
DEVELOPING A LOCAL GOVERNMENT TRANSPORT MASTERPLAN: CASE STUDY

J. Lebo, World Bank (1999)

Objectives of the case study

National or state rural planning processes are often “top down”, technically sophisticated and, hence not geared to participation from local communities, those most affected. Involvement of local government is increasingly seen as being important to rural transport planning and engaging them in this process requires a balancing of the technical requirements of the process with local objectives and capacities. A Rural Transport infrastructure (RTI) planning process must be transparent and easily understood by local government planners who may have little grasp of the underpinning economics. The objective of this case study is to describe the development of a Local Government Transport Masterplan (LGTMP).

1. AN APPROACH TO LOCAL GOVERNMENT INVESTMENT PLANNING

In most developing countries, decentralization has meant that local governments are increasingly made fully responsible for the provision of local services, including health, education, as well as local roads. Concurrently, national or state road planning processes are often "top-down" and technically sophisticated, as well as ignoring the potential for local governments and communities to participate. The involvement of local governments, however, has been shown to be a critical element to the success of the RTI planning process. In practice, however, most local governments still rely heavily on central government engineers and economist, or externally funded consultants, to assist them in road planning process or to set local priorities for them.

Engaging local governments in the process of road planning, requires a balancing of the technical requirements of the planning process with local objectives and capacities. An appropriate RTI planning method must therefore be transparent and easily understood by local government planners, who may have limited understanding of the underpinning economics. A key tool for enabling such a local government planning process is use of a transport master plan.

2. DEVELOPMENT OF A LOCAL GOVERNMENT TRANSPORT MASTER PLAN

In many countries, the requirements for the development of a Local Government Transport Master Plan (LGTMP) will be set out as part of the national sector policy or as part of an explicit national rural transport policy and strategy. The plans themselves can be prepared by local government planning agencies in collaboration with the communities and assisted by local consultants. Alternatively, the entire

process might be contracted out to experienced consultants by local government or community representatives combined in "joint-services" committees.

Because of the need for interaction between all levels of planning and decision making, the local government master plan should be prepared in a participatory, simultaneously "bottom-up" and "top-down," approach. Key stakeholders should therefore be involved in the formulation of a LGTMP from the beginning and will include, for example, representatives from the a focal rural road agency (e.g. Ministry of Local Government), provincial road agencies, local government road agencies, university institutes, and rural transport services providers. From the private sector, involvement should come from local and international NGOs locally active in the rural transport sector, rural transport services providers, local NMT and IMT manufacturers and service providers, community leaders, farmers association representatives, etc.

For logistical ease, it will be necessary to bring together the identified partners in a workshop or other interactive format. From a regional or district-level, a useful starting point for discussing rural access investments can be human or economic development objectives of the government or other participating agencies. Most developing countries already try to prioritize their public expenditures and policy actions according to the impact on development and poverty alleviation, and many will have stated poverty reduction plans. Local governments are usually sensitive to the social and economic development needs of local communities, and should be encouraged to translated these into network development goals and strategies.

Although the final objective of the workshop will be to develop a transport master plan, a series of steps are necessary to ensure understanding and agreement among stakeholders, including:

- **Establishment of the "as is" plan.** An "as is" plan should be undertaken by local government road agency planners (and may require the assistance of a specialist of the focal entity, or by a consultant or NGO) in close consultation with the local road agency and the communities. Such plans should show the existing RTI network, including roads, tracks and paths and should indicate the condition and utilization of the individual links, as well as major obstacles and constraints. The map should contain major trip generating facilities, such as agricultural production areas, markets, schools, health centers, water collection points etc. The plan also must show the higher-level transport network and the inter-connections between the systems.
- **Scenario Analysis.** Possible improvement scenarios should then be worked out in a participatory workshop-style framework, jointly with the communities, or their representatives and with the local government planners. The consultant or representative of the focal entity will act as a facilitator and will ensure that the principles of the country's rural transport policy are considered. Basic principles for the establishment of the plan should be equity and economic development. The focus needs to be on cost-effective removal of access constraints on the entire RTI network, including roads, tracks, and paths.

- **Selection of Investments.** Cost estimates for proposed options for RTI improvements need to be made and ranked using agreed procedures. On the basis of the results, a consultative process with as many groups of the area as possible needs to take place thereafter. An effort should be made to gain the input of vulnerable groups and, in particular, women.

2.1 Establishment of the “as is” plan

The situation most often faced by the local government rural transport planners is an existing but deteriorated network of roads, tracks and paths, many of which are passable only in the dry season with difficulty, and not at all in the rainy season. There are very limited resources available for maintenance, let alone new investment. At the same time, when budgets for investment become available, there is often political pressure to use these scarce resources to upgrade certain links to the highest affordable standard (typically bitumen or a formed gravel surface). Very little attention is typically paid to basic access RTI.

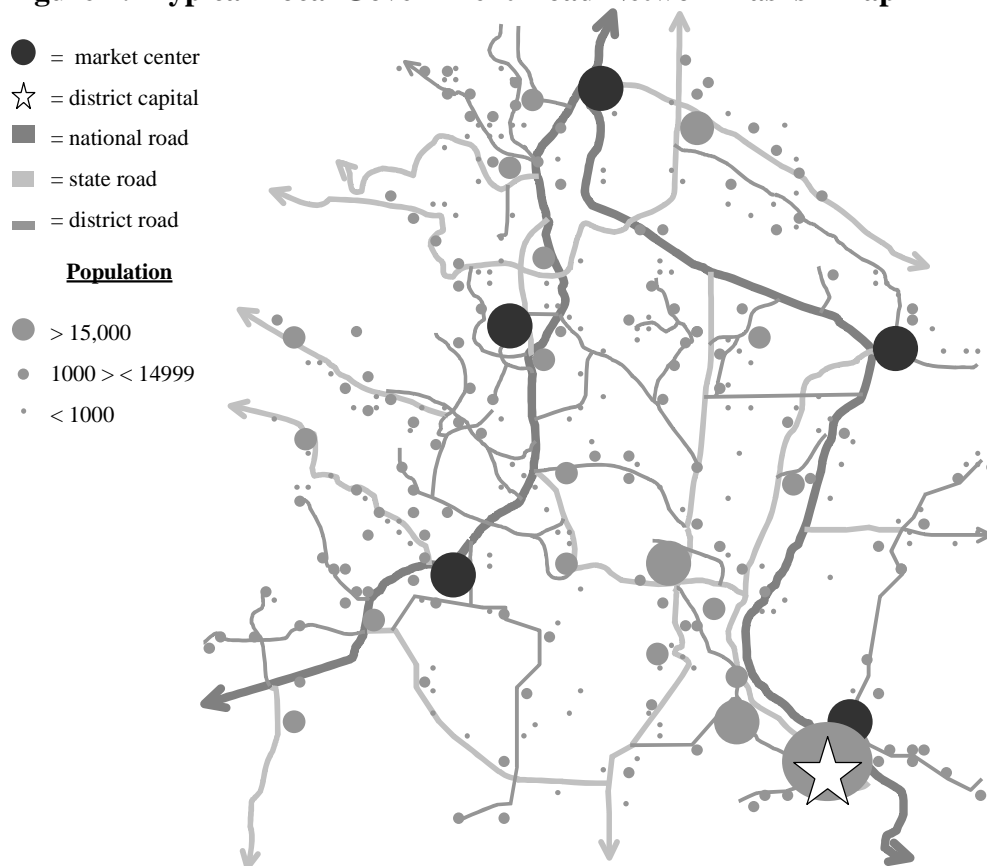
An effective LGTMP requires sufficient information for planning, which starts with an assessment of the physical situation. This includes an assessment of the extent and condition of the RTI network and its linkages to the overall transport system, an assessment of the rural transport demand, the services provided, their costs and the means of transport available, as well as information on the quality and location of services. Furthermore, in order to make a realistic assessment of engineering requirements, the climatic, soils, and topographic factors need to be taken into account, as well as alternative approaches for implementation of works (e.g., community contracting, labor-based methods, etc.).

The first step for planning RTI investments will be to integrate the physical data on the RTI network with the necessary socio-economic data. Most of the necessary data can be obtained as part of low-cost road inventory and condition survey for the network under consideration—conducted by local engineers or consultants in consultation with local communities. The condition survey should allow planners to assess the expenditure and types of works necessary to bring the particular link under consideration to the agreed minimum standard (e.g., the least-cost intervention necessary to ensure all-season motorability). For roads that are possible candidates for additional investment (e.g., high standard gravel or sealed surface) a cost estimate for possible upgrading should also be made.

Socio-economic data on the location of population, markets, health facilities, etc. can be collected from the respective national or local government planning agency, for example, census data. A database can then be established which contains the following data for each piece of RTI or section under consideration: road name, jurisdiction, length, RTI type, number of bridges and cross-drainage facilities, overall conditions, passability during rainy season, population served, and current levels of traffic. This data can be represented in tabular form (Table 1) or graphical form (Figure 1).

Table 1: Basic Road Link Information for "as is" Plan

Identifier	999
Sub-district	Karimnagar
Locale	Huzurabad
Road Name	Musthabad to Pothgal
Total Length	40 km
Length Proposed for Intervention	40 km
Population Served by Road	4,400
Category of work	Spot Improvement
Total Cost	205,000
Cost per Km	5,125
Cost per 1000 Population	46.59
Overall Condition	Poor
Estimated Traffic	18
Passable during Rain Season Y/N	N

Figure 1: Typical Local Government Road Network "as is" Map

2.2 Scenario Analysis

Once necessary information has been collected, various scenarios for intervention can be examined by workshop participants. As mentioned above, this should be an inclusive process, whereby communities, planners, and private sector interests are brought together around an "as is" plan to discuss possible strategies. The first step will be to ensure that financial and managerial responsibilities for the investments under consideration are well-defined and understood by all parties. For example, if

community roads and paths are to be improved, arrangements for community involvement (e.g., cost sharing arrangements and contracting) need to be clarified and understood among local government and community representatives. An effective financial and managerial framework is a prerequisite for an effective investments strategy, and if no such arrangements exist, details should be worked out prior to any new investment.

Box 1: Selection Criteria for the Screening of Local Government Roads

Road selection and work planning and programming requires more precise information and therefore needs to be complemented by additional information including an assessment of past performance of the rural road agency responsible for implementation and planning. Proposed variables for analysis include:

Extent and condition of the network (to ensure the maintenance of existing infrastructure):

- a. Kilometers of local government roads, community roads, tracks, and paths.
- b. Number of bridges and water crossings.
- c. Links to the rest of the road network.

Socio-economic factors:

- a. Population along specific roads and paths.
- b. Importance of road for links to markets, education, health, administrative services, and so on.
- c. Economic potential of the area, such as number and type of businesses, shops, and markets.

Measures of use:

- a. Vehicle kilometers (trucks, cars).
- b. Fuel sales.
- c. Marketable agricultural output and potential output.
- d. Area of cultivated land.

Accessibility constraints to be overcome and costs:

- a. Number of structures (culverts, bridges) at bottleneck points.
- b. Condition of roads or tracks (such as number of months during which they are passable)
- c. Engineering costs of intervention.

Capacity of districts:

- a. To raise revenue for cost sharing—what are sources and collection rates?
- b. To apply for, use, and account for funds
- c. To undertake maintenance by contract (number of firms available to bid).
- d. To provide appropriately priced labor for labor-intensive works.

Adapted from: Malmberg Calvo, 1998.

In practice, the investment selection process usually begins with a screening of the entire network to eliminate roads that are to be excluded from consideration. Of course, national and state roads within local government jurisdiction can be

eliminated from the LGTMP, since these will be responsibility of the respective higher-level agency. Similarly, existing roads in good condition can be excluded, since their needs will be covered under maintenance budgets. Others might be eliminated on the basis that they do not serve access needs (intra-village roads, tracks or paths) or are owned by local communities or private users (private access roads). Examples of criteria commonly used to screen local government RTI interventions are given in Box 1.

The "as is" plan will also serve as the basis for a discussion of appropriate engineering strategies. Performance standards for each level of the network should be discussed and agreed upon among planners, communities, and contractors. The first focus should be the setting of a minimum standard (the minimum works necessary to ensuring all-season passability) for the lowest volume part of the network. For higher volume roads, where upgrading might be considered, clear criteria should be established for when upgrading will take place based on indicators of use (traffic levels) and costs, for example, economic cost-benefit analysis. However, since most of the RTI network will be made up of transport infrastructure with very low traffic (e.g., less than 50 VPD), the main focus of discuss should be how to select and prioritize investments on links with poor all-season passability.

From an engineering perspective, an effort should be made to avoid promoting excessive performance standards (e.g., those based on surface quality or travel speeds), and focus on finding innovative low-cost solutions for broadening an agreed minimum standard of access. For example, significant cost savings can be had by focusing on low-cost interventions and spot improvement strategies and accepting occasional access interruptions (flooding at fords or closure to heavy traffic during monsoon seasons), and an effective spot improvements strategy, although often more complex to implement than a fully engineering road, can reduce investments needs five to ten fold.

KEY REFERENCES

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