transport characteristics	Low vehicle ownership & diversity, very high cost and infrequent transport services, poor transport infrastructure	Limited vehicle ownership & diversity, high cost and limited transport services, poor transport infrastructure	Medium to high ownership of IMTs & diversity, low to medium cost & reasonable availability of transport services, adequate transport infrastructure	Moderate to high levels of IMTs & motorised vehicle ownership & diversity, frequent & low-cost transport services, adequate transport infrastructure	High level of motorised vehicle ownership & diversity, availability of transport services variable, medium to high cost transport services, good transport infrastructure
Specific problems	Isolation from essential social & economic services, unaffordable transport services & IMTs, unviable transport operations, lack of rural transport strategy & support, lack of competition and a regulatory framework in the transport sector, lack of acceptance of IMTs and women's use of IMTs.		Lack of transport co-ordination & structure, poor legal framework & enforcement, IMTs not included in the organisational framework, poor safety, pollution high, scope for decreasing the costs & increasing availability		Disadvantaged (elderly, disabled, unemployed) population is isolated due to infrequent & relatively high cost transport services, transport services unviable
Interventions	Subsidies (rural funds), fundamental reform of transport services sector, (strategies, liberalisation, taxes & duties), public, private partnerships, competitive tenders for routes &/or areas, promotion & financial support of IMTs, training in the whole sector, identification of champions, route planning, road spot improvements, inclusive planning and management techniques, combi transport (modes, goods, service & passengers)		Improve safety, environment & transport efficiency through better co-ordination of relevant stakeholders, legal framework, enforcement of regulations, driver & mechanic training, vehicle maintenance, inclusive planning and management techniques.		Subsidies, transport telematics, improved information systems, combi transport

The Rural Transport System: The Poverty Connections



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