Interactions: maintenance–provision of access for rural transport services (IMPARTS)
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IMPARTS

Interactions: Maintenance and Provision of Access for Rural Transport Services

Research study to gain and disseminate a greater understanding of how investments in low-volume rural roads impact rural transport services and the mobility of people and their goods.

Key output: definitive guidelines on how transport services issues should be integrated into LVRR planning.

Outcome: greater understanding of continuum/transport services within LVRR authorities.

Impact: better transport services impacting rural communities.

Provision–Preservation–Services

- The continuum concept suggests the need to plan appropriate investments in LVRR
  - Construction
  - Upgrading
  - Rehabilitation
  - Routine/recurrent maintenance
  - Transport services

- Currently transport services are ignored. It is left to the informal private sector to provide (or not provide) the services people need
Phase 1: Scoping Study *(completed)*

- Strategic review of research into the relationships between current practice in provision and preservation of rural access and the end-product delivery of effective transport services.
  - Literature review
  - Interaction with ReCAP partners in Asia and Africa
  - Inter-regional workshop
  - Project design framework for Phase 2 and 3

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Larger transport services (4-wheels or more)

- Buses (mainly inter-urban roads)
- Passenger trucks
- Minibuses (need good roads)
- Jeeps / 4x4s
- Pickups
- Rural taxis

All have advantages and disadvantages

- Informal sector
- Often owner-operators or rent daily/weekly
- Often old vehicles (low capital costs)
- Usually operate from hubs (often district hubs)
Rural transport services issues

- Rural people want transport that carries **people and small freight**
- Availability, frequency and price are crucial
- Safety looks very poor, but little **disaggregated crash data**
- **Transport services authorities** generally small and underfunded (compared to roads agencies)
  - Often not present at devolved rural level (but road authorities are)
  - Mainly concerned with administrative regulation and urban and inter-urban transport services
  - No proactive planning for rural transport
- Rural enforcement weak (enforcers sympathetic or corruption)
- Potential for road authorities and transport authorities **collaboration** (as road safety sector) and/or **integration**

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Vehicle growth and modal shift with increasing importance of motorcycles

Vehicle growth in Tanzania
2007-2015

Vehicle growth in India
2000-2015
Motorcycles are often the commonest vehicles on rural roads.
Motorcycles can also use trails and trail bridges.
LVRR should be fit-for-purpose for motorcycles

- Some road types are not good for motorcycles
- Parallel concrete strips and concrete sections proud of the shoulder can cause problems for motorcycles
‘Improved transport services’ is a major justification for investing in rural roads

- Many investments in roads are ‘justified’ by assumptions that they will lead to ‘improved transport services’ (an outcome) that will in turn allow beneficial impacts
- Yet most countries are not ‘measuring’ rural transport services to gather evidence of this outcome
- Most road authorities have little interaction with transport services to understand and to ‘measure’ how road investments are ‘fit-for-purpose’ for rural mobility and the local transport services
Theory of changes for LVRR investments: *virtuous spiral*

- As road conditions improve, **transport services increase**
- Gradual **modal shift** (e.g., from walking/carrying and motorcycle taxis to larger vehicles such as taxis, pickups, minibuses and trucks).
- **Lower passenger fares and freight tariffs** (reductions in vehicle operating costs and larger vehicles)
- **Transport market increases**: more people travel and more goods be carried, benefitting businesses and markets.
- This **outcome** (better transport services) contributes to **beneficial impacts** (agriculture, health, education and economic activities, benefitting men, women and children).

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Beneficial impacts of LVRRs

Connecting villages to the road network is correlated with:

- Reduced levels of poverty
- Reduced maternal and child mortality
- Higher school attendance of pupils (and teachers!)
- Higher agricultural production and economic activity

The outcomes and mechanisms are seldom studied

Kenya Roads 2000 outcomes: Fare reductions following road investments

Motorcycle fares before and after on LVS and gravel project roads and control roads

Minibus fares before and after on LVS and gravel project roads and control roads

Source: after Hine and Bradbury 2016
Theory of changes for LVRR deterioration: **vicious spiral**

- As roads deteriorate, **transport services decrease**
- **Gradual modal shift** (eg, from minibuses to 4x4 pickups and motorcycle taxis and walking/carrying).
- **Higher fares and freight tariffs** (increasing vehicle operating costs and smaller vehicles)
- **Mobility decreases**: fewer people travel and less freight carried, restricting businesses and markets.
- This worsening outcome (poorer transport services) contributes to **negative impacts** (agriculture, health, education and economic activities, affecting women, men, children and vulnerable groups).
Vicious spiral: transport services decline

- In Liberia, inadequate maintenance of some roads has reduced them to motorcycle trails.
Changes in traffic *(less control road changes)* following 9 IRAT road investments

- In this case, the anticipated beneficial outcomes were not clear for several roads

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Theory of changes for LVRR investments

unexpected outcomes

• Examples of road investments not generating clear improvements in transport services
  – Eg, Ethiopia, Ghana, Tanzania
• Planning may not have sufficiently considered travel patterns, transport demand and route options
• Monitoring may not have gained information on transport services: We need to know
  ‘What has changed and why?’
  ‘What are the lessons for the road authorities?’
Some recommendations from ReCAP workshop

- Develop **integrated approaches** to rural roads investments and the transport provision-preservation-services continuum
- Road agencies to **engage with transport services** and with transport authorities
- **Promote sustainable integrated transport systems**, preferably with complementary transport modes
- **Collect transport services data** for planning and monitoring purposes with **outcome indicators based on transport services**
- **Ensure roads are ‘fit-for-purpose’,** appropriate to the transport needs and prevailing transport services (consider motorcycle requirements)
- Where appropriate **ensure some ‘first mile’ connectivity** to off-road villages (eg, promote motorcycle trails to link with the road network)
Phases 2 and 3 (concurrent)

- **Data collection** in 2 or 3 countries (Nepal, Ghana, Tanzania) to learn how road investments have affected transport services and the implications for future planning and investments

- **Explore market-based solutions** to transport service issues within the provision-preservation-services continuum, including:
  - how to motivate private sector investment
  - options for organising/regulating better transport services
Thank you for your attention

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