Module 2:
Planning, Design, Appraisal and Implementation

Part 1
Rural road economic appraisal methodology
Part 2
a) Core sector indicators
b) Case study from Andhra Pradesh, India

SESSION 2.3

SSATP
Africa Transport
Policy Program

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

Session Objectives	By the end of the session participants will be able to:
	
	 Technical Paper
	 • Analyse the role of economic appraisal methods to establish priorities for RTI interventions
	 • Describe how to carry out screening and ranking using a variety of methods
	      ▪ targeting poor communities and eliminating low priority links from consideration for investment
	      ▪ multi-criteria analysis (MCA), cost-effectiveness analysis (CEA), cost-benefit analysis (CBA)
	 • Explain how to extend the CBA framework for RTI
	
	 Case study # 1
	 • Describe core sector indicators that may be used to used to monitor results in the road sector
	 • Explain the key definitions used within the indicators
	 • Analyse lessons learnt from the case study and consider how these may apply to their own project work
	
	 Case study #2
	 • Describe key indicators that may be used to assess the potential impact of road improvements
	 • Explain how the CBA and CEA methods were used in the case study
	 • Analyse the components of the spreadsheet CBA programme
	 • Identify lessons learnt from the case study and how these may apply to their own project work

Rural Transport Knowledge Base materials used with this session	**Rural Road Economic Appraisal Methodology** Based on: Design and Appraisal of Rural Transport Infrastructure, by Jerry Lebo and Dieter Schelling, The World Bank **Economic Analysis of a Rural Basic Access Road Project** Based on: Case Study from Andhra Pradesh, India By Liu Z, The World Bank (2000) **Rural Access Index: A Key Development Indicator.** Roberts, Peter, Shyam KC, and Cordula Rastogi. March 2006. Transport Papers (TP-10). World Bank. (PDF 375 KB)

Training Materials	Presentations 2.3a Rural Road Economic Appraisal Methodology 2.3b (#1) Core Sector Indicators and Definitions for Roads 2.3b (#2) Economic Analysis of a Rural Basic Access Road Project. Case Study from Andhra Pradesh, India <u>Activity Sheets</u> 35 Advantages and problems with poverty-based screening 36 Assessing the cost of interrupted access 37 Defining and measuring indicators 38 Impact of road improvements

Structure of Session 2.3

Key Topics	Training Methods
Part 1	
1. Introduction	**Presentation**
2. Rationale for economic appraisal	**Q & A** **Presentation**
3. Participatory planning approach	**Presentation** **Presentation with discussion**
4. Screening	**Group Activity**
5. Ranking methods	**Q & A** **Presentation with discussion**
6. Extending the CBA framework for RTI	**Group Activity** **Presentation with discussion**
Part 2	
7. Case Study #1 7.1 Introduction to case study #1 7.2 Definitions 7.3 Core sector indicators 7.4 Concluding remarks	**Q & A, Presentation** **Presentation with discussion**
8. Case Study #2 (Andhra Pradesh) 8.1 Introduction to case study #2 8.2 The Rationale for using CEA and CBA in Andhra Pradesh 8.3 Project background 8.4 Village and household transport Survey 8.5 The Spreadsheet CBA Programme 8.6 Key Lessons Learnt	 **Q & A, Presentation** **Presentation** **Case Study Activity** **Presentation & Discussion** **Presentation**
Summary of session 2.3	

Trainers' Summary

This session is divided into two parts:

Part 1 is based on the Technical Paper: Rural Road Economic Appraisal Methodology

Part 2 is based on two Case Studies:

#1 Core Sector Indicators and Definitions of Roads

2 Economic Analysis of a Rural Basic Access Road Project, Andhra Pradesh

Case studies # 2 is from the framework paper: -

Rural Transport – Improving its contribution to Growth and Poverty Reduction in Sub-Saharan Africa. SSATP Working Paper Number 93

By Banjo, Gordon and Riverson (November 2012).

Appendix D1.

Session 2.3   Trainers' Notes

Part 1	1. Introduction	

Training Methods	Content	Materials
Presentation	Introduce the first part of session by explaining the learning objectives and session structure. The first part of this session is based on the technical paper: Rural Road Economic Appraisal Methodology. This session explores various ways of carrying out economic appraisal as part of the process of prioritising RTI interventions. The role of conventional approaches such as Cost Benefit Analysis are explored as well as ways in which this and other methods may be adapted for low-volume roads of below 50 vehicles per day (VPD). **Overview of the first part of the session** **Key Points:** ◎ Rationale for economic appraisal ◎ Participatory planning approach ◎ Screening ◎ Ranking ◎ Extending the CBA Framework for RTI	Presentation 2.3a Slides 1-3

2. Rationale for economic appraisal

Training Methods	Content	Materials
Q & A	◎ Facilitate a discussion on the rationale for carrying out economic appraisal of *Basic Access* / RTI. Begin the discussion by asking: *What issues should be analysed when carrying out a project appraisal for a basic access intervention?* ◎ Note the points made by participants in flip chart. The key learning points are discussed below.	Flip chart pens
Presentation	Explain the rationale for carrying out economic appraisals of RTI. **Key Points:** ◎ The provision of motorable basic access roads (below 50 VPD) is constrained by available resources especially maintenance and capital budgets ◎ Affordability depends on the local population's capacity to maintain their own basic access infrastructure over the long term ◎ A basic access intervention is the **least-cost** (total life-cycle cost) intervention for ensuring **reliable**, **all-season passability** for the local means of transport *Continued…*	Presentation 2.3a Slides 4 - 6

Training Methods	Content	Materials
	…Continued ◎ A series of issues need to be analysed and assessed, including social, institutional, financial, economic, technical, environmental. ◎ Determining affordability depends on the complex relationship between local capacity, skills, income, population density, geographic conditions, political will. ◎ Basic Access sees local communities as the main stakeholders whose participation is essential.	

3. Participatory Planning Approach

Training Methods	Content	Materials

Presentation	**Overview of Appraisal Methods**
	
	Introduce the range of appraisal methods that will be explored in the following sections.
	
	Key Points:
	
	◎ Participatory Planning Approach
	
	◎ Screening
	
	◎ Ranking
	
	   ✓ multi-criteria analysis (MCA)
	   ✓ cost-effectiveness analysis (CEA)
	   ✓ cost-benefit analysis (CBA)
	
	◎ Extending the CBA Framework for RTI
		Presentation 2.3a Slide 7

Training Methods	Content	Materials

Presentation with discussion	**Participatory Planning Approach: overview**
	
	This section explores the role of participation in planning of basic access, the use of the 'as is' plan and the argument for including economic issues in the selection process.
	
	Facilitate a discussion on the following Key Points, using the presentation. Ask questions like:
	Why is a participatory approach needed for RTOI development?
	What is an 'as is' plan? How may it be used for RTI development?
	
	Key Points:
	
	◎ The need for a participatory approach for developing RTI within the context of a decentralised framework. Approach need to be iterative and both 'bottom up' and 'top down'
	
	◎ The "as is" plan is a key tool
	  ✓ describes the current situation
	  ✓ involves obtaining information that reflects the condition of the road network in relation to the needs of the local community
	  ✓ developed by stakeholders and engineers
	  ✓ involving a low-cost inventory and condition survey
	  ✓ and social and economic information
	
	◎ However, participation cannot replace the **economic** selection process because of the tendency for a 'wish list' phenomenon, and the fact that available resources are limited
	  ✓ the 'wish list' refers to a situation where the community is not constrained by the limitations imposed by the planning authority e.g. financial
		Presentation 2.3a Slides 8-9

Rural Transport Knowledge Base. Trainers' Notes. Module 2. Session 2.3

10

4. Screening

Training Methods	Content	Materials

Presentation	This section explores two approaches that may be used for screening potential RTI investments and draws on experiences of a case study from China.
	
	Explain the key concepts of screening.
	
	Key Points:
	
	◎ Screening decreases the number of investment alternatives given budgetary constraints
	
	◎ Screening may be carried out by:
	  ✓ targeting poor and disadvantaged communities
	  ✓ eliminating low priority links of the network
	
	◎ In China the Road Improvement for Poverty Alleviation (RIPA) was used
		Presentation 2.3a
		Slides 10 - 14

Rural Transport Knowledge Base. Trainers' Notes. Module 2. Session 2.3

11

Training Methods	Content	Materials
Group Discussion	The following activity examines the experiences of *screening* methods used in China, and the key lessons that may be learnt and applied to other regions. Participants may draw on the experiences from the countries in which they are working.	Presentation 2.3a Slide 15
	⊚ Divide participants into groups of 3 or 4, and give them Activity Sheets 35 (*see Trainers' Note below*).	Activity Sheet 35
	⊚ Ask participants to discuss:	Flip chart, pens
	Based on the experiences from China: what are the advantages and potential problems with poverty-based pre-screening?	
	⊚ Ask the groups to prepare their findings on flip chart and to elect a person to present the finding.	
	⊚ Each group presents their findings to the plenary.	
	⊚ Facilitate a discussion on the findings and draw out the key learning points (*see Trainers' Note*).	
	Trainers' Note:	
	1. *This exercise may be carried out for a particular country with which participants are familiar. If participants are from different countries then they should work in the same country-groups. This may provide an interesting comparison between countries.*	
	2. *The key learning points from this activity should draw on the information covered in the previous section. In particular participants should explore social, economic and institutional issues, and focus on the potential impact on the poor.*	

5. Ranking

Training Methods	Content	Materials
Question & Answer	This section explores the various methods available for ranking investments in RTI. ◎ Begin the section by exploring the range of different options using Q & A. Facilitate a discussion by asking: *What methods do you know of that may be used to rank various intervention options for RTI?* ◎ Note the points made by participants on the flip chart. Key learning points will be discussed below.	Flip chart pens
Presentation	Summarise the main ranking methods mentioned above and those covered in the presentation slide. **Key Points:** ◎ Multi-criteria Analysis (MCA) ◎ Cost-effectiveness Analysis (CEA) ◎ Cost- benefit Analysis (CBA)	Presentation 2.3a Slide 16

Rural Transport Knowledge Base. Trainers' Notes. Module 2. Session 2.3

13

Training Methods	Content	Materials
Presentation with Discussion	Using a combination of Q & A and presentation, examine each of the ranking methods in detail. To stimulate debate ask questions like: What is Multi-criteria Analysis (MCA)? What is Cost-effectiveness Analysis (CEA)? How may CEA be used to rank potential road interventions? How may Cost- benefit Analysis (CBA) be used to rank potential road interventions? **Key Points:** ◎ **Multi-criteria Analysis (MCA)** ✓ criteria and weighting ✓ potential of MCA as a participatory planning tool ◎ **Cost-effectiveness Analysis (CEA)** ✓ a Subset of MCA ✓ only used more recently in the transport sector ✓ conditions for use of CEA ✓ there are no thresholds for CEA – the criteria for determining opportunity cost is left to policy makers ✓ use sample studies to indicate economic viability ✓ use CBA to complement CEA *Continued…*	Presentation 2.3a Slides 17 - 34

Training Methods	Content	Materials
	...Continued	
	◎ **Cost- benefit Analysis (CBA)**	
	✓ accounts for all real costs associated with the roads project	
	✓ outcome of CBA permits ranking of alternative interventions based on Net Present Value (NPV)	
	✓ the benefit from cost savings for transport users can be considered using: *Producer Surplus Methods*, or *Consumer Surplus Methods*	
	✓ if traffic levels are between 50 - 200 VPD a customised *Consumer Surplus* approach can be used, called the Roads Economic Decision Model (RED)	
	✓ but! the *consumer surplus approach* is NOT recommended for roads with traffic volumes below 50 VPD, because the main benefits are not from savings in vehicle operating costs.	

Rural Transport Knowledge Base. Trainers' Notes. Module 2. Session 2.3

15

6. Extending the CBA Framework for RTI

Training Methods	Content	Materials
Presentation	This section explores ways in which the Cost Benefit Analysis (CBA) method can be modified to make it more applicable to the unique conditions of RTI and low-volume roads. Introduce the concepts for extending the CBA for low-volume roads and outline the enhancements that can be made to CBA. **Key Points:** ◎ Principles of CBA remain the same. ◎ Use enhanced methods of CBA to carry out an analysis for pilot or sample projects, and use this to supplement CEA. ◎ Enhancements of CBA include: 1) better assessment of the cost of interrupted access 2) estimating operating cost savings of NMT 3) savings due to mode changes (from NMT to motorized transport) 4) improved valuation of time savings 5) valuation of social benefits from improved access to schools and health centres. **1) Better assessment of the cost of interrupted access** ✓ explore a range of factors: passability during the rainy season, seasonal changes in transport quality, collect data in a participatory way, examine costs of alternative and substitute routes. *Continued…*	Presentation 2.3a Slides 35 - 38

Training Methods	Content	Materials
Group Activity	**…Continued:**	Presentation 2.3a Slide 39
	2) Estimating operating cost savings of NMT	
	The purpose of this activity is to draw on the experiences of rickshaw operators in Bangladesh to explore ways of estimating true operating cost savings of NMT.	Activity Sheet 36
	◎ Divide participants into small groups of 4 or 5, and hand out Activity Sheet 36	Flip chart, pens
	◎ Ask participants to explore the issues related to assessing the costs of interrupted access by discussing the following questions:	
	1. *Explain the rationale for road investment in black-topping (asphalt) even though the VPD is less than 50.* 2. *What are the true operating costs for rickshaw operators?* 3. *How are with- and without- project costs best estimated? Why?*	
	◎ Ask participants to write their findings on flip chart, elect a presenter and prepare to feedback to the plenary.	
	◎ Ask each group to present their findings to the plenary, and facilitate a discussion on the Key Points raised.	

Rural Transport Knowledge Base. Trainers' Notes. Module 2. Session 2.3

17

Training Methods	Content	Materials
Presentation	Summarise the Key Points raised during the above activity using the presentation, highlighting important recommendations: **Key Points:** ◎ For project analysis use charges made by the rickshaw-van operators on different types of road conditions ◎ Human-pulled vehicles need a smooth surface more than motorise vehicles	Presentation 2.3a Slide 40

Training Methods	Content	Materials

Presentation with Discussion	Finnish the section by facilitating a discussion on the other three ways in which CBA methods can be enhanced.
	Ask questions like:
	How may savings in journey time be measured?
	How may potential social benefits be measured?
	
	Key Points
	
	3) **Savings due to mode changes (from NMT to motorized transport)**
	  ✓ based on studies in Ghana and elsewhere cost reductions can be ten fold where transport can replace head loading
	  ✓ cost savings are based on minimum wage rates and truck operating costs
	
	4) **Improved valuation of time savings**
	  ✓ it is critical to understand the impact of improvements in infrastructure on journey times and therefore on productive time saved
	  ✓ valuing time in transport operations is controversial! And there is currently no universally accepted methods for determining a "value of time"
	  ✓ general guidelines: use measurements of journey time that are applicable to rural households that are predominately self employed, and takes into account their modes of transport.
	  ✓ conventional ways of valuing journey time savings are not appropriate
	
	5) **Valuation of social benefits from improved access to schools and health centres.**
	  ✓ include benefits such as health, social, improved access to markets, increased labour mobility, promotion of education for girls because of easier access to schools, spread of information and knowledge.
		Presentation 2.3a
		Slides 41 - 53

Training Methods	Content	Materials
Presentation	**Concluding Remarks** Conclude the first part of this session by highlighting the key lessons learnt.	Presentation 2.3a Slides 54 - 55

Rural Transport Knowledge Base. Trainers' Notes. Module 2. Session 2.3

20

7. Case Study # 1 - Core Sector Indicators

Training Methods	Content	Materials
Presentation	**7.1 Introduction** Introduce the first case study of the second part of this session by explaining the learning objectives and provide a brief overview of the topics to be covered. This part of the session focuses on outlining the core indicators that have been identified by the World Bank that enable country monitoring of road sector project results. Although interest is in rural roads, the indicators are set to ensure that rural roads are planned in the context of the overall road network. A rural road agency may actually collect and store the specific information applicable to roads defined as "rural" only. The central roads agency will store, collate and compare the information covering the overall network. This case study provides participants with the opportunity to reflect on lesson learnt particularly on how data is collected and managed in their specific country context. **Overview of case study #1 session** **Key Points** ◎ Core indicators as identified by the World Bank ◎ Main definitions to provide guidance on use of the indicators ◎ Key lessons	Presentation 2.3b (#1) Slides 1 - 4

Training Methods	Content	Materials
Presentation 	Introduce the core sector indicators and the rational for these. **Key Points** ◎ The four indicators are: - ▪ Roads constructed ▪ Roads rehabilitated ▪ Roads in good and fair condition ▪ Rural Access Index (RAI) ◎ Rural road projects aimed at improving basic road accessibility from villages to markets & social services are also expected to provide social benefits. ◎ Most rural access roads have low-traffic volumes, but cost-benefit analysis that quantifies road-user benefits as VOC and travel time cost (TTC) savings is unsuitable for evaluating rural basic access road projects for financing. ◎ Alternative methods are needed.	Presentation 2.3b (#1) Slide 5
	Trainers Note _This session could begin with a brief review of Economics of Transport Investment Appraisal if participants do not have a background in transport economics._	

Training Methods	Content	Materials
Group Activity	The purpose of this activity is to explore the definitions of the indicators and what they measure, based on participants own experiences. ◎ Divide participants into four groups and give each group a copy of Activity Sheet 37. ◎ Allocate one question to each group: Group1: *What does the indicator "roads constructed" measure? How are "rural" and "non-rural" roads defined?* Group 2: *What does the indicator "roads rehabilitated" measure? How are "rural" and "non-rural" roads defined?* Group 3: *What does the indicator "roads in good and fair condition" measure? How is "condition of the road" defined?* Group 4: *What does the indicator "RAI" measure? Define "access to all season roads".* ◎ Ask the groups to prepare their findings on flip chart and to elect a person to present the finding. ◎ Each group presents their findings to the plenary. ◎ Facilitate a discussion on the findings and draw out the key learning points. The key learning points are expanded on below.	Presentation 2.3b (#1) Slide 6 Activity Sheet 37

Rural Transport Knowledge Base. Trainers' Notes. Module 2. Session 2.3

23

Training Methods	Content	Materials
Presentation	## 7.3 Key Definitions Explain the definitions of the four core indicators. Note that "Roads constructed" and "Roads rehabilitated" are explained together. **ROADS CONSTRUCTED AND REHABILITATED** These indicators measure the number of Kms of rural roads constructed and rehabilitated under a given project. **Key points:** ◎ Rural Roads- are roads functionally classified below trunk or primary, secondary or link roads. ◎ Non-rural roads- are roads functionally classified as trunk or primary, secondary or link roads. Typically non-rural roads connect urban centres to each other or higher order roads. **ROADS IN GOOD AND FAIR CONDITION** This indicator measures the percentage of the total classified road network that is in good or fair condition, depending on the road surface and the level of roughness. **Key points:** ◎ Size of the total classified network- it is necessary to indicate the size of the total classified network. In general, classified roads are those roads that have been included in the roads legislation as public roads *Continued…*	Presentation 2.3b (#1) Slides 6 - 11

Rural Transport Knowledge Base. Trainers' Notes. Module 2. Session 2.3

24

Training Methods	Content	Materials
	… Continued	
	◎ Good and fair condition - this is generally based on the roughness of the road surface. The standard method for identifying roughness is the International Roughness Index (IRI). International Roughness Index (IRI) is the roughness index most commonly obtained from measured longitudinal road profiles. It is calculated using a quarter-car vehicle mathematical model, the response is accumulated to yield a roughness index with units of slope (in/mi, m/km, etc.). Since its introduction in 1986, IRI has become the road roughness index most commonly used worldwide for evaluating and managing road systems.	
	◎ Roughness tolerance can vary according to surface type- concrete, asphalt, gravel, surface treatment (e.g. Otta Seal) and earth etc.	
	THE RURAL ACCESS INDEX (RAI).	
	Explain the background to and define RAI.	
	Key points:	
	◎ Physical isolation is a strong contributor to poverty. Populations without reliable access to social and economic services are poorer than those with reliable access. Problems of access are particularly severe in those rural areas that are distant from roads that carry motorised transport services on a regular basis.	
	Continued…	

Rural Transport Knowledge Base. Trainers' Notes. Module 2. Session 2.3

25

Training Methods	Content	Materials
	… Continued	
	◎ Transport is not specifically identified in Millennium Development Goal targets, but it makes key contributions to achieving many of the Goals—underpinning pro-poor growth and improving social inclusion. Many surveys have shown that poor people recognise isolation as a major contributor to their poverty and marginalisation (Roberts, et. al. World Bank, 2006). In practice, improving access to transport for rural men and women in low income countries is considered essential to promote rural development, to increase uptake of human development services (educational and health), to facilitate inclusion of different ethnic and other groups, to improve employment opportunities, and to stimulate growth for poverty reduction.	
	◎ This is also known as the Rural Access Index (RAI).	
	◎ The RAI is an important transport indicator which highlights the critical role of access and mobility in reducing poverty in poor countries. The Rural Access Index provides a consistent basis for estimating the proportion of the rural population that has adequate access to the transport system. It can help to inform policies and strategies which ensure that the rewards of development are distributed more equitably to the rural population.	
	◎ This indicator is basically the proportion of rural people who live within 2kms (typically equivalent to a 20-minute walk) of an all-season road.	
	Continued…	

Rural Transport Knowledge Base. Trainers' Notes. Module 2. Session 2.3

26

Training Methods	Content	Materials
	… Continued The definition of 'rural' should follow that officially used in the country. An all-season road is a road that is motorable all year by the prevailing means of rural transport (often a pick-up or a truck, which does not have 4-wheel drive). Ascertaining population within 2km- there are three main approaches: ◎ Using mapping geo-referenced population to determine how many people live within 2kms of the classified road network. Limitations relate to assumptions on the passability of the classified network as well as the absence of a non-classified network ◎ Extrapolating based on sampling- physical data on population and road length (km) generated in formal surveys are used to extrapolate the index. ◎ Using partial spatial estimation- the index is physically measured in a sample of rural areas through geo-referencing of all roads and villages. Limitations come from possible lack of robustness of the sampling process.	

Rural Transport Knowledge Base. Trainers' Notes. Module 2. Session 2.3

27

Training Methods	Content	Materials
Question & Answer *ANSWERS*	## 7.4 Concluding Remarks – Key Lessons Using Q & A discuss the benefits and challenges with using these core indicators to monitor road sector results in various country contexts. Facilitate a discussion by asking: A. How does the categorisation of rural and non-rural work as a means of definition? B. What are the parameters used in different country contexts for good, fair and poor road condition? C. What challenges might be faced in identifying the share of the population with/without access to an all-season road?	Flip chart, pens Presentation 2.3b (#1) Slide 12

8. Case Study # 2 - Andhra Pradesh, India

Training Methods	Content	Materials
Presentation	**8.1 Introduction** Introduce the second part of this session explaining the objectives and provide a brief overview of the topics to be covered. This part of the session focuses on the experiences of a project in India that made use of CBA and CEA methods. The project used these methods to assist in the selection of potential road works for financing: both black-topping and basic accessibility. The application of CEA was supported by a household study on the likely impact of road improvement on the welfare of village communities affected by the project. This case study provides participants with the opportunity to reflect on lesson learnt particularly on the use of cost-effectiveness analysis, identifying indicators of potential impact and type of data that needs to be collected. **Overview of case study # 2 session** **Key Points** ◎ The rationale for using CEA and CBA in Andhra Pradesh ◎ Project background and overview of economic analysis ◎ Village and household transport survey results ◎ The spreadsheet CBA programme ◎ Key lessons learnt	Presentation 2.3b (#2) Slides 1 - 3

Training Methods	Content	Materials
Question & Answer	### 8.2 The Rationale for using CEA and CBA in Andhra Pradesh Using Q & A explore the arguments for selecting CEA and CBA in any road improvement project. ◎ Begin the discussion by asking: *What are the reasons for using cost-effectiveness analysis (CEA) when trying to decide which road works a project should support financially?* ◎ Note the points made by participants on flip chart. The key learning points are discussed below. **<u>Trainers' Note</u>** *At the beginning of this session ensure that all participants know what CBA and CEA are. Carry out a brief recap.*	Flip chart, pens
Presentation	Summarise the points made above using the presentation slides. **Key Points** ◎ Rural road projects aimed at improving basic road accessibility from villages to markets & social services are also expected to provide social benefits. ◎ Most rural access roads have low-traffic volumes, but cost-benefit analysis that quantifies road-user benefits as VOC and travel time cost (TTC) savings is unsuitable for evaluating rural basic access road projects for financing. ◎ Alternative methods are needed.	Presentation 2.3b (#2) Slides 4 - 5

Rural Transport Knowledge Base. Trainers' Notes. Module 2. Session 2.3

30

Training Methods	Content	Materials
Presentation	### 8.3 Project background Explain the background of the project. **Key Points** ◎ Locations and population 68 million ◎ Existing road networks of 15,000 km ◎ Dilemma: demand for network investment greatly exceeds the project budget. The key to maximising investment is to focus on the improvement of a **core network** ◎ Two major categories of road to be assessed: basic accessibility works, and black-topping ◎ Project used CBA and CEA methodologies, which provided a list of potential road works ranked by cost effectiveness and EER	Presentation 2.3b (#2) Slides 6 -13

Rural Transport Knowledge Base. Trainers' Notes. Module 2. Session 2.3

31

Training Methods	Content	Materials

Case Study activity in groups	## 8.4 Village and household transport survey
	
	The purpose of this activity is to examine problems faced by villages which are isolated from major roads, and explore indicators - particularly economic and social - for measuring the potential impact of road improvement projects.
	
	During this activity participants are asked to draw on their experiences of designing indicators.
	
	◎ Divide participants into small groups and give each group a copy of Activity Sheet 38
	
	◎ Ask the groups to discuss:
	
	  1. *What are the problems faced by villages not connected by an all-weather access road to a major road or market centre?*
	
	  2. *What social and economic indicators can be used to assess the expected impact from the improvement of roads?*
	
	◎ Ask the groups to prepare their findings on flip chart and to elect a person to present the finding.
	
	◎ Each group presents their findings to the plenary.
	
	◎ Facilitate a discussion on the findings and draw out the key learning points. The key learning points are expanded on below.
		Presentation 2.3b (#2) Slides 14 - 15
		
		Flip chart, pens
		
		Activity sheet 38

Presentation	Summarise the experiences from the Andhra Pradesh project using the presentation slides.	Presentation 2.3b (#2) Slides 16 - 18

Training Methods	Content	Materials
Presentation	## 8.5 The spreadsheet CBA programme Handout copies of the full case study and ask participants to refer to Table E.1.3 on the last page. Use this with the presentation slides to explain how the spreadsheet CBA programme works. **Key Points** ◎ **The program consists of five panels** ✓ Panel 1: record the road data and economic input parameters ✓ Panel 2: contains engineering unit cost data obtained from the field ✓ Panel 3: estimated unit vehicle operating costs (VOC) and travel speeds by both road type and vehicle type. ✓ Panel 4: calculates savings in VOC and value of travel time (VOT) for the users of each mode of transport ✓ Panel 5: calculates the economic cost and benefit streams over the project life, the net present value (NPV), and the ERR	Presentation 2.3b (#2) Slides 19 - 20

Training Methods	Content	Materials
Presentation	### 8.6 Key lessons learnt Conclude this part of the session by summarising the key lessons that have been learnt from the Andhra Pradesh case study.	Presentation 2.3b (#2) Slides 21 - 22
	### Summary of Session 2.3 Conclude this session by reviewing the issues explored and the key lessons learnt, highlighting areas that may need further investigation or discussion.	

Rural Transport Knowledge Base. Trainers' Notes. Module 2. Session 2.3

34