

Rural Transport Training Materials

Module 2:

Planning, Design, Appraisal and Implementation

Developing a Local Government Transport Master plan: case study

Session 2.1

Part 2

Presentation 2.1b



The World Bank



DFID Department for
International
Development



theIDLgroup 

1. Introduction

Learning Objectives

This session enables participants to:

- © Explain the reasons why local government involvement in rural transport planning is important
- © Describe the core principles and steps of a Rural Transport Infrastructure planning process
- © Analyse the components of an 'as is' plan
- © Describe how to carry out a *scenario analysis*
- © Design a set of criteria that may be used to screen and select investments for local transport plans

Session Overview

- © Rural transport infrastructure
- © Overview of a Local Government Transport Master Plan (LGTMP)
- © Components of the process for developing a LGTMP
- © Development of a LGTMP: experiences from the case study

2. Rural Transport Infrastructure

- ⊙ National or state road planning processes often:
 - 'top-down'
 - technically sophisticated
 - ignore potential of local government and communities to participate
- ⊙ **Local governments**
 - are a critical element to the success to the rural transport infrastructure (RTI) planning process

But the reality is most local governments still rely on:

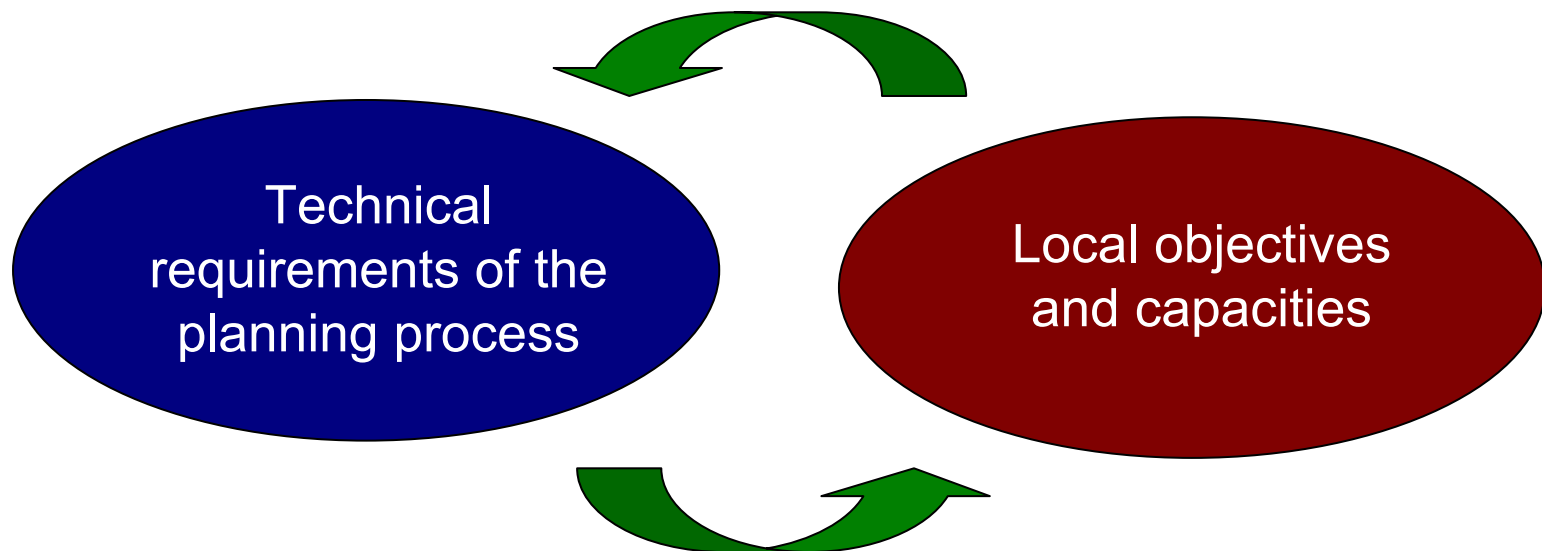
- central government engineers and economists
- externally funded consultants

3. Overview of a Local Government Transport Master Plan (LGTMP)

- ⊙ A key **tool** for enabling participation of local government in planning
- ⊙ Must be **transparent** and easily **understood** by local government planners ...
 - who may have limited understanding of the underpinning economics

Local Government Transport Master Plan (LGTMP)

Allows for a balance of:



Development of Local Government Transport Master Plan (LGTMP)

LGTMP may be set out as part of:

- ⊙ National sector policy, or
- ⊙ Explicit national rural transport policy & strategy

Two avenues:

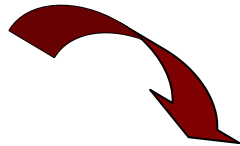
1. Plans prepared by local government planning agencies in collaboration with communities, assisted by local consultants
2. Entire process contracted out to consultants by local government or community representatives combined in '*joint-services*' committees

4. Components of the process for developing a LGTMP

Guiding Principles

Organisation & Content

Stages



1. Establishment of the 'as is' plan
2. Scenario Analysis
3. Selection of Investments

Guiding Principles

1. Participatory: simultaneous 'bottom up' and 'top-down'
 - interaction at all levels of planning & decision making
2. Involve key stakeholders from the outset

- rural transport service providers
- local and international NGOs locally active in the rural transport sector
- local NMT and IMT manufacturers and service providers
- community leaders, farmers association representatives etc.

- local rural road agency e.g. Ministry of Local Government
- provincial road agencies
- local government road agencies
- university institutes

Organisation & Content

1. Requires a workshop or interactive format
2. A good starting point is the human or economic development objectives of government or participating agencies ...

Organisation & Content

Rationale

- ③ Most countries prioritise public expenditures and policy actions according to the impact on development & poverty alleviation
- ③ Many have stated poverty reduction plans
- ③ Local governments are usually sensitive to the social & economic development needs of local communities
 - so should be encouraged to translate these into network development goals and strategies

Stages

Stages for the development of a LGTMP

1. Establishment of the 'as is' plan
2. Scenario analysis
3. Selection of investments



Stages for the development of a Local Government Transport Master Plan (LGTMP)

Group discussion

Discuss the issues that should be explored when developing a LGTMP, for each of the following:

- 1. Establishment of the 'as is' plan*
- 2. Scenario analysis*
- 3. Selection of investments*

5. Development of a LGTMP: experiences from the case study

1

Establishment
of the 'as is' plan

2

Scenario
analysis

3

Selection of
investments

1. Establishment of the 'as is' plan

Fundamental problems

- ③ Existing but deteriorated roads, tracks and paths
 - many are passable only in the dry season with difficulty, and not at all in the rainy season
- ③ Very limited resources available for maintenance
 - let alone new investment!
- ③ Political pressure to use scarce resources to upgrade certain links to the highest affordable standard
 - typically bitumen or a formed gravel surface
- ③ Little attention is typically paid to basic access RTI

Who should do it?

☉ Local government road agency planners

- may require the assistance of a specialist of the focal entity

or

☉ By a consultant, local engineers or NGO

- in close consultation with the local road agency and the communities

The plan should contain an integration of physical data with socio-economic data

Physical data:

- ⊙ Existing RTI network: roads, tracks, paths
- ⊙ Condition & utilisation of the individual links
- ⊙ Major obstacles and constraints
- ⊙ Higher-level transport network and the inter-connections between the systems
- ⊙ Climatic, soils, and topographic factors
 - for a realistic assessment of engineering requirements
- ⊙ Alternative approaches for implementation of works
 - e.g. community contracting, labour-based methods

Key points on collection of physical data

- ③ collect data as part of low-cost road inventory & condition survey
- ③ the condition survey allows planners to assess the expenditure and types of works necessary to bring the link under consideration to the agreed minimum standard
 - e.g. the least-cost intervention necessary to ensure all-season *motorability*
- ③ make a cost estimate for investment in roads with the potential for upgrading
 - e.g., high standard gravel or sealed surface

Socio-economic data

- ◎ Location of population
- ◎ Assessment of the rural transport demand
- ◎ Major trip generating facilities
 - agricultural production areas, markets, schools, health centres, water collection points
- ◎ Services provided
 - costs and the means of transport available
 - quality and location of services

Key points on data collection

- ◎ Can be collected from the respective national or local government planning agency
 - for example, census data

Establishment of a database

The database contains, 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
- current levels of traffic

Data may be presented in tabular form: for example

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

Data may be presented graphically as a “map”

● = market center

★ = district capital

■ = national road

■ = state road

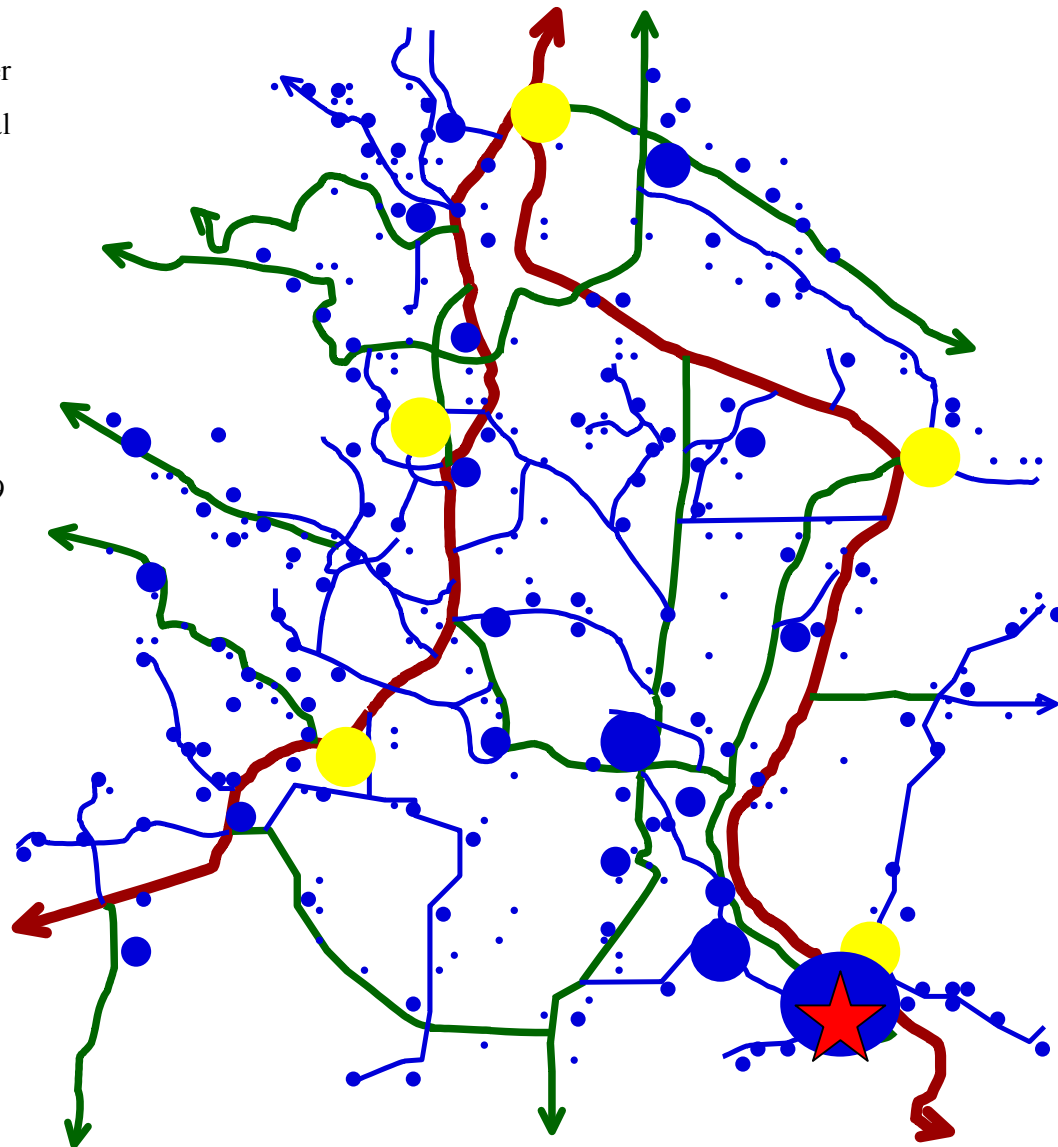
■ = district road

Population

● > 15,000

● 1000 > < 14999

● < 1000



1

Establishment
of the 'as is' plan

2

Scenario
analysis

3

Selection of
investments

2. Scenario Analysis

Key considerations:

- ◎ **Options:** consider a range of possible improvement scenarios
- ◎ **Participation:** use a workshop-style framework with
 - communities or their representatives
 - local government planners
 - private sector interests
- ◎ **Facilitator:** the consultant or representative of the focal entity
 - acts as a facilitator
 - ensures that the principles of the country's rural transport policy are considered
- ◎ **Equity and economic development**
- ◎ **Cost-effective** removal of access constraints on the entire RTI network
 - including roads, tracks, and paths

Use 'as is' plan to discuss possible strategies

Financial & Management Framework ...

1. Must be well-defined & understood by all parties.

For example, improvement of community roads and paths

- clarify community involvement e.g. cost sharing arrangements and contracting
- ensure clear understanding by local government and community representatives

2. Is a **prerequisite** for an effective investments strategy

- if no such arrangements exist, details should be worked out prior to any new investment

more precise information

Road selection, work planning and programming requires more precise information

Additional information should include:

- © Assessment of past performance of the rural road agency responsible for implementation and planning

1

Establishment
of the 'as is' plan

2

Scenario
analysis

3

Selection of
investments

3. Selection of Investments

For proposed options for RTI improvements:

- ⊙ Make cost estimates
- ⊙ Rank estimates using agreed procedures

On the basis of the results:

- ⊙ Coordinate a consultative process with as many groups in the area as possible
- ⊙ Gain the input of vulnerable groups, especially women

Investment selection process

Screening of the entire network to eliminate roads that will not be considered in the LGTMP:

- ⊙ National and state roads within local government jurisdiction
 - these will be the responsibility of the respective higher-level agency
- ⊙ Existing roads in good condition
 - their needs will be covered under maintenance budgets
- ⊙ Roads that do not serve access needs
 - intra-village roads, tracks or paths
- ⊙ Roads owned by local communities or private users
 - private access roads

Selection Criteria for the Screening of Local Government Roads

Proposed variables for analysis include:

Extent and condition of the network

Socio-economic factors

Measures of use

Accessibility constraints to be overcome and costs

Capacity of districts

Adapted from: Malmberg Calvo, 1998.

Extent and condition of the network

Needed to ensure the maintenance of existing infrastructure

- ⊙ Kilometres of local government roads, community roads, tracks, and paths
- ⊙ Number of bridges and water crossings
- ⊙ Links to the rest of the road network

Socio-economic factors

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

Measures of use

- © Vehicle kilometres (trucks, cars)
- © Fuel sales
- © Marketable agricultural output and potential output
- © Area of cultivated land

Accessibility constraints to be overcome and costs

- ③ Number of structures (culverts, bridges) at bottleneck points
- ③ Condition of roads or tracks (such as number of months during which they are passable)
- ③ Engineering costs of intervention

Capacity of districts

- ③ To raise revenue for cost sharing — what are sources and collection rates?
- ③ To apply for, use, and account for funds
- ③ To undertake maintenance by contract (number of firms available to bid)
- ③ To provide appropriately priced labour for labour-intensive works

Appropriate engineering strategies

- ③ **Performance standards** for each level of the network
 - discussed and agreed with planners, communities, and contractors.
- ③ **Set minimum standards**
 - minimum works necessary to ensuring all-season passability for the lowest volume part of the network
- ③ **Set clear criteria for upgrading** of higher volume roads
 - based on indicators of use (traffic levels)
 - costs, e.g. economic cost-benefit analysis

..... how to select and **prioritise** investments on links with poor all-season 'passability'

- because most of the RTI network will be made up of transport infrastructure with very low traffic, (e.g. less than 50 VPD)

Concluding remarks

- ③ Avoid promoting **excessive performance standards**
 - e.g. those based on surface quality or travel speeds
- ③ Focus on finding innovative **low-cost solutions** for broadening an agreed minimum standard of access

For example

- ③ **Low-cost interventions & spot improvement strategies**
 - lead to significant cost savings
 - reduce investment needs five to ten fold
 - even though they are often more complex to implement than a fully engineering road
 - require an acceptance of occasional access interruptions
 - flooding at fords or closure to heavy traffic during monsoon seasons