

# Rural Transport Training Materials

## Module 1:

### Policies and Strategies

# Socio-economic Impact of Rural Transport Interventions and Poverty Alleviation

## Session 1.2

### Part 1

Presentation 1.2a



The World Bank



**DFID** Department for  
International  
Development



theIDLgroup 

# The Training Modules

This Module

## Module 1. Policies and Strategies

Module 2. Planning, Design, Appraisal and Implementation

Module 3. Management and Financing

Module 4. Rural Mobility

Module 5. Social and Environmental Issues

# Module 1. Policies and Strategies

Introduction Session: Overview of Modules & Rural Transport Issues

Session 1.1 Village Level Transport

This session

Session 1.2 Socio-economic Impact of Rural  
Transport Interventions

Session 1.3 Rural Transport Policy Development Process

Session 1.4 Rural Transport Safety Strategy

# 1. Introduction

## Learning Objectives

- ③ Examine the role of conventional approaches to road investment in poverty alleviation
- ③ Explore the extent to which rural road investment may be a catalyst to growth
- ③ Review the significance of labour-intensive road works
- ③ Describe the conditions necessary for the poor to benefit from road investment and maintenance programmes

# Session Overview

- ③ Overview of rural roads investment and poverty alleviation
- ③ Role of roads investment in growth: the *enabling environment*
- ③ The growing significance of labour-intensive methods
- ③ The contribution of labour-intensive methods to poverty alleviation

## 2. Overview of rural road investment and poverty alleviation

### A key question:

To what extent does investment in building new roads alleviate poverty?



Credit: TRL Limited

# The Great Debate! Roads investment and poverty alleviation



## Group Activity

*The proposed motion is:*

*‘Investment in building new roads  
alleviates poverty.’*

*Prepare cases for and against the motion*

### 3. Role of roads investment in growth: *enabling environment*

Road investment ...

A catalyst for growth?

or

Just responds to growth?



# Wilson's evidence suggests that .....

- ◎ Road investment does not initiate growth
- ◎ Variation in the results of road investment can be explained by differences in:
  - creation of economic opportunity
  - response to economic opportunity

Discussion based on Wilson's 1970's model: the 'enabling environment'

# The extent to which road investment ...

1. **Creates** economic opportunity depends on:
  - © Quality & quantity of resources in the area
  - © Change in transport rates & services
  - © Commodity prices
  
2. **Responds** to economic opportunity depends on:
  - © Awareness of opportunity
  - © Attitudes towards economic change, abilities & incentives

A major factor influencing **response** to new transport capacity is

**awareness** of its potential.

This depends on the number of people directly influenced.

New transport capacity favours

**densely populated** areas,

which tend to be of

**greatest agricultural potential.**

# Where a road opens up a new territory

- ◎ Soil or forest conditions determine:
  - type of activity
  - increase in output/yields
- ◎ With increasing yields/ rising prices – **reduced freight rates** merely provide *additional stimulus*

## But!

- The lower the freight rates = the greater the stimulus
- New routes have more numerous and larger effects than rehabilitated or improved roads

The new transport capacity is responsive rather than causal.

*Conditions required to ensure that investment in road infrastructure leads to positive socio-economic outcomes ...*

Transport investment policies that focus on road infrastructure ... will only produce a positive response in areas where there is

Prior dynamism

Competitive  
motor transport  
industry

# Prior dynamism

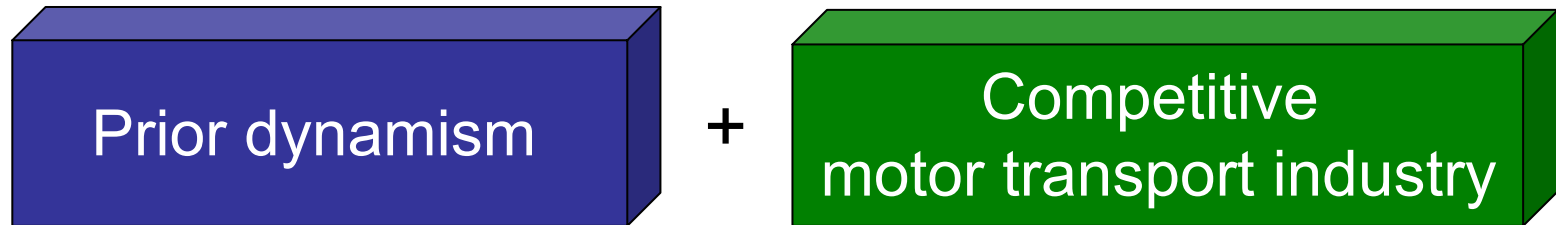
Prior dynamism = economic opportunity is sought & quickly exploited

- ◎ In areas of rapid growth in population, output and so on ...
  - existing transport facilities are likely to form a **'bottleneck'**
- ◎ So, increased transport capacity is needed to remove the bottleneck so people can exploit the economic opportunity

# Competitive motor transport industry

- ◎ A stimulus to increased production
  - is a sharp reduction in freight rates
  - associated with increased vehicle capacity
- ◎ So, a competitive transport industry is a mechanism whereby cost savings are passed on to producers

# The problem is ...



are not normally found in areas of significant poverty

- © So, road investment *per se* won't alleviate poverty!



# Also, experience has shown that ...

## ⊙ Road construction

- does not automatically lead to competitive rural transport services

## ⊙ Since 1980s – low income countries =

- foreign exchange rationing &
- effects of oil price crisis of 1970s

## The reality is:

Rural areas become a market for the 'sellers' of transport services, not their buyers.

# 4. The growing significance of labour-intensive methods

## Historical context

- ◎ 1960s & 1970s = expansion road networks linked to
  - cash crops tea, coffee, sugar, wheat
  - potentially profitable smallholder agriculture
- ◎ But the impact of this expansion for the poor?
  - mainly negative

# The poor didn't benefit because ...

- © Income distribution and poverty alleviation seldom were considered as criteria in the *selection* of projects
- © An area's potential contribution to agricultural output was the main factor considered for road construction

## These factors:

- © Reinforce existing social & economic structures
- © Speed up growing social & economic disparity
  - because these factors help wealthier & better-informed producers expand faster than others

## Also ....

- ③ Use of labour-based methods was rare – which gave few direct income transfers to the poor
- ③ Poor maintenance of new roads had nullified many of the benefits of road provision

# Winners and losers

- ⊙ Those well positioned will profit
- ⊙ Widens income disparities & centralises capital
- ⊙ Land tenancy
- ⊙ Cash crops vs. food crops
- ⊙ Accompanying measures – crop centres & credit associations – can *reduce* income disparities

# For the poor to benefit – the challenge for policy makers is to ...

- © Ensure new road projects are complemented by programmes to promote
  - competition amongst transporters
  - land reform
  - access to credit

Road investment is not a catalyst for development & alleviates poverty?

... there was an exception

## The case of Bangladesh

*improving road infrastructure had a profound effect on the incomes of the poor*

- ◎ Household income rose by 33%. Income from
  - agriculture increased 24%
  - livestock & fisheries increased 78%
  - wages doubled
- ◎ But income from business & industry only rises by 17%

Bangladesh Institute of Development Studies (BIDS) 1982, and International Food Policy Research Institute (IFPRI) 1990.

# Most striking was the distribution of these increases

- ⊙ Landless and small farmers gained a larger share of the increases from crops, wages & livestock and fisheries
- ⊙ While the large landowners capture most of the smaller increase in business and industries

This prompted calls to focus investment on creating excess capacity of road infrastructure, rather than reduce bottlenecks. And to replicate this approach in other countries.

This flew in the face of previous evidence & empirical research.



# Why did road investment work for Bangladesh?

- ◎ Rich fertile flood plains
- ◎ Dense rural populations - over 800 persons per sq. km. (range 175 – 4200)
- ◎ Population can be supported because:
  - 12% of the land area can be triple cropped
  - 59% double cropped
  - 29% single cropped
- ◎ 50% of landless people = abundant service sector
  - especially non-motorised transport (NMT)
  - well suited to the 'small- parcel' nature of most goods consignments

- © The NMT are indigenously produced, are cheap & robust
- © Rice production increasing at 4%, and population at 1.8% annually = rising demand for transport
- © New roads tap into both a demand for transport and a service sector willing and able to meet that need

## However ...

- © Bangladesh's unique environment casts doubt on the application of these results to other countries
  - except possibly the Gangetic plain of India, Indus basin of Pakistan, Java and China

### Overall conclusion:

A 'bottleneck' approach to rural transport infrastructure investment is the most effective route to development, rather than the 'leading' route.

## 5. The contribution of labour-intensive methods to poverty alleviation

- ◎ Local employment created
- ◎ Most direct benefits through earnings
- ◎ Benefits are maximised if activities are:
  - labour-intensive rather than capital-intensive
  - located where significant numbers poor people live
  - managed so the poorest are targeted effectively, especially women

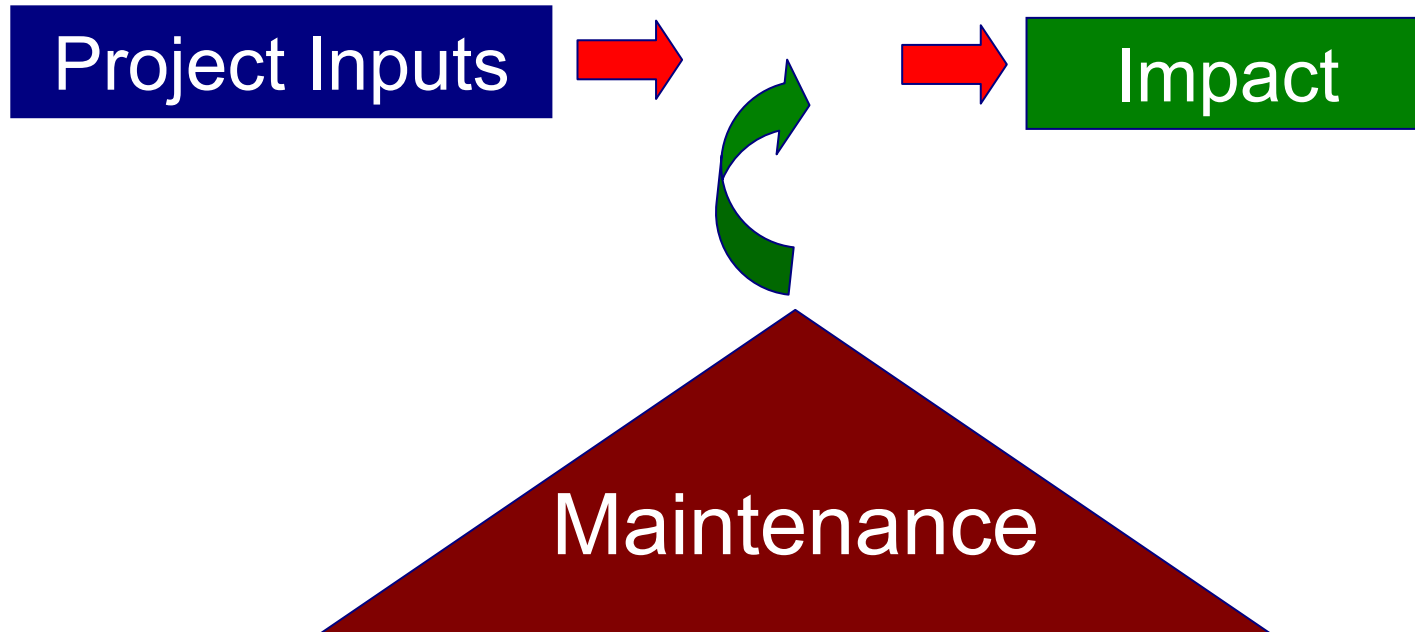
### **But!**

High wages relative to those in the local economy will tend to exclude the poor and vice versa

# Socio-economic effects of labour-intensive road improvement

- ◎ **25-30% cheaper** than comparable capital-intensive methods
- ◎ **Employ 5 times more labour** & can be wage-targeted on the poorest
- ◎ New construction or major rehabilitation = **US\$ 3,000 - 5,000/km. injected** into local economy.
- ◎ **Opportunity costs** =
  - 10% for women in poor isolated villages in India
  - 100% in Thailand & a few cases in Africa
- ◎ **Forward linkages** (the spending of earnings during construction) were estimated to generate income multipliers of **1.5 - 2.8**

# The missing link



# Maintenance is the overlooked link between the effects of project inputs and impact

- ⊙ Failure to preserve the quality of a road = reduced socio-economic impact
- ⊙ The dis-benefits embedded in the original improvements are likely to remain
  - once land is lost to the right-of-way for a road it is rarely reclaimable for other purposes

# The socio-economic impact of roads is not permanent

- © The nature, type, magnitude, and duration of the effects of road provision will depend on
  - the standard of the facility provided initially
  - the extent to which that standard is maintained
- © 1980s = maintenance crisis & little new construction
- © Reconstruction of existing routes - likely to rejuvenate developments which reinforce established patterns of income distribution
  - apart from benefits of labour-intensive methods

Effects on poverty alleviation were limited



# The 1990s - a new realism

- © Under-funding for maintenance caused havoc and many countries faced a huge backlog of major rehabilitation and maintenance
- © New initiatives
  - e.g. Kenya - experimenting with innovative spot-improvement policies as a means of spreading scarce funds further

# A new approach was needed for road investment

- ◎ **A supply-led** approach = road-system-focused process, using a top-down way of planning
  - emphasises efficient long-distance motorised transport
- ◎ **A demand-led** process is more appropriate to the movement needs of the poor
  - emphasises efficient short-distance and non-motorised transport

# Investment in rural roads can be improved - and alleviate poverty

1. Enhancing the use of labour-based methods

2. Funds allocation procedures

3. Promoting an 'enabling environment' through stimulation of complementary transport services

# 1. Enhancing the use of labour-based methods

## Main reasons for their success

- ⊙ Were long-term & supported at national level
- ⊙ Assessment of the technical feasibility and economic efficiency
- ⊙ Recognition of technological and institutional capacities
- ⊙ Focus on technical, institutional, organisational and socio-economic aspects at all stages

- ◎ Strong organisations were established with good management systems
- ◎ Balance between decentralisation and centralisation
- ◎ Training = extensive & well focused
- ◎ Long-term political support
- ◎ Long-term financial commitment
- ◎ Good co-ordination between the government departments, those administering the programme, local authorities, those providing technical assistance and donors
  - facilitated by objective external advice from the ILO
- ◎ These were *not* short-term emergency relief programmes

## 2. Funds allocation procedures

- © A poverty-oriented funds allocation procedure has to confront the ***equity of access*** issue
- © Network-based approach is required
- © Access is a political decision
  - provision of schools, health and other social services

# For example: Kenya December 1993

- ⊙ Appeal for 2 million tons of food aid to combat the effects of prolonged drought
- ⊙ Most of the aid was destined for the arid/ semi-arid lands
  - 80% of the land area
  - requiring an extensive rural road network
  - inhabited by 30% of the population
- ⊙ Provision of access to these areas may not be an economic necessity - but! government can ignore it
- ⊙ Investment funds allocation for rural roads must be based on both **social and economic** grounds if they are to serve the needs of the **poor**

### 3. Promoting an 'enabling environment' through stimulation of complementary transport services

- ⊙ Road investment won't lead spontaneously to improved road services
  - this is needed for the poor to benefit
  - requires complementary actions and government policies
- ⊙ **The mechanism?** - changes in the characteristics of privately operated transport or transport services, as a direct result of a road improvement
- ⊙ If changes do not occur = little socio-economic impact of road improvement



# Factors affecting development of transport services alongside road investments

- ⊙ Governments may regulate fares & tariffs
- ⊙ Operators can form cartels so travel costs to the user do not change

**But!**

- ⊙ Shortages of foreign exchange may limit the expansion or usage of vehicle fleet so no extra traffic appears
- ⊙ Faster potential journeys can be frustrated by rigidities in the scheduling of services
- ⊙ Time savings = little practical significance due to the short length of most journeys

# Investigate why transport services don't develop alongside rural road investment

- ◎ Assess national & local conditions affecting the provision of cheaper, faster, more frequent and reliable services
  - allows qualitative assessment of the economic & social impact
- ◎ The magnitude of operational changes influences the scale of impact so
  - identify key constraints
  - possible measures to address them
  - e.g. by complementary investments or government policies

# Concluding remarks

## Conventional investments in rural roads ...

- ⊙ Often exclude the poor from the planning process
- ⊙ Fail to benefit the poor
- ⊙ Are unlikely to have a significant effect on poverty alleviation, except
  - in exceptional circumstances e.g. Bangladesh
  - short-term employment during project implementation
- ⊙ In the longer-term are likely to reinforce existing social & economic structures and stratification processes

### **However:**

Although the poor do not travel frequently, they still have need of basic access to markets and social facilities like hospitals.

# Road investment may contribute to poverty alleviation when ...

- ◎ Well organised labour-intensive road construction & maintenance programmes target the poor
- ◎ Engineering solutions of road investment & maintenance are supplemented with
  - policies to address other issues such as transport services and intermediate means of transport (IMTs)
- ◎ It is seen as *enabling development* to take place rather than as a catalyst to development