

# GUIDELINES FOR SPECIALIST STUDIES

## Methods in determining impact significance

This document serves as a guideline to assessing and rating impacts in line with legislated requirements and according to recommendations by the Department of Environmental Affairs. While the process of determining impact magnitude and significance should never become mechanistic, making the process more explicit is important to ensure the effectiveness of the EIA process.

Describing the impacts in terms of a standardised criteria provides a consistent and systematic basis for the comparison and application of judgements. Content requirements for a Scoping report presented in GN 38282 (of December 2014) (Appendix 2) specifically outlines the criteria to be used to describe and rate impacts. These criteria are:

- The **nature** of the impact
- The **consequence** of the impact
- The **extent** or spatial scale of the impact;
- The **duration** of the impact;
- The **probability** of the impact
- The **significance** of the impact

While not specified by the regulations, significance ratings should be assigned for each criterion. Recommended ratings are presented below in Table 1.

**Table 1:** Descriptors for the rating of impact significance (taken from *Impact Significance*, IEM Information Series, DEAT)

<b>High</b>	Of the highest order possible within the bounds of impacts that could occur. In the case of adverse impacts, there is no possible mitigation that could offset the impact, or mitigation is difficult, expensive, time-consuming or some combination of these. Social, cultural and economic activities of communities are disrupted to such an extent that these come to a halt. In the case of beneficial impacts, the impact is of a substantial order within the bounds of impacts that could occur.
<b>Medium</b>	Impact is real, but not substantial in relation to other impacts that might take effect within the bounds of those that could occur. In the case of adverse impacts, mitigation is both feasible and fairly easily possible. Social, cultural and economic activities of communities are changed, but can be continued (albeit in a different form). Modification of the project design or alternative action may be required. In the case of beneficial impacts, other means of achieving this benefit are about equal in time, cost and effort.
<b>Low</b>	Impact is of a low order and therefore likely to have little real effect. In the case of adverse impacts, mitigation is either easily achieved or little will be required, or both. Social, cultural and economic activities of communities can continue unchanged. In the case of beneficial impacts, alternative means of achieving this benefit are likely to be easier, cheaper, more effective and less time-consuming.
<b>No Impact</b>	Zero impact.

## Impact Ratings

Examples of impact ratings to be employed for each criteria are presented below and should be used and/or adapted according to context and project specifications.

1. The **nature** of the impact should describe whether the impact is *positive* (a benefit), *negative* (a cost) or *neutral*
2. The **consequence** of the impact relates to what specific change it will cause to the physical, biological, cultural or socio-economic environment
3. Criteria for rating **extent** or spatial scale

<b>High</b>	Widespread Far beyond site boundary Regional/National/International Scale
<b>Medium</b>	Beyond site boundary
<b>Low</b>	Within site boundary

4. Criteria for rating **duration**

<b>High (long term)</b>	Permanent. Beyond decommissioning. Long term (More than 15 years).
<b>Medium (medium term)</b>	Reversible over time. Lifespan of the project. Medium term (5 – 15 years).
<b>Low (short term)</b>	Quickly reversible. Less than the project lifespan. Short term (0 – 5 years).

5. Criteria for rating **probability**

<b>High (Definite)</b>	More than 90% sure of a particular fact. Substantial supportive data exist to verify the assessment.
<b>Medium (Probable)</b>	Over 70% sure of a particular fact or of the likelihood of that impact occurring. Possible: Only over 40% sure of a particular fact or of the likelihood of an impact
<b>Low (Unsure)</b>	Quickly reversible. Less than the project lifespan. Short term (0 – 5 years).

6. Criteria for rating **significance**

**See table 1**

## Impact Ratings according to Mitigatory Potential

Scoping process requirements dictate that significance of impacts be assessed both with and without mitigation action, specifically according to the degree that:

- impacts can be reversed
- impacts may cause irreplaceable loss of resources
- impacts can be avoided, managed or mitigated

For each impact, practical mitigation measures that can affect the significance rating should be recommended or if no mitigation action is possible, reasons must be provided. If a positive impact is recorded, measures to *enhance* the impact should be identified.

The Table below serves as an example that takes into account legal requirements as well as recommended methodologies. The Table assesses the impact of increased traffic due to a proposed sand mining site in a residential area.

Table 2: Example of impact table

Traffic Impact on existing road network volumes						
Alternative 1*	Nature	Consequence	Extent	Duration	Probability	Significance
Without Mitigation	Negative	Increased traffic volumes	Medium	Low	High	Low
With Mitigation	Negative	Increased traffic volumes, although reduced	Medium	Low	High	Low
Extent to which Impact can be avoided, managed or mitigated	Impact cannot be avoided					
Proposed mitigation	Appropriate access layout and signage to the site to reduce the overall traffic impact of the development vehicles					
Extent to which Impact can be reversed	The impact will be reversed when the development ends					
Extent to which Impact may cause irreplaceable loss of resources	Not applicable					

\*note that impacts should be assessed for **each alternative**