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Authors of the guideline:

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Committee:

C20“Appropriate Development

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Institutional capacity building for rural roads development and management

Theme of the presentation:

**“Planning and Environmental Impact Analysis of Road Infrastructure –
Guideline ”**

Roads Department, Republic of Botswana

Presented by:

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Abstract

“Planning and Environmental Impact Analysis of Road Infrastructure – Guideline ”

Environmental Impact Assessments have been carried out in the past in Botswana without any national guidelines, resulting in reports with large variations in content, quality and coverage.

It is in recognition of these shortcomings that the Guidelines for Planning and Environmental Impact Assessment of Road Infrastructure have been produced. Their objective is to facilitate a comprehensive technical basis for decision-making throughout the planning process as well as to provide transparency to the affected communities.

Environmental impact assessment (EIA) is an evaluation of foreseeable impacts, both beneficial and adverse. It is intended to help reveal mitigating measures and alternatives to optimise positive impacts while reducing or limiting negative impacts. The end result of the EIA process is a better understanding of the linkages between society, the natural environment and the sustainable use of inherited resources.

Environmental impact assessment is to be carried out at different levels of detail at the pre-feasibility, feasibility and detailed design stages. Technical guidance for the level of detail of the environmental impact assessments at each planning stage is given in the guideline

Road projects often involve issues of conflicting interests. Environmental impact assessment is, in this respect, a useful tool for documenting the various impacts and interests and providing a *transparent* basis for comparing them and recommending or deciding on alternative options. Consultation is emphasised.

The method for Environmental impact assessment described in this manual is a systematic evaluation of the relevant advantages (benefits) and disadvantages (costs) that alternative alignments for a new road project or improvements to an existing road will generate, regardless of the unit of measurement, i.e. whether measurable in monetary units or not.

The impacts that can be put into monetary terms e.g. time - savings, are handled in an ordinary Cost Benefit Analysis. The non-monetised impacts, for example impacts on archaeological relics, are handled in a systematic way describing the *value* of the asset and the *magnitude* of the impacts. Based on the value and the magnitude, the *significance* of the impact in relation to the value of the asset is assessed

The guidelines also present advice and methods on how to compare both monetised and non-monetised impacts, and how to discuss and substantiate the recommendation of an alignment.

Paper

“Planning and Environmental Impact Analysis of Road Infrastructure – Guideline ”

Introduction

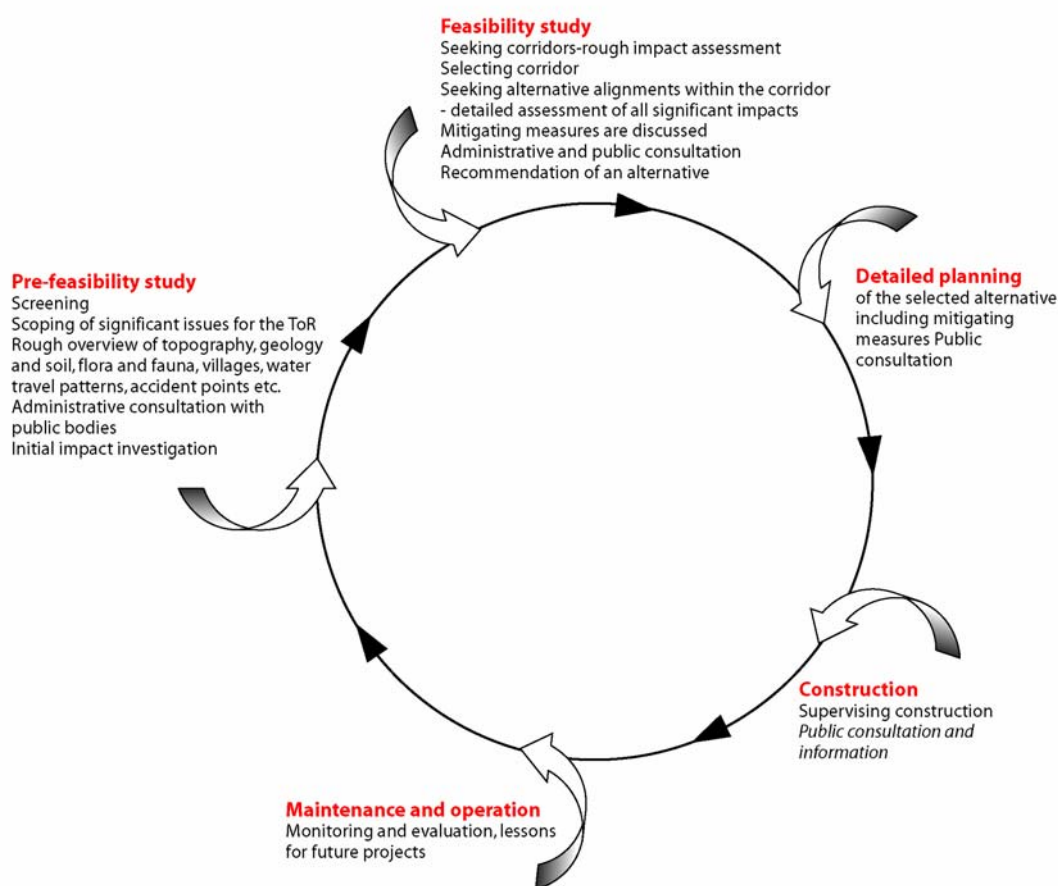
Environmental Impact Assessments have been carried out in the past in Botswana without any national guidelines, resulting in reports with large variations in content, quality and coverage.

It is in recognition of these shortcomings that the Guidelines for Planning and Environmental Impact Assessment of Road Infrastructure have been produced. Their objective is to facilitate a comprehensive technical basis for decision-making throughout the planning process as well as to provide transparency to the affected communities.

Environmental impact assessment (EIA) is an evaluation of foreseeable impacts, both beneficial and adverse. It is intended to help reveal mitigating measures and alternatives to optimise positive impacts while reducing or limiting negative impacts. The end result of the EIA process is a better understanding of the linkages between developing the transport infrastructure and society and the natural resources.

Environmental impact assessment as an integral part of the planning process

Environmental impact assessment is to be carried out as an integral part of the planning process of a road project, and at different levels of detail at the pre-feasibility, feasibility and detailed design stages. Technical guidance for the level of detail of the environmental impact assessments at each planning stage is given in the guideline.

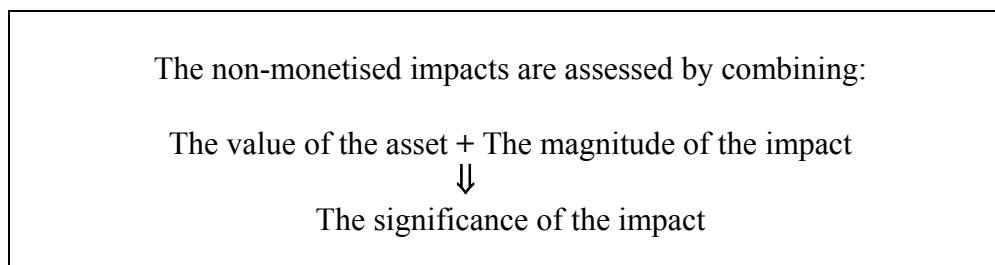


The project cycle and how the EIA's should fit into the planning, construction and operation of a road project

Road projects often involve issues of conflicting interests. Environmental impact assessment is, in this respect, a useful tool for documenting the various impacts and interests and providing a transparent and accountable basis for comparing them and recommending or deciding on alternative options. The guideline also emphasise public participation and consultation with stakeholders at each stage of the planning process. Consultation is important to enhance the benefits of the road project and to reduce the negative effects. Transparency and accountability in the planning process are also important tools for reducing conflicts and avoiding set backs caused by decisions made without proper consultation.

The method for Environmental impact assessment described in this manual is a systematic evaluation of the relevant advantages (benefits) and disadvantages (costs) that alternative alignments for a new road project or improvements to an existing road will generate, regardless of the unit of measurement, i.e. whether measurable in monetary units or not.

The impacts that can be put into monetary terms e.g. time - savings, are handled in an ordinary Cost Benefit Analysis. The non-monetised impacts, for example impacts on archaeological relics, are handled in a systematic way describing the *value* of the asset and the *magnitude* of the impacts. Based on the value and the magnitude, the *significance* of the impact is assessed in relation to the value.



Advice is given on how to assess the value of the asset, the magnitude of the impacts and significance of impacts.

The themes relevant for road projects in Botswana are:

Themes to be included in an EIA	Method of assessment
<p>Monetary themes Time savings Savings in vehicle operating costs Benefit from generated traffic Savings in accident costs</p>	<p>Cost Benefit Analysis</p>
<p>Non-monetary themes Geological resources Agriculture Surface water Archaeological and other historical assets Biophysics – wildlife and vegetation Aesthetic impacts Noise nuisance and local air pollution Social environment – community life effects</p>	<p>The significance of the impacts is assessed by combining the value of the asset and the magnitude of the impacts. The significance can range from four pluses to four minuses via zero.</p> <p>---- 0++++</p>
<p>Short term effects during construction</p>	<p>Check list</p>

The guidelines also present advice and methods on how to compare both monetised and non-monetised impacts, and how to discuss and substantiate the recommendation of an alignment.

