



**Trainers' Notes**  
Rural Transport Training Materials

# Module 5: Social and Environmental Issues

## Part 1

Environmental impact assessment and management

## Part 2

Environmental impact assessment Case Study South Africa

### SESSION 5.4



**SSATP**  
Africa Transport  
Policy Program

<p><b>Session Objectives</b></p>	<p>By the end of the session participants will be able to:</p> <p><b>Technical Paper</b></p> <ul style="list-style-type: none"> <li>● Explain how environmental impact assessments (EIAs) are carried out</li> <li>● Describe on the environmental impacts associated with rural transport</li> <li>● Analyse how EIAs are applied to the planning and management of RTI</li> </ul> <p><b>Case study</b></p> <ul style="list-style-type: none"> <li>● Explain South Africa's EIA system in design and practice</li> <li>● Critique the environmental costs and benefits of a specific road project</li> <li>● Describe the role of participation in environmental decision making</li> <li>● Analyse the key lessons learnt and how they might be applied to other settings</li> </ul>
<p><b>Rural Transport Knowledge Base materials used with this session</b></p>	<p>Environmental impact assessment and management  <b>Edited by:</b> P. Fouracre, TRL Limited</p> <p>Environmental impact assessment case study Mkuze river crossing to Phelendaba, South Africa  <b>By:</b> R. Miller and S. le Hanie (1999)</p>
<p><b>Training Materials</b></p>	<p><u>Presentations</u></p> <p>5.4a Environmental impact assessment and management.</p> <p>5.4b Environmental impact assessment case study  Mkuze river crossing to Phelendaba, South Africa</p> <p><u>Activity Sheets</u></p> <p>80 Environmental impacts of rural roads</p> <p>81 Weighing the evidence: which road alignment should be selected?</p>

Key Topics	Training Methods
Part 1	
1. Introduction	Presentation
2. Background	Q & A Presentation
3. Mainstreaming EIAs	Presentation
4. The EIA process	Ideas Gathering Presentation with discussion
5. Environmental appraisal checklists	Q & A Presentation with discussion
6. Environmental impact of rural transport development	Group discussion Presentation with discussion
Part 2	
7. Case study: South Africa	
7.1 Introduction	Presentations
7.2 Background & South African EIA regulations	
7.3 Background and context to the proposed development	
7.4 Environmental Issues	Case study activity Presentation
7.5 Conclusions of EIA	
Summary of session 5.4	

### Trainers' Summary

**This session is divided into two parts:**







**Part 1** is based on the technical paper: Environmental impact assessment and management

**Part 2** is based on the case study: Environmental impact assessment case study Mkuze river crossing to Phelendaba, South Africa



## Session 5.4 Trainers Notes

### Part 1





## 1. Introduction

<i>Training Methods</i>	<i>Content</i>	<i>Materials</i>
<b>Presentation</b> 	<p>Introduce the first part of session by explaining the learning objectives and session structure.</p> <p>The first part of this session is based on the technical paper: Environmental impact assessment and management</p> <p><b>Key Points:</b></p> <p><b>Session Overview Part 1</b></p> <ul style="list-style-type: none"> <li> Background</li> <li> Mainstreaming EIAs</li> <li> The EIA process</li> <li> Environmental appraisal checklists</li> <li> Environmental impact of rural transport development</li> </ul>	<p>Presentation 5.4a Slides 1 - 5</p>


## 2. Background

Training Methods	Content	Materials
<p><b>Q &amp; A</b></p> 	<ul style="list-style-type: none"> <li>Explore the meaning of ‘environmental impact assessments (EIA)’ and what they are used for. Facilitate the discussion by asking: <p><i>What is an environmental impact assessment?</i></p> <p><i>What is the goal of an environmental impact assessment?</i></p> </li> <li>Note points on flip chart.</li> </ul>	<p>Flip chart, pens</p>
<p><b>Presentation</b></p> 	<p>Building on the discussions above, explain what an environmental impact assessment is and the goal of environmental impact assessment.</p> <p><b>Key Points:</b></p> <ul style="list-style-type: none"> <li>An environmental impact assessment (EIA) is a <ul style="list-style-type: none"> <li>✓ systematic examination of likely <b>environmental consequences</b> of proposed projects</li> <li>✓ integral part of <b>consent process</b> of projects</li> </ul> </li> <li>The goal of an EIA? <ul style="list-style-type: none"> <li>✓ to achieve better development interventions through protecting the environment (human, physical, biotic)</li> </ul> </li> </ul>	<p>Presentation 5.4a Slide 6</p>




### 3. Mainstreaming EIAs








<i>Training Methods</i>	<i>Content</i>	<i>Materials</i>
<p><b>Presentation</b></p> 	<p>Explain the context related to the mainstreaming of EIAs.</p> <p><b>Key Points:</b></p> <ul style="list-style-type: none"> <li> Industrial nations use EIAs for all major projects</li> <li> Multilateral and bilateral donors require EIAs for projects they support</li> <li> Local concerns, Earth Summits and donor pressure have led developing countries to...             <ul style="list-style-type: none"> <li>✓ establish Environmental Protection Agencies</li> <li>✓ increasingly use EIAs</li> </ul> </li> </ul>	<p>Presentation 5.4a Slide 7</p>

## 4. The EIA process



Training Methods	Content	Materials
<p><b>Ideas Gathering</b></p> 	<ul style="list-style-type: none"> <li>④ Open discussions on the issues of this session by exploring the range of activities that are involved in carrying out an EIA.</li> <li>④ Write the following question on flip chart and ask participants to make one or two word contributions:  <i>What are the activities involved in carrying out an EIA?</i></li> <li>④ Note points on flip chart. There should be no discussion at this point.</li> <li>④ Based on the participants' opinions, group the list of words into the following categories (using a coloured marker pens), which represent groups of activities involved in an EIA: <ul style="list-style-type: none"> <li>≈ Screening and Scoping</li> <li>≈ Impact identification</li> <li>≈ Impact prediction</li> <li>≈ Mitigation and enhancement</li> <li>≈ Reporting</li> <li>≈ Environmental management plan</li> <li>≈ Environmental Audit/evaluation</li> </ul> </li> <li>④ Summarise main points (<i>see trainers' note below</i>)</li> <li>④ Explain that these categories will be expanded on in the next part of the session (below).</li> </ul>	<p>Flip chart, pens</p>










Training Methods	Content	Materials
	<p><b><u>Trainers' Note</u></b></p> <p><i>The aim at this stage is to open the debate, get participants thinking about the issues and to explore their knowledge of EIAs. It is not necessary to gain a comprehensive list of the activities involved in EIA at this stage and participants may not know them all anyway. In the following section you have the opportunity to fill in the gaps in their knowledge.</i></p>	
<p><b>Presentation with Discussion</b></p> 	<p>Building on the points from the activity above, facilitate a discussion on the activities involved in an EIA.</p> <p>To stimulate discussion ask questions such as:          What does screening and scoping mean? Why is it carried out?          What key questions should be asked at the 'impact identification' stage?          How can the potential impacts on the environment (mitigation and enhancement) be most effectively dealt with?</p> <p><b>Key Points</b></p> <ul style="list-style-type: none"> <li>  Fundamental tasks during EIA project cycle include:           <ul style="list-style-type: none"> <li>✓ identify and collate appropriate information</li> <li>✓ forecast environmental changes resulting from proposed project compare to situation without proposal</li> <li>✓ change must be assessed and communicated to the decision makers</li> </ul> </li> <li>  Screening - review of project proposal to decide what sort of appraisal is needed         </li> </ul> <p><b>Continued...</b></p>	<p>Presentation 5.4a Slides 8 - 23</p>


<b>Training Methods</b>	<b>Content</b>	<b>Materials</b>
	<p><b><i>...Continued</i></b></p> <ul style="list-style-type: none"> <li>  Scoping - begins early in project cycle - to influence project design, and to provide platform for dialogue between environmental constraints and opportunities. Scoping has specific objectives.         </li> <li>  Impact identification – specially asks           <ul style="list-style-type: none"> <li>✓ What are environmental and community resources near project?</li> <li>✓ What is future state of these resources with and without proposed project?</li> </ul> </li> <li>  Impact prediction - examines project design to           <ul style="list-style-type: none"> <li>✓ minimise adverse impacts</li> <li>✓ maximise beneficial impacts</li> <li>✓ forecasts specific aspects of the likely effects of transport interventions</li> </ul> </li> <li>  Mitigation and enhancement - environmental mitigation is less costly when it is a fundamental to project design – rather than added on later         </li> <li>  Report findings to decision makers and the public in an understandable manner, using an Environmental Impact Statement (EIS)         </li> <li>  Environmental Management Plan (EMP) - Sets out actions for monitoring and evaluation during implementation or construction and operation         </li> <li>  Environmental Audit/ evaluation – asks questions related to the operation of the project within accepted standards and norms.         </li> </ul>	


## 5. Environmental appraisal checklists


Training Methods	Content	Materials
<p><b>Q &amp; A</b></p> 	<ul style="list-style-type: none"> <li>Examine the aspects that should be included in environmental appraisal checklists for screening and for policy makers. Facilitate the discussion by asking:  <i>What points should be included in environmental appraisal checklists for screening and for policy makers?</i></li> <li>Note points on flip chart.</li> </ul>	<p>Flip chart, pens</p>
<p><b>Presentation with Discussion</b></p> 	<p>This section builds on the points raised above. Facilitate a discussion on the points/features that should be included in an environmental appraisal checklist.</p> <p>During the presentation ask questions like: What environmental and development features should be included? What questions should be asked that would highlight potential adverse affects and benefits of transport interventions at micro and macro levels?</p> <p><b>Key Points:</b></p> <p><b>Screening checklist</b></p> <ul style="list-style-type: none"> <li>Environmental Features e.g. areas containing rare or endangered species; national parks, nature reserves, and so on</li> <li>Development Features e.g. important policy changes likely to affect environment</li> </ul> <p><b>Continued ...</b></p>	<p>Presentation 5.4a Slides 24 - 28</p>

<b>Training Methods</b>	<b>Content</b>	<b>Materials</b>
	<p><b>...Continued</b></p> <ul style="list-style-type: none"> <li> Potential adverse and beneficial effects e.g. on livelihoods, culture, land management, and so on</li> <li> Impact characterisation</li> </ul> <p><b>Checklist for policy approver sand decision makers:</b></p> <ul style="list-style-type: none"> <li> Project setting e.g. have the underlying causes of environmental damage considered?</li> <li> Impact identification e.g. any effect on environmentally sensitive or important areas?</li> <li> What mitigation measures are proposed?</li> <li> Procedures e.g. were appropriate guidelines followed?</li> <li> Implementation, for example, do local institutions need strengthening in order to effect the environmental measures?</li> </ul>	

## 6. Environmental impact of rural transport development


Training Methods	Content	Materials
<p><b>Group Discussion</b></p> 	<p>The purpose of this activity is to discuss the direct and indirect environmental impacts of rural road projects. Participants should draw on their experiences and knowledge of ways in which rural transport projects transform the environment for good or ill.</p> <ul style="list-style-type: none"> <li>④ Divide participants into small groups and give them Activity Sheet 80</li> <li>④ Ask participants to discuss the following questions: <ul style="list-style-type: none"> <li>A. What are the <u>direct</u> environmental impacts associated with rural road projects?</li> <li>B. What are the <u>indirect</u> environmental impacts associated with rural road projects?</li> </ul> </li> <li>④ Ask participants to write their findings on flip chart, elect a presenter and prepare to feedback to the plenary.</li> <li>④ Ask each group to present their findings to the plenary.</li> <li>④ Facilitate a discussion on the Key Points raised.</li> <li>④ These points will be explored in more detail in the section below.</li> </ul>	<p>Presentation 5.4a Slide 29</p> <p>Activity Sheet 80</p> <p>Flip chart, pens</p>

<i>Training Methods</i>	<i>Content</i>	<i>Materials</i>
<p><b>Presentation with Discussion</b></p> 	<p>This section builds on the points raised above. Facilitate a discussion on the environmental impacts of rural roads.</p> <p>During the presentation ask questions like:          What are the positive and negative effects of road improvements on the immediate local environment?          What are the difficulties with identifying indirect environmental impacts?</p> <p><b>Key Points:</b></p> <ul style="list-style-type: none"> <li>🌐 Direct impacts for example, encroachment into precious ecological resources, encroachment into historical/cultural areas, impairment of fisheries, aquatic ecology</li> <li>🌐 Erosion is usually the most significant environmental impact of rural roads</li> <li>🌐 Positive environmental effects include for example an all-weather road in Mongolia reduced 'off-road' vehicle travel and hence environmental damage</li> <li>🌐 Indirect environmental impacts are difficult to predict, and they are often long term</li> </ul>	<p>Presentation 5.4a          Slides 30 - 32</p>









<p><b>Presentation</b></p> 	<p><b>Concluding remarks</b></p> <p>Summarise the first part of this session by highlighting the main issues explored.</p>	<p>Presentation 5.4a Slide 33</p>
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## Part 2


# 7. Case Study: South Africa


<i>Training Methods</i>	<i>Content</i>	<i>Materials</i>
<p><b>Presentation</b></p> 	<p><b>7.1 Introduction</b></p> <p>Introduce the second part of this session explaining the objectives with a brief overview of the topics to be covered.</p> <p>This part of the session is based on: Environmental impact assessment case study Mkuze river crossing to Phelendaba in South Africa.</p> <p><b>Key Points:</b></p> <p><b>Session Overview Part 2</b></p> <ul style="list-style-type: none"><li>Background &amp; South African EIA regulations</li><li>Background and context to the proposed development</li><li>Environmental Issues</li><li>Conclusions of EIA</li></ul>	<p>Presentation 5.4b Slides 1 - 3</p>




Training Methods	Content	Materials
<p><b>Presentation</b></p> 	<h2 data-bbox="419 454 1082 533">7.2 Background &amp; South African EIA regulations</h2> <p data-bbox="419 573 1241 685">Describe the background to the South African case study, and the context of EIAs in the country, including the regulations relating to EIAs.</p> <p data-bbox="359 757 536 790"><b>Key Points:</b></p> <ul data-bbox="419 831 1241 1749" style="list-style-type: none"> <li>  In South Africa EIAs are compulsory for development proposals: result of 1997 Environmental Conservation Act         </li> <li>  Applies to construction or upgrading of all major roads, and sensitive environmental areas         </li> <li>  South African Constitution upholds right of individuals to environment that is not harmful to their health and well-being         </li> <li>  Environmental Management Act         </li> <li>  Scoping           <ul data-bbox="467 1346 1209 1424" style="list-style-type: none"> <li>✓ determines scope of assessment</li> <li>✓ consultation with 'interested and affected parties'</li> </ul> </li> <li>  Assessment           <ul data-bbox="467 1491 1106 1603" style="list-style-type: none"> <li>✓ explores impact, magnitude, duration and significance of the intended road improvement/initiative</li> </ul> </li> <li>  Decision           <ul data-bbox="467 1671 1241 1749" style="list-style-type: none"> <li>✓ relevant authorities are involved and the process is coordinated by 'lead agent'</li> </ul> </li> </ul>	<p data-bbox="1270 528 1453 629">Presentation 5.4b Slides 4 - 6</p>

<b>Training Methods</b>	<b>Content</b>	<b>Materials</b>
<p><b>Presentation</b></p> 	<h3>7.3 Background to the proposed development and context</h3> <p>Describe the background and context to the proposed road development illustrated in this case study</p> <p><b>Key Points</b></p> <ul style="list-style-type: none"> <li>  Last gravel section of tourist access from Hluhluwe to Mozambique border           <ul style="list-style-type: none"> <li>✓ Proposal</li> <li>✓ Tar existing road</li> <li>✓ Construct new crossing over bottom of Mozi Pan</li> <li>✓ Upgrade bridge at lower Mkuze Crossing</li> <li>✓ Upgrade the crossing over Mseleni River</li> </ul> </li> <li>  Biophysical environment         </li> <li>  Development         </li> <li>  Social environment         </li> </ul>	<p>Presentation 5.4b Slides 7 - 11</p>

<i>Training Methods</i>	<i>Content</i>	<i>Materials</i>
<p><b>Presentation</b></p> 	<h3>7.4 Environmental Issues</h3> <p>Describe the environmental issues arising from the two alternative routes for the new road.</p> <p><b>Key Points</b></p> <p>Negative impacts and potential benefits of:</p> <ul style="list-style-type: none"> <li>Existing (eastern) alignment and upgrading Mozi Swamp crossing</li> <li>Alternative (western) alignment</li> <li>Western (alternative) alignment</li> </ul>	<p>Presentation 5.4b Slides 12 - 15</p>

Training Methods	Content	Materials
<p><b>Case Study activity in groups</b></p> 	<p><b>Weighing the evidence</b></p> <p>The purpose of this activity is to assess the evidence presented and make recommendations on which road alignment should be selected. The pros and cons of each choice should be examined.</p> <ul style="list-style-type: none"> <li>③ Divide the participants into groups of 4 or 5, and give each group Activity Sheet 81</li> <li>③ Ask participants to discuss the following questions: <p><i>Given the benefits and negative impacts outlined above, which road alignment should be selected and why?</i></p> </li> <li>③ Ask the groups to prepare their findings on flip chart and to elect a person to present the findings.</li> <li>③ Each group presents their findings to the plenary.</li> <li>③ Facilitate a discussion on the findings and draw out the key learning points.</li> <li>③ These will be discussed in detail below where the trainer explains which alignment was eventually selected.</li> </ul>	<p>Presentation 5.4b Slide 16</p> <p>Flip chart, pens</p> <p>Activity sheet 81</p>

<b>Training Methods</b>	<b>Content</b>	<b>Materials</b>
<p><b>Presentation</b></p> 	<h3>7.5 Conclusions of the EIA</h3> <p>Present the conclusions of the EIA carried out for the South African scenario.</p> <p><b>Key Points</b></p> <ul style="list-style-type: none"> <li>• The existing (eastern) alignment was selected because of environmental considerations.</li> <li>• There was vehement opposition to alternative route by tribal authorities</li> <li>• It was recommended stringent Environmental Management Programme (EMP) – to mitigate negative impact of upgrade, especially for Mozi Swamp crossing</li> <li>• This case study highlights the complexity of EIA</li> </ul>	<p>Presentation 5.4b Slides 17 - 18</p>
	<h3>Summary of Session 5.4</h3> <p>Finish the session by reviewing the issues explored and the key lessons learnt, highlighting areas that may need further investigation or discussion.</p>	