

## **APPENDIX A: THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS**

The Environmental Impact Assessment process comprises two key phases – the Scoping Phase and the Environmental Impact Assessment Phase. These phases are described in detail below.

### **A1. THE SCOPING PHASE**

Scoping is the first step in the EIA process. It allows for all role players – stakeholders and Interested and Affected Parties (I&APs) - to gain a greater understanding of the project by means of a public participation process. Scoping is also critical in as much as it facilitates the early identification of important natural and social issues that will need to be considered later in the process.

The principal objectives of the Scoping Phase are:-

- Describe the nature of the proposed project;
- Preliminary identification and assessment of potential environmental issues or impacts to be addressed in the subsequent EIA phase;
- Define the legal, policy and planning context for the proposed project;
- Describe important biophysical and socio-economic characteristics of the affected environment;
- Undertake a public participation process that provides opportunities for all I&APs to be involved;
- Identify feasible alternatives that must be assessed in the EIA phase; and
- Define the Plan of Study (PoS) for the EIA phase.

Each of the steps involved in the scoping phase is discussed in detail below.

#### **A1.1. Project description**

A description of the components of the proposed project is provided.

#### **A1.2. Preliminary assessment of the project**

Baseline data and information on the proposed development is collected, primarily from the project proponent, but also from preliminary site surveys and published literature, and from legislation, guidelines and other regulatory instruments, in order to determine the activities for which approval must be sought from the competent environmental authority.

Information sourced from the project proponent includes the proposed location and layout of the development, and the technology to be adopted. A preliminary assessment of this data and information, in the context of legal requirements and an understanding of the receiving environment, is by way of a preliminary risk assessment or fatal flaw analysis. It enables major risks to the project or to the receiving environment to be identified at an early stage in the EIA process, and informs subsequent decisions about aspects of the development identified as being potentially problematic.

#### **A1.3. Legal context**

The legislation relevant to the proposed Project is identified and reviewed.

#### **A1.4. Identification of key bio-physical and socio-economic issues**

The key biophysical and socio-economic issues related to the project are identified during the Scoping Phase. Relevant information is drawn from as wide a range of sources as possible, including local authorities, local communities, and specialists.

### **A1.5. Public Participation Process**

A public participation process is an explicit requirement of the NEMA EIA regulations, and must take place throughout the EIA process. The approach to public consultation depends largely on the location of the proposed development, the nature of the project, the sensitivity of the receiving environment, the previous level of exposure of the public to the EIA process, and the level of education of those who will be affected by the proposed development. Among other things, involvement of the public in the EIA process is an opportunity to gather local knowledge from individuals, communities and organisations.

Key stakeholders are identified and notified of the proposed development and the ways in which they can be involved. These stakeholders include:-

- Local and regional authorities
- Ratepayers associations
- Ward councillors and representatives
- Non-governmental Organisations (NGOs) and Community Based Organisations (CBOs)
- Landowners adjacent and close to the site of the proposed development.

Stakeholders and I&APs are informed of the proposed development by means of:-

- Advertisements in newspapers
- A background information document (BID)
- Letters to key stakeholders and neighbouring landowners/occupiers
- Notice boards placed at the site

All of the above must include name(s) and contact details - telephone and fax numbers, and e-mail address(es) to which stakeholders and I&APs can direct written or verbal comments.

Advertisements are placed in a minimum of one local and one regional newspaper, depending on the nature and extent of the proposed development. Stakeholders and I&APs are encouraged to register by sending their names and contact details to the EAP, whereupon they are sent a copy of the BID, and are thereafter kept informed of and involved in all subsequent stages of the EIA process. The BID is a brief document that provides information on the nature and location of the proposed development, and details of how the EIA process will be undertaken. However, it is unlikely that the final design specifications of some proposed developments are known at this stage, and there may be changes to the information presented in the BID as the project progresses.

In addition, public meetings, open house meetings and/or focus group meetings may be held. In the early stages of the Scoping Phase these meetings provide an opportunity for the Environmental Assessment Practitioner (EAP) to present and discuss the information in the BID, to elicit information from local sources, and to register I&APs. Comment forms provide a further way by which comments may be submitted. In the latter stages meetings provide opportunities to discuss the draft version of the Scoping Report before it is submitted to the competent environmental authority.

### **A1.6. Identification of alternatives**

Possible alternatives to the proposed development must be identified during the Scoping Phase. These may include fundamental alternatives, such as maintaining the current land use, or proposing a development of a different nature to the one proposed by the project proponent. Design alternatives are intended to modify certain design aspects of the proposed project, such as alternative technologies, timing of activities, or the location of infrastructure, so as to minimise negative impacts on the environment. The identification of alternatives must be reasonable and practical.

### **A1.7. Plan of Study for the EIA Phase**

The information and comments received and recorded during the Scoping Phase inform the larger and more comprehensive EIA Phase. This is usually achieved by the development of the Plan of Study (PoS) for the EIA. The PoS defines the actions, steps, and studies that must be undertaken in the EIA Phase.

### **A1.8. Scoping Reports**

The data collected during the baseline data collection and public participation processes must be synthesised in a Scoping Report. In line with NEMA regulations, registered I&APs are entitled to comment, in writing, on all written submissions made to the competent authority by the applicant or the EAP managing an application. Accordingly a Draft Scoping Report is made available for public comment for a minimum period of 30 days. All comments on the draft report must be considered, and necessary changes made to the Draft before it is submitted for review to the competent authority as the final Scoping Report. This report includes the PoS discussed in A1.7 above.

## **A2. ENVIRONMENTAL IMPACT ASSESSMENT PHASE**

The Environmental Impact Assessment (EIA) is a comprehensive evaluation and study phase that addresses all the issues raised in the Scoping Phase. It is a substantial phase that has seven key objectives:-

- Describe the biophysical and socio-economic environment that is likely to be affected by the proposed development.
- Undertake specialist studies to address the key biophysical and socio-economic issues.
- Assess the significance of impacts that may occur from the proposed development.
- Assess the alternatives proposed during the Scoping Phase.
- Provide details of mitigation measures and management recommendations to reduce the significance of impacts.
- Provide a framework for the development of Environmental Management Plans.
- Continue with the public participation process.

### **A2.1. Specialist Studies**

Specialist studies are undertaken to provide a detailed and thorough examination of key issues and environmental impacts. Specialists gather relevant data to identify and assess environmental impacts that might occur on the specific component of the environment that they are studying (for instance waste management, air quality, noise, vegetation, water quality, pollution, waste management). Once completed, these studies are synthesised in, and presented in full as appendices to the Environmental Impact Report (EIR).

### **A2.2. Public Participation Process**

The public participation process (PPP) initiated at the beginning of the Scoping Phase continues into the EIA Phase. Once again the PPP provides a platform from which all I&APs are able to voice their concerns and raise issues regarding the project.

### **A2.3. Assessment of the Significance of Impacts**

It is necessary to determine the significance, or seriousness, of any impacts on the natural or social environment. It is common practice in the EIA Phase to use a significance rating scale that determines the spatial and temporal extent, and the severity and certainty of any impact occurring, including impacts relating to any project alternatives. This allows the overall significance of an impact or benefit to be determined.

The overall intent of undertaking a significance assessment is to provide the competent authority with information on the potential environmental impacts and benefits, thus allowing them to make

an informed, balanced and fair decision.

#### **A2.4. Mitigation Measures and Recommendations**

Critical to any EIA is the recommendation of practical and reasonable mitigation measures and recommendations. These recommendations relate to the actions that are needed in order to avoid, minimise or offset any negative impacts from the development.

#### **A3.5. Planning Input**

An effective EIA process should actively engage and contribute to the project planning process so as to mitigate environmental impacts through improved design and layout.

#### **A3.6. Environmental Impact Report**

The above-mentioned tasks are synthesised in an Environmental Impact Report (EIR). This will allow the assessment of the relationship of environmental impacts to project actions, as well as to assess the overall significance of these impacts. The EIR will also provide sufficient information to allow the competent authority to make an informed decision.

A summary report covering key findings is prepared in a manner that is easy to read and understand. Text will be kept short and technical detail to a minimum, while information will be presented in the form of photographs and figures wherever possible.

### **A4. ENVIRONMENTAL MANAGEMENT PLANS**

Environmental management and action plans based on the findings and recommendations set out in the EIR are prepared. Environmental Management Plans (EMPs) and, where necessary, Social Management Plans (SMPs) consist of a set of practical and actionable mitigation, monitoring and institutional measures to be taken into account during construction and operation of the proposed development. The aim is to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels. These plans include: -

- The standards and guidelines that must be achieved in terms of environmental legislation.
- Mitigation measures and environmental specifications that must be implemented at 'ground level', that is, during construction and operation.
- Provide guidance through method statements to achieve the environmental specifications.
- Define corrective action that must be taken in the event of non-compliance with the specifications of the EMPs and SMPs.
- Prevent long-term or permanent environmental degradation.

### **A5. ENVIRONMENTAL AUTHORISATION AND APPEALS PROCESS**

On thorough examination of the EIR, the competent authority will issue an Environmental Authorisation or reject the application. Should authorisation be granted, it will carry Conditions of Approval. The proponent is obliged to adhere to these conditions.

I&APs are notified of the decision and have 10 days in which to lodge a notice of intention to appeal the decision, and a further 30 days in which to submit the appeal.

## APPENDIX B: VEGETATION ASSESSMENT

### APPENDIX B-1: SPECIES RECORDED DURING THE ON-SITE VEGETATION SURVEY CONDUCTED IN NOVEMBER 2009

#### ACANTHACEAE

*Hypoestes aristata* (Vahl) Sol. ex Roem. & Schult. var. *aristata*  
*Hypoestes* sp.

#### AMARYLLIDACEAE

*Brunsvigia* sp.

#### ANACARDIACEAE

*Rhus crenata* Thunb.  
*Rhus incisa* L.f. var. *incisa*  
*Rhus laevigata* var. Indet  
*Rhus longispina* Eckl. & Zeyh.  
*Rhus pallens* Eckl. & Zeyh.  
*Rhus refracta* Eckl. & Zeyh.

#### APOCYNACEAE

*Carissa bispinosa* (L.) Desf. ex Brenan  
*Sarcostemma viminale* (L.) R.Br. subsp. Unknown

#### ARALIACEAE

*Cussonia thyrsoiflora* Thunb.

#### ASPARAGACEAE

*Asparagus crassiflorus* Jessop.  
*Asparagus densiflorus* (Kint) Jessop  
*Asparagus striatus* (L.f.) Thunb.  
*Asparagus* sp.

#### ASPHODELACEAE

*Aloe africana* Mill.  
*Aloe ciliaris* var. unknown  
*Bulbine frutescens* (L.) Willd.

#### ASTERACEAE

*Chrysanthemoides monilifer* subsp. indet  
*Helichrysum anomalum* Less.  
*Helichrysum* sp.  
*Senecio* sp.  
*Tarchonanthus camphoratus* L.

#### CACTACEAE

*Opuntia ficus-indica* (L.) Mill.

#### CELASTRACEAE

*Lauridia tetragonal* (L.f.) Druce  
*Gymnosporia arenicola* M.Jordaan  
*Maytenus procumbens* (L.f.) Loes.  
*Putterlickia pyracantha* (L.) Szyszyl.  
*Pterocelastrus tricuspidatus* (Lam.) Walp.

#### CRASSULACEAE

*Crassula arborescens* (Mill.) Willd. subsp. *undulatifolia* Tolken

*Crassula expansa* var. indet  
*Crassula mesembryanthoides* Dinter  
*Crassula muscosa* var. unknown  
*Crassula* sp.

**EBENACEAE**

*Diospyros dichrophylla* (Gand.) De Winter  
*Euclea racemosa* Murray subsp. *macrophylla*  
*Euclea undulata* Thunb.

**DIOSCOREACEAE**

*Dioscorea* sp.

**DRACAENACEAE**

*Sansevieria hyacinthoides* (L.) Druce.

**EBENACEAE**

*Euclea undulata* Thunb.

**EUPHORBIACEAE**

*Clutia* sp.  
*Euphorbia* sp.

**FABACEAE**

*Acacia cyclops* A.Cunn. Ex G.Don  
*Acacia karoo* Hayne  
*Indigofera ngromontana* Eckl. & Zeyh.  
*Melolobium candicans* (E.Mey.) Eckl. & Zeyh.  
*Scotia afra* (Thunb. var. *afra*

**IRIDACEAE**

*Dietes* sp.

**LAMIACEAE**

*Plectranthus madagascariensis* var unknown  
*Stachys* sp.

**MALVACEAE**

*Pavonia praemorsa* (L.f.) Cav

**MESEMBRYANTHEMACEAE**

*Carpobrotus dimidiatus* (Haw.) L.Bolus  
Mesembryanthemaceae sp.  
*Ruschia* sp.  
*Trichodiadema* sp.

**MYRSINACEAE**

*Rappanea gilliana* (Sond.) Mez

**OLEACEAE**

*Olea europaea* subsp. *africana*

**OXALIDACEAE**

*Oxalis* sp.

**POACEAE**

*Cynodon dactylon* (L.) Pers.  
*Cymbopogon* sp.  
*Digitaria eriantha* Steud.  
*Eragrostis curvula* (Schrad.) Nees  
*Hyparrhenia hirta* (L.) Stapf  
*Panicum deustum* Thunb.  
*Stipagrostis zeyheri* Subsp. Indet

**RHAMNACEAE**

*Scutia myrtima* (Burm.f.) Kurz

**RUBIACEAE**

*Anthospermum aethiopicum*

**RUTACEAE**

*Agathosma puberula*

**SALVADORACEAE**

*Azima tetraacantha* Lam.

**SAPINDACEAE**

*Pappea capensis* Eckl. & Seyh.

**SAPOTACEAE**

*Sideroxylon inerme* L.

**SCROPHULARIACEAE**

*Selago corymbosa* L.  
*Jamesbrittenia microphylla* (L.f.) Hillard

**STERCULIACEAE**

*Hermania althaeoides* Link.

**THYMELAEACEAE**

*Passerina rigida* Wikstr.

**URTICACEAE**

*Forsskaolea* sp.

**VISCACEAE**

*Viscum obscurum* Thunb.

**APPENDIX B-2: SPECIES OF SPECIAL CONCERN RECORDED DURING PREVIOUS STUDIES (PHILLIPSON, 2002a and 2002b) WITHIN THE SAME VEGETATION TYPE IN THE COEGA INDUSTRIAL DEVELOPMENT ZONE**

**ACANTHACEAE**

*Blepharis procumbens* (L. f.) Pers.

**AMARYLLIDACEAE**

*Apodolirion macowanii* Bak.  
*Cyrtanthus clavatus* (L'Hérit.) R.A. Dyer  
*Haemanthus albiflos* Jacq.  
*Haemanthus coccineus* L.  
*Strumaria gemmata* Ker-Gawl

**APOCYNACEAE**

*Pachypodium bispinosum* (L. f.) A. DC.  
*Pachypodium succulentum* (L. f.) Sweet

**ASCLEPIADACEAE**

*Brachystelma* sp.  
*Duvalia caespitosa* (Mass.) Haw.

**ASPHODELACEAE**

*Aloe striata* Haw. subsp. *striata*  
*Trachyandra ciliata* (L. f.) Kunth

**ASTERACEAE**

*Berkheya heterophylla* (Thunb.) O. Hoffm. var. *heterophylla*  
*Gibbaria scabra* (Thunb.) T. Norl.  
*Euryops ericifolius* (Belang.) B. Nord.

**CELASTRACEAE**

*Lauridia reticulata* Eckl. & Zeyh. (listed as *Cassine reticulata*)

**CRASSULACEAE**

*Adromischus cristatus* (Haw.) Lem.  
*Crassula perfoliata* L. var. *coccinea* (Sweet) Rowley  
*Cotyledon velutina* Hook. f.

**ERIOSPERMACEAE**

*Eriospermum dregei* Schonl.

**EUPHORBIACEAE**

*Euphorbia clava* Jacq.  
*Euphorbia fimbriata* Scop.  
*Euphorbia ledienii* Berger var. *ledienii*  
*Euphorbia meloformis* Ait.  
*Euphorbia stellata* Willd.

**GERANIACEAE**

*Pelargonium pulverulentum* Colv. ex Sweet

**HYACINTHACEAE**

*Ledebouria coriacea* S.Venter ined.  
*Ledebouria ensifolia* (Eckl.) S.Venter ined.  
*Massonia echinata* L. f.

**IRIDACEAE**

*Babiana patersoniae* L. Bol.

**MESEMBRYANTHEMACEAE**

*Bergeranthus addoensis* L. Bol.

*Lampranthus hollandii* (L. Bol.) L. Bol.

*Platythyra haeckeliana* (Berger) N.E. Br.

*Rhombophyllum rhomboideum* (Salm-Dyck) Schwant.

**ORCHIDACEAE**

*Acrolophia micrantha* (Lindl.) Schltr. & H. Bol. (recorded adjacent to Pechiney site)

**OXALIDACEAE**

*Oxalis algoensis* Eckl. & Zeyh.

*Ophioglossum polyphyllum* A. Br. in Seub.

**RHAMNACEAE**

*Phyllica axillaris* Lam. var. *microphylla* (Eckl. & Zeyh.) Pillans

**SANTALACEAE**

*Thesium scandens* Sond.

**SOLANACEAE**

*Lycium horridum* Thunb.

**STERCULIACEAE**

*Hermannia saccifera* (Turcz.) K. Schum.