

Local transport solutions: people, paradoxes and progress

Lessons arising from the spread of intermediate means of transport

Summary

Context, adoption patterns, diversity, complementarity and profitability

Despite investment in roads, inadequate transport and accessibility constrain rural development. In sub-Saharan Africa, most village transport still involves people (mainly women) walking and head loading. Between walking/carrying and large motorised transport is a wide range of intermediate means of transport (IMTs). These increase transport capacity and reduce drudgery at relatively low cost, solving local transport problems. Local transport solutions include wheelbarrows, hand carts, bicycles, tricycles, animal-powered transport, motorcycles and power tiller trailers.

International patterns of adoption are varied and paradoxical. Some technologies spread rapidly, others slowly and some are never adopted. The use of intermediate means of transport is higher in Asia than Africa. In Africa, relatively few motorised intermediate means of transport are used, but motorcycles are increasing.

Within countries, adoption of transport technologies is not homogenous: there are clusters of particular devices. Distribution is partly explained by differences in population density, incomes, cultures, topography, climate, farming systems, transport needs and project activities. Other influences are more random or 'chaotic', depending on human inventiveness, entrepreneurial skills, personal preferences, fashions and 'chance'. Complex combinations of environmental and socio-economic factors and fickle human reactions make the adoption transport technologies unpredictable.

Profitability is a key factor in the adoption of intermediate means of transport. Most transport devices generate income, save time or assist profitable ventures.

Concentrations of intermediate means of transport exist in urban areas and near markets, where there are profitable transport activities, production and repair facilities and raw materials. Development of transport technologies and services is assisted by urban trade patterns, information flows, cultural diversity and year-round economic activity. Where transport demand is high, different technologies coexist, fulfilling specialised niches. Processes of innovation, assessment and adoption are rapid. A 'critical mass' of mutually-reliant users and support services develops.

The use and diversity of intermediate means of transport is low in rural Sub-Saharan Africa. Processes of innovation and adoption can be slow, affected by low economic activity, low availability of key materials, limited information exchange and high seasonality of cash flows and transport demand. Relatively simple transport technologies (eg, normal bicycles, flatbed carts) that can be used for many different tasks are most appropriate where transport demand is low. Similarly, multipurpose animals (eg, oxen and cows) or machines help spread the cost of ownership. Profitable rural use of local transport solutions can come from greater use of manure and forage, increased production, more timely harvesting, larger circles of trade and income from hiring. Examples include ox carts in Zambia and bicycles in Uganda.

The promotion of intermediate means of transport has had varied results. Examples (eg, Mauritania, Sri Lanka, Tanzania and Zambia) show both the effectiveness and the lack of success of promotion by projects, NGOs, the private sector (formal and informal) and person-to-person exchanges. Most Asian transport technologies have

been promoted by the private sector. Bicycles and donkeys have mainly spread in Africa through private sector and user-to-user promotion. Informal diffusion can be rapid and effective, but the existing patchy distribution of transport technologies illustrates its unreliability.

Methodological implications for transport programmes

There is need for an integrated approach to the promotion and development of intermediate means of transport. Alternative interventions should also be considered. Programmes must understand the different perspectives of users. These vary according to gender, income, occupation, age and ethnic background. Participatory techniques (eg, focus groups, discussions) assist development programmes to predict the transport needs, preferences, priorities and purchasing power of women and men, children and old people. Irrespective of economic logic, adoption can be influenced by social status, prestige and aesthetics. Attitudes evolve and projects must understand changing perspectives. Stakeholders should be involved in identifying, testing, monitoring and evaluating intermediate means of transport. Reasons for adoption (or non adoption) should be analysed (examples are cited from Ghana and Tanzania). Even if transport programmes adopt holistic approaches and use participative methodologies, they cannot be sure of rapid success in rural communities, due to the very complex problems experienced by impoverished and marginalised people.

Critical mass, credit, subsidies, supply and demand and safety

It is difficult to buy, use and maintain intermediate means of transport when they are rare and supporting infrastructure for their manufacture, supply and repair is scarce. They need a 'critical mass' of users to make ownership socially acceptable and to justify the establishment of service providers. A vicious circle hinders early adoption, with insufficient support services for easy adoption and insufficient users to sustain sales and maintenance services (examples include ox carts in Guinea and bicycles in Madagascar). Programmes can help achieve the critical mass by stimulating viable support services around markets with economic activities (eg, ox carts in northwest Zambia). Income-generating activities for users can be encouraged.

Credit or subsidies (for users, traders, manufacturers or importers) can stimulate adoption. Examples are given of credit stimulating cart adoption in Guinea Bissau, Senegal, Tanzania and Zambia. However, intermediate transport technologies have also spread without institutional credit or subsidies (eg, carts in Ethiopia, Mauritania and Tanzania). Credit and subsidies proved insufficient incentives for the adoption of cycle trailers in Ghana. Subsidies and credit linked to specific technologies distort choices and markets. Credit programmes should consider the specific needs of women.

In many rural areas, adoption is limited by inadequate supply. Limiting factors that may need to be addressed include inadequacies in components and material supplies (local or imported), production facilities and skills, technology designs, capital/credit availability and/or marketing systems.

Intermediate means of transport may pose safety problems to owners, road users and animals. Problems include unbalanced or excessive loads, poor brakes and inadequate lights. A combination of legislation, enforcement and education is required. Prohibition of intermediate means of transport is popular with motorised users, but disadvantages many people. It is better to create separate lanes for slow vehicles to reduce accidents and improve traffic flow.

Gender issues

There are major gender inequalities in rural transport. In Africa, women are the main transporters but most transport devices are owned and used by men. Women have less access to information, capital, credit, cash incomes and profitable transport activities. Their viewpoints are less heard. Men determine most transport programmes and men are the major beneficiaries. Few transport projects have incorporated gender analysis. Some programmes promoting intermediate means of transport have involved women in planning and project actions. An example is provided from Tanzania.

Village transport research (for example at Makete in Tanzania) has increased understanding of women's problems. This knowledge has yet to have a major impact: women still carry most of the transport burden. Development programmes should involve women, address gender imbalances in the adoption of transport technologies, and ensure information and credit systems are suited to women's needs. Domestic transport (eg, water collection) may have insufficient direct financial benefits to justify investment in transport technologies and women often lack of cash income. Intermediate means of transport introduced for income generation (for women or men) may have secondary benefits in domestic transport. In many areas, bicycles and ox carts are considered 'male' domains (but perceptions can change). Donkeys are not prestigious and are relatively gender-neutral, so their adoption by women may be socially acceptable.

Poverty reduction goals and achievements

National authorities and aid agencies must recognise that poverty reduction, economic development and enhanced rural transport requires more than road provision and motorised transport. Rural development also depends on local transport solutions achieved by increasing intermediate means of transport. Success will depend on stimulating numerous, local initiatives that are clearly appropriate to specific areas and particular stakeholders. Public, private and/or NGO concerns and partnerships may devise and implement them. The inclusion of intermediate means of transport in national transport strategies and the development of policy environments conducive to their use will influence success.

While local transport solutions should reduce drudgery and stimulate the overall economic development of communities, the benefits will not be shared equally. The more marginalised members of society may even be impoverished (relatively or absolutely) by the entrepreneurial activities of richer people able to afford transport technologies. Women, the elderly and people with special needs are unlikely to benefit proportionally unless there is specific targeting, in relation to technological choice, information, subsidies, credit, income-generating opportunities and/or the formation of appropriate empowerment groups.

National and international networking

Self-critical monitoring and objective evaluation are vital for transport programmes. Faster progress can be achieved by stakeholder-involvement at all stages. Lessons concerning the success and failure of intermediate means of transport should be widely shared to accelerate overall progress. This requires active networking at national, regional and international levels. Broadly based national and international networks should encourage information exchange and programme collaboration. They should promote greater understanding at all levels of the many factors that influence the adoption, ownership, use, social value and economic benefits of intermediate means of transport as local transport solutions.