Trainers' Notes
Rural Transport Training Materials

Module 2:
Planning, Design, Appraisal and Implementation

Part 1
Design of rural transport infrastructure & the use of self-help for low volume road construction

Part 2
Case study from Indonesia

SESSION 2.2

SSATP
Africa Transport Policy Program

The World Bank · TRL · DFID Department for International Development · itt Reducing Poverty by Enabling Access · the IDL group

Overview of Session 2.2

Session Objectives	By the end of the session participants will be able to: **Technical paper** • Explain the rationale for Rural Transport Infrastructure (RTI) interventions • Define key terms and concepts • Describe the seven components for designing RTI interventions for basic access **Case study** • Describe the pre-conditions necessary for self-help road projects • Analyse key policy, strategy and economic factors affecting self-help road projects • Explain the potential and limitations of such projects • Make recommendations to ensure the effectiveness of community based self-help road projects
Rural Transport Knowledge Base materials used with this session	**Design of Rural Transport Infrastructure** Based on: Design and Appraisal of Rural Transport Infrastructure, by Jerry Lebo and Dieter Schelling, The World Bank **The use of self-help for low volume road construction** **Case Study: Indonesia** P. Winkelmann, (2000)
Training Materials	Presentations 2:.2a Design of Rural Transport Infrastructure 2.2b The use of self-help for low volume road construction Case Study: Indonesia Activity Sheets 19 Concepts and definitions 20 Experiences of spot Improvement and labour based approaches in other countries 21 Analysis of the key issues for self-help initiatives Handouts 19 Concepts and definitions (answers to the card sorting game)

Structure of Session 2.2

Key Topics	*Training Methods*
Part 1	
1. Introduction	**Presentation**
2. The case for RTI	**Q & A with Presentation**
3. Concepts and definitions	**Presentation** **Group Activity**
4. Designing RTI for basic assess	**Presentation** **Group Discussion** **Q & A with Presentation**
Part 2	
5. Indonesian Case Study 5.1 Introduction 5.2 Background to the case study on Flores Island 5.3 Analysis of the key issues for self-help initiatives 5.4 Experiences from Flores	**Presentation** **Case Study Activity** **Presentation**
Summary of session 2.2	

Trainers' Summary

This session is divided into two parts:

Part 1 is based on the technical paper: Design of Rural Transport Infrastructure.

Part 2 is based on the case study from Indonesia: The use of self-help for low volume road construction.

Session 2.2 Trainers' Notes

Part 1

1. Introduction

Training Methods	*Content*	*Materials*
Presentation 	Introduce the first part of the session by explaining the learning objectives and session structure. The first part of this session is based on the technical paper: Design of Rural Transport Infrastructure. This session focuses on the fundamental aspects for designing rural transport infrastructure for basic access. **Key Points:** **Session Overview Part 1** - The case for Rural Transport Infrastructure (RTI) - Concepts and definitions - Designing RTI for basic access	Presentation 2.2a Slides 1 - 5

2. The case for RTI

Training Methods	Content	Materials
Q & A 	**RTI – the Rationale** • Facilitate a discussion on the rationale for RTI (Rural Transport Infrastructure) interventions. Begin the discussion by asking: *What are the reasons for taking a RTI approach to improving access?* • Note points made by participants on flip chart. Key learning points are discussed below.	Flip chart pens
Presentation 	Summarise the main points raised using the presentation. **Key Points:** • The relationship between transport and poverty, isolation and exclusion of the poor • The transport needs of the poor are mainly non-motorised, on rugged paths, in poor conditions • RTI is roads, tracks, paths, footbridges • 5-6 million km. designated RTI network in developing countries, and undesignated networks are several times longer • 80% of trips over RTI are less than 5 km by non-motorised means • Excessively high standards of access have been used, which, given scarce resources, means that many people do not have access to this infrastructure	Presentation 2.2a Slides 6 - 8

3. Concepts and Definitions

Training Methods	*Content*	*Materials*
Card Sorting Game	The purpose of this exercise is to explore key concepts behind the design of Rural Transport Infrastructure, and to define working terminology. • Divide participants into groups of 3, and give them Activity Sheet 32 • Explain how to carry out the card sorting exercise: - ✓ discuss the meaning of key terms amongst the group ✓ find the appropriate definition and the information for each term and arrange the cards so that each term is matched up with it's relevant definitions • Facilitate discussions with individual groups by using Q & A, particularly where they are having difficulties • When all the groups have finished, facilitate a discussion in plenary on key lessons learnt (there is no need for groups to make any presentations) • Finally, give participants a copy of Handout 32, which illustrates the correct answers to the card sorting game. **Trainers' Note:** *The cards for the game need to be prepared before hand. Print the pages of Handout 21 onto coloured card. Cut the statements from the "Terms" and "Definitions, Concepts and related information" columns into separate pieces, mix them up and put them into envelopes. Make as many sets as the number of groups of participants you plan to have.*	Presentation 2.2a Slide 9 Activity Sheet 32 Sets of cards with *Terms & Definitions* Handout 32

Training Methods	Content	Materials

Presentation with discussion 	Describe the key concepts and definitions covered in the previous activity, ensuring that all participants have a clear understanding of these. This section serves to sum up Key Points raised during the previous activity.
	To stimulate discussion ask questions like:
	What does 'basic access' mean?
	What are the features of RTI?
	
	Key Points:
	
	- RTI Network
	- Basic access – what this means
	- Basic access infrastructure
	- Basic access intervention
	- Features of RTI
	  - ✓ physical
	  - ✓ traffic characteristics
	  - ✓ ownership
	  - ✓ managing and financing
		Presentation 2.2a
		Slides 11 - 17

4. Designing RTI for Basic Access

Training Methods	Content	Materials
	Trainers' Note *This section explores the key aspects of designing RTI for Basic Access. There are seven key aspects:* *1. Drainage* *2. Roughness* *3. The (trouble) Spot Improvement Approach* *4. Staged construction – NOT recommended for RTI* *5. Engineering design* *6. Implementation methods* *7. Maintenance* This part of the session is split into two sections: - The first three aspects are explored using Presentation 2.2a, after which there is a group activity - The second section explores the remaining four aspects, once again using Presentation 2.2a.	

Training Methods	Content	Materials
Presentation with discussion 	**Drainage, roughness, spot improvement** Facilitate a discussion on the core concepts and definitions for the following points. Ask questions like: Why is it important to make provision for drainage when designing RTI? What is the 'spot improvement' approach? **Key Points:** • Drainage – the importance of making provision for surface drainage and dealing with rivers • Roughness – with speed, are not normally important design parameters for basic access RTI, but must not be too rough • The (trouble) spot improvement approach – an appropriate approach for RTI, provide low cost solutions, can produce cost savings of 50 – 90% over the costs of making a full improvement over the entire stretch of road. • The Kenya 2000 Programme provides an example of a successful Spot Improvement and Labour Based approach.	Presentation 2.2a Slides 18 - 32

Training Methods	Content	Materials
Group Discussion 	**Experiences of Spot improvement and Labour-based approaches** The purpose of this activity is to draw on the experiences using Spot Improvement and Labour Based Approaches in other countries with which participants are familiar. The aim is to compare the different ways in which these approaches have been applied, draw on key lessons learnt, make recommendations and to share experiences. - Divide the participants into small groups, and give them Activity Sheet 33 - Ask participants to discuss: *What are the experiences of Spot Improvement and Labour Based Approaches in other countries?* - Ask the groups to prepare their findings on a flip chart and to elect a person to present the findings - Each group presents their findings to the plenary - Facilitate a discussion on the findings and draw out the key learning points. **<u>Trainers' Note</u>** *If the participants are from several countries then they may be divided into groups according to the country with which they are familiar.* *There are no right and wrong answers here. Encourage participants to consider a range of issues, particularly how spot improvement and labour-based approaches fit into the broader context of RTI. Explore social and economic issues such as the potential for employment and income generation from labour-based approaches.*	Presentation 2.2a Slide 33 Activity Sheet 33

Training Methods	*Content*	*Materials*
Presentation with Discussion 	**Staged construction, engineering design, implementation methods, maintenance** Present the second section of this session, which explores the remaining four aspects of designing RTI for Basic Access. Facilitate discussion and debate on specific aspects. Ask question like: What does 'staged construction' mean? What types of implementation methods for RTI do you know of? What are the principle maintenance issues? **Key Points:** Staged construction ✓ nOT recommended for RTI, ✓ costly, may be made for future upgrading needs in response to traffic growth, ✓ but unlikely to be needed for RTI where traffic levels are low ✓ needs economic justification Engineering design ✓ basic Access RTI must resist weather & traffic and produce a maintainable and sustainable asset ✓ considerations: traffic, road safety, environmental and social impact mitigation Implementation methods ✓ labour-based technology ✓ small scale contractor development ✓ community contracting Maintenance ✓ major issues = financial and institutional ✓ insufficient capacity ✓ engineering tradeoffs for maintenance: periodic – routine - recurrent	Presentation 2.2a Slides 34 - 59

Training Methods	Content	Materials
Presentation 	**Concluding Remarks** Conclude this part of the session with the key lessons learnt: **Key Points:** - Rural transport interventions must be an integral part of development strategies to combat poverty - Greater impact on rural access is achieved if RTI interventions are designed in a least-cost, network-based manner focusing on eliminating trouble spots - The (trouble) spot improvement approach is the key to the least-cost design cost savings of 50 – 90% - Labour-based approaches are best-suited for the implementation of RTI interventions	Presentation 2.2a Slide 60

Part 2

5. Indonesian Case Study

Training Methods	*Content*	*Materials*
Presentation 	**5.1 Introduction** Introduce the second part of this session explaining the objectives with a brief overview of the topics to be covered. The second part of this session is based on a case study from Flores in Indonesia. The case study examines the various aspects of self help initiatives in road construction including pre-conditions, supporting measures, sustainability and costs. Potentials and limitations of self help approaches in developing countries are explored. Recommendations for implementing self-help road projects for low volume roads are drawn from the Flores experience. During this part of the session participants draw on their own experiences of self-help initiatives and reflect on lessons that may be learnt from the results of the Flores project. ***Continued…***	Presentation 2.2b Slides 1 - 3

Training Methods	*Content*	*Materials*
	Key Points: **Session Overview Part 2** - Background to the case study on Flores Island - Results of the Flores project - Analysis of key issues with self-help initiatives for low volume road construction - Experiences from Flores	

Training Methods	Content	Materials
Presentation 	**5.2 Background to the case study on Flores island** Present the first part of the Flores case study, explaining the background to the project, and progress over a four year period. **Key Points**: • Location of Flores island, in East Indonesian Province of Nusa Tenggara Timur (NTT) • The use of 'gotong-royong' a tradition of self-help • Support provided by INTERCOOPERATION and the Catholic Church of Manggarai since 1985 • A new initiative started in 1994 involving training, and technical and financial assistance • Results after 4 years includes; ✓ 85 km of road, rehabilitation of previous alignments – increasing the road length affected to 250 km ✓ recognition by local leaders of the need for proper survey and construction methods ✓ lower costs ✓ increased traffic flow ✓ expansion of services	Presentation 2.2b Slides 4 - 8

Training Methods	Content	Materials
Case Study Activity 	**5.3 Analysis of the key issues for self-help initiatives** The purpose of this activity is to analyse the key factors affecting the successful development and implementation of self-help initiatives of communities for building roads and tracks. This activity also explores policy and strategy issues, as well as the potential and limitations of these types of projects. During this activity participants are asked to draw on their experiences of self-help initiatives for building and maintaining roads and tracks. - Divide participants into groups of 3 or 4 and give each group a copy of Activity Sheet 34. - Ask the groups to discuss the questions listed: A. *What are the pre-conditions necessary for developing self-help initiatives for road construction?* B. *What are the potentials and limitations of self-help road projects?* C. *What are the key policy, strategy and economic factors that need to be considered?* - Ask the groups to prepare their findings on flip chart. - Ask the groups to hang their flip chart up on the walls around the room as a 'roving gallery', and ask people to walk round and read each others comments. - Facilitate a discussion on the findings and draw out the key learning points. The key learning points are discussed in detail below.	Presentation 2.2b Slides 9 - 10 Activity Sheet 34 Flip chart, pens

Training Methods	Content	Materials
Presentation 	**5.4 Experiences from Flores** Present the experiences of the Flores project, building on the key learning points and issues raised in the previous activity. **Key Points:** **Pre-conditions necessary for successful self-help initiatives** ✓ village internal factors ✓ village external factors ✓ reflections **Key policy, strategy and economic factors** ✓ the need to increase the social sustainability of transport and policy reform to address poverty ✓ focus on 'needs for access' rather than 'needs for mobility' ✓ develop low-cost roads for remote communities ✓ adopt 'phased development' ✓ 'efficient response to effective demand' ✓ invest in projects that give the highest return **Potentials and Limitations** ✓ there is great potential where it is impossible for governments to meet major needs for motorized access in the foreseeable future ✓ comparisons between self-help achievements and conventional road construction and the existing road network are misleading ✓ self-help initiatives vary with the kind and degree of available external support ***Continued…***	Presentation 2.2b Slides 11 - 25

Training Methods	Content	Materials
	…Continued: **Recommendations for road projects** ✓ low-cost, labour-intensive road projects can support self-help initiatives. ✓ if pre-conditions are favourable - supporting measures, such as training, development and disseminate appropriate low-cost solutions to frequent infrastructure problems, inclusion of village representatives in project-internal training, provide technical advice to the villages' own road projects checking and correcting planned alignments, supply or lend tools. ✓ if pre-conditions for self-help support are sufficient in a country/region – then set up projects designed to promote self-help in road construction.	
	Summary of Session 2.2 Conclude this session by reviewing the issues explored and the key lessons learnt, highlighting areas that may need further investigation or discussion.	