

# DRAFT SCOPING REPORT FOR PUBLIC REVIEW

## *THE PROPOSED ESTABLISHMENT OF A 200HA SEED CANE SCHEME AT THE OWEN SITOLE COLLEGE OF AGRICULTURE, NEAR EMPANGENI, KWAZULU-NATAL*

**Prepared for:**

**Tongaat Hulett – Cane and Rural Development Unit**  
PO Box 3  
Tongaat  
4400

**Prepared by:**

**Strategic Environmental Focus (Pty) Ltd**  
P.O. Box 227  
Pavilion  
3611

Tel. No.: +27 31 266 1277

Fax. No.: +27 31 266 6880

Website: [www.sefsa.co.za](http://www.sefsa.co.za)



**January 2014**

**SEF Project Code: 505173**

**KZN DAEA Reference No: DC25/0032/2013**

**NEAS Reference: KZN/EIA/0001352/2013**

## PURPOSE OF DOCUMENT

A period of **40 calendar days** (27<sup>th</sup> January 2014 to 10<sup>th</sup> March 2014) has been provided to the **State Departments and the General Public** for the review and commenting phase of the Draft Scoping Report. All Interested and Affected Parties (I&APs) as well as State Departments have been notified of this review period.

The Draft Scoping Report contains the following information:

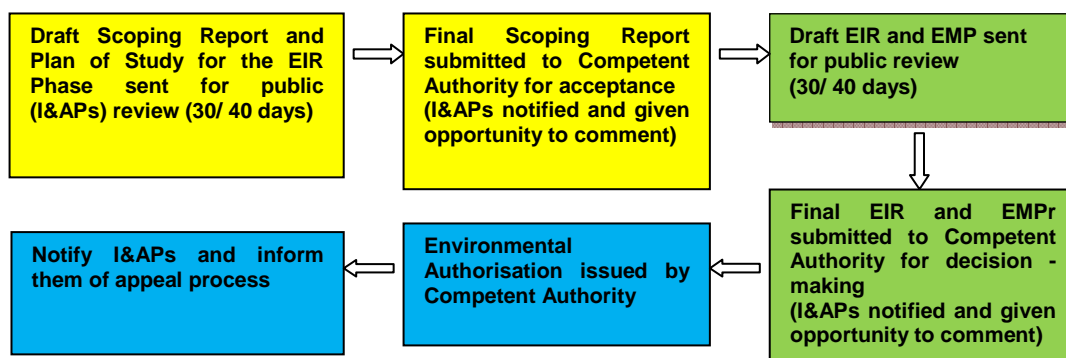
- A description of the project, including project motivation;
- Discussion of applicable alternatives;
- A description of the environment affected by the project;
- The public participation process; and
- The plan of study for the Environmental Impact Reporting (EIR) phase.

The Draft Scoping Report can be viewed at the following venue:

Name of public venue	Name of Contact Person	Contact Number(s)	Viewing Times
Kwambonambi Library 25 Bredelia Street Kwambonambi 3915	Ms Bongiwe Sithole	T: 035 580 1421	Mon-Fri: 8am-5pm

Should you wish to participate in the Scoping and Environmental Impact Reporting (S&EIR) process by contributing issues of concerns/comments, please register as an Interested and Affected party (I&AP) by completing the enclosed Registration and Comment Sheet or you can visit SEF’s website at <http://www.sefsa.co.za>. To register as an I&AP or comment on the project, click on “Stakeholder Engagement”. Click on the “register” button and complete the compulsory fields to register as an I&AP. On completion of these fields, you will be logged in. Click on stakeholder engagement under categories on the right hand side of the page. Then click the Draft Scoping Report for the **Proposed Owen Sitole Seed Cane Scheme**, to view the report and the associated appendices. Should you have any problems in obtaining the information from the Internet, please feel free to contact Strategic Environmental Focus (SEF) for assistance.

Following the commenting period, the Scoping Report will be updated and submitted to the KwaZulu-Natal Department of Environmental Affairs (KZN DAEA) for consideration. After the acceptance of the Scoping Report, the EIR phase will be initiated. The flow diagram below highlights the phases in the project where I&APs have the opportunity to participate within the process.



<b>PROJECT SUMMARY</b>	
Project Name	Proposed Owen Sitole Seed Cane Scheme
Farm Name and Portion	Farm Reserve No. 5; No. 15834 - GU
Brief Development Overview	Tongaat Hulett – Cane and Rural Development Unit propose to construct a 200ha seed cane scheme, which will also be utilised as a training facility on the Owen Sitole College of Agriculture.
Development Footprint	The site for the proposed development is approximately 200 hectares (ha) in extent.
Development	The application includes transforming the use of the land from primarily natural vegetation to the cultivation of sugar cane.
Site Photographs	Refer to Appendix 2

---

## ENVIRONMENTAL ASSESSMENT PRACTITIONER

---

Strategic Environmental Focus (Pty) Ltd (SEF) is a privately owned company and was formed in 1997 with the objective of providing **expert solutions to pressing environmental issues**. **SEF is one of Africa's largest multi-disciplinary consultancies**, offering sustainable environmental solutions to private and public sector clients. With our integrated services approach in the management of natural, built and social environments; and with over a decade of experience, we bring a wealth of knowledge and expertise to each project.

### **SEF's Vision**

***SEF is a national sustainability consultancy that provides integrated social, biophysical & economic solutions by forging strategic stakeholder relationships, underpinned by SEF's core values.***

### **SEF's Mission**

***SEF offers holistic sustainable solutions in response to global change.***

SEF has assembled a team of professionals, consisting of a core of environmental experts with extensive experience in dealing with Environmental Impact Assessments (EIAs), Public Participation Processes, Architectural and Landscape Architecture, Mining and Environmental Management. SEF also has a team of specialist practitioners such as specialists in Heritage Impact Assessments (HIA), Wetland Delineation and Functional Assessments; Wetland/ Riparian Rehabilitation, Aquatic Assessments; Ecological (Fauna, Avifauna and Flora) Assessment, Visual Impact Assessments (VIAs), Soils and Agricultural Potential Assessments, Socio-Economic Assessments, etc.

SEF is a Qualifying Small Enterprise and a **Level 2 contributor in terms of the Broad Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003)** and has a procurement recognition level of 135%.

SEF commits itself to comply with the requirements and the implementation of a Quality Management System (QMS). The QMS will be reviewed and implemented to continually improve efficiency and effectiveness of the organisation.

SEF uses a "green" approach to anything we embark on. We believe in using technology to our and the environment's best advantage. We encourage the use of green alternatives such as telephone and video conferencing instead of travelling for workshops and meetings and CDs instead of printed material, where possible.

The following project team members are involved in this S&EIR application process.

**Table 1: Project Team Members**

Name	Organization	Project Role
Mr Mark Ryan	SEF	Environmental Project Manager
Ms. Natasha Lalie	SEF	Environmental Manager
Ms Mamo Seliane	SEF	Public Participation

**Mr. Mark Ryan**

Mr Mark Ryan is an environmental consultant at SEF with seven (7) years' experience in Environmental Impact Assessment. Mark has special interest in EIA, environmental auditing and strategic environmental processes such as Environmental management Frameworks. Mark has a Master of Social Science Degree (M.Soc.Sci) in Geography and Environmental Management from the University of KwaZulu-Natal. Mark is responsible for conducting environmental impact assessments for a wide range of projects that involve wastewater treatment plants, infrastructure such as bridges and roads, bulk water pipeline projects, residential and mixed use developments. Mark has experience in project management and administration as well as the planning and compilation of Scoping Reports, Environmental Impact Reports and Environmental Management Plans. Mark also has experience in environmental auditing of construction activities such as residential developments, office parks and golf courses.

**Ms. Natasha Lalie**

Natasha has an MSc. Environment and Society and has been an Environmental Assessment Practitioner (EAP) for almost ten years. She has undertaken numerous Scoping Reports, Environmental Management Programmes (EMPr's) and Exemption Applications, as required by the Environment Conservation Act, 1989 (Act No. 73 of 1989); Environmental Screening and Feasibility Studies; and S&EIRs as well as BAs, as required by NEMA and the EIA Regulations. She has been involved in a wide range of projects, which include waste management, industrial, township establishments, mixed-use development, road upgrades, infrastructure developments, change of land use, lodge developments, proposed bulk water pipelines, proposed transmission power lines, proposed filling stations, shopping centre developments and so on.

**Ms. Mamoluoane Seliane**

Mamoluoane Seliane holds an MSc in Environmental and Geographical Science from the University of Cape Town. She conducts both Heritage Specialist and Environmental Practitioner duties. As an environmental practitioner, she undertakes feasibility and environmental impact studies, public participation as well as Environmental Control Officer (ECO) duties.

She in particular has experience with conducting Environmental Audits of projects during construction and rehabilitation phases including the provision of professional guidance to enforce the implementation of Environmental Authorizations (EA) and Environmental Management Programmes (EMPrs) and monitoring the contractor's compliance with the EMPr, EA and any specialist requirements. In addition, she is a member of the International Association for Impact Assessments (IAIA) and is a professional member of the Association of Southern African Professional Archaeologists (ASAPA).

**Table 2: Contact Details of Environmental Assessment Practitioner**

Name	Contact Details
Mr. Mark Ryan	Strategic Environmental Focus (Pty) Ltd Postal Address: PO Box 227, Pavilion, 3611 Tel: +27 31 266 1277 Fax: +27 31 266 6880 Email: mark@sefsa.co.za

---

## EXECUTIVE SUMMARY

---

### 1 INTRODUCTION

Strategic Environmental Focus (Pty) Ltd (SEF) has been appointed by Tongaat Hulett – Cane and Rural Development Unit, to undertake an environmental application process for the proposed development of a 200ha seed cane scheme on the Owen Sitole College of Agriculture.

A Scoping and Environmental Impact Reporting (S&EIR) process will be conducted for this project based on triggered listed activities within the Environmental Impact Assessment (EIA) Regulations of 2010 (Government Notice (GN) No's 543; 544; 545 and 546) promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA).

The purpose of the Scoping phase is to describe the proposed activity and those reasonable alternatives that have been identified, as well as the receiving environment that may be affected by the proposed project. The report also describes the required public participation process followed during the Scoping phase as well as how it will be carried out during the EIR phase. All Interested and Affected Parties (I&APs) will be provided with an opportunity to comment on the Draft Scoping Report. Comments on the Draft Scoping Report will be addressed in the Final Scoping Report. The Final Scoping Report will then be submitted to registered I&APs and the KwaZulu-Natal Department of Agriculture and Environmental Affairs (KZN DAEA), concurrently, for review.

The KZN DAEA will, based on the forthcoming Final Scoping Report, issue a decision on whether or not the application may proceed to the Environmental Impact Reporting (EIR) phase.

### 2 BRIEF PROJECT DESCRIPTION

The proposed Owen Sitole College of Agriculture Seed Cane Production development will occur on the following property:

- Farm Reserve No. 5; No. 15834 - GU

The site is located approximately 34 kilometres west of Richards Bay and is surrounded by agricultural practices and rural homesteads. The southern border of the site abuts the Enseleni River. Key areas located in close proximity to the site are Mhlana, Ntoyini Oqasini, Mabhuyeni, Ntweni and Nthunzi.

Access to the site has been provided in terms of the directions that follow below:

The Owen Sitole College of Agriculture is situated ±16 kilometres North of Empangeni on the old Mtubatuba road. To reach the college from Empangeni, take the Eshowe / Melmoth road and turn off right at the Ngwelezana / Old Main road intersection. Proceeding along this road, cross the railway line, pass the airstrip to the right and finally cross the iron bridge over the Nseleni river. The college signpost to the left is visible soon after the river crossing.

The general co-ordinates of the centre of the site are as follows:

- Latitude: 28°38'23.08"S
- Longitude: 31°56'17.20"

Please refer to the Locality Map, which has been included in Appendix 1.

The current land use zoning of the site is 'agricultural' and the site is being utilised for academic purposes in

the field of agriculture.

### 3 KEY IMPACTS

The following key impacts were identified and will be carried forward into the EIR phase for further investigation and assessment:

#### **Biophysical Impacts:**

- Potential impacts on surface water resources that occur in close proximity (various wetlands occur on site, perennial and non-perennial rivers traverse the site);
- Potential impacts of increased surface water run-off (viz. increased soil erosion) associated with the establishment of the seed cane scheme and vegetation clearing;
- Destruction of existing flora within the study area; and
- Faunal displacement, mainly during the construction phase of the project.

#### **Socio-Economic Impacts:**

- Increased dust and noise generation during the construction phase;
- Change in the visual character of the area;
- Potential impacts on heritage resources; and
- Job creation and the addition of the development to education and training within the college.

#### **Cumulative Impacts:**

- Impact on loss of vegetation communities and habitat for fauna; and
- Increased visual impacts associated with the proposed development as a result in change in sense of place.

### 4 PROJECT ALTERNATIVES

To give effect to the principles of NEMA and Integrated Environmental Management (IEM), an EIA should assess a number of reasonable and feasible alternatives that may achieve the same end result as that of the preferred project alternative. The following alternatives have been identified as part of this Scoping exercise:

#### **Alternative 1: Site/ Location Alternatives:**

No location alternatives have been investigated by the applicant. The applicant proposes to collaborate with DAEA to bolster seed cane production in the area and promote rural development through agricultural education. To meet this objective, the Owen Sitole College of Agriculture, operated by DAEA has been strategically identified as the site to undertake this activity.

#### **Alternative 2: Layout/ Design Alternatives:**

Alternative layout/ design plans may evolve from the findings of specialist studies that will be undertaken to inform the EIR phase. Design and layout alternatives will be proposed based on the environmental sensitivities. Alternatives with regards to the design and layout of the proposed development will also be investigated and assessed within the EIR phase.

#### **Alternative 3: Land-use Alternatives:**

The development is aimed at expanding seed cane production on the 200ha site and through this contributing to rural development and training in the field of agriculture. Consequently, no alternatives outside of this land-use have been investigated by the applicant. Specific detail of the proposal will be provided in the forthcoming Draft Environmental Impact Report (EIR).

**Alternative 4: No Development Alternative:**

The 'no-go' or 'do nothing' alternative is encapsulated by the premise that the applicant abandons the project, or is not approved by the KZN DAEA. The no-go option has been broken down below:

**Skills Transfer and development**

The applicant has confirmed commitment to contributing to the Owen Sitole College's curriculum and standard of education by providing skills and training to the sugarcane industry in KwaZulu-Natal and South Africa. However, in order to achieve these goals, the additional farm land to plant seed cane is required. Consequently, should the project be abandoned or not approved by DAEA then the opportunity to produce active and skilled professionals in this industry would be lost.

**Environmental**

From a purely ecological perspective, should the seed cane production development not proceed, the status quo will remain with the study area remaining unaffected by construction or operational related impacts.

## **5 CONCLUSIONS AND RECOMMENDATIONS**

In accordance with GN No. 543, the draft Scoping Report is aimed at describing the proposed activity and those reasonable alternatives that have been identified as well as the receiving environment that may be affected by the proposed project. In accordance with the EIA Regulations, an identification of relevant legislation and guidelines is also given as well as a description of the public participation process that will be followed.

Comments and/or concerns identified by Interested and Affected Parties (I&APs) during the review period of the Draft Scoping Report will be incorporated into the Final Scoping Report for further investigation during the EIR Phase to follow. The Final Scoping Report will then be submitted to the KZN DAEA for consideration, together with the Plan of Study for the EIR phase (PoS for EIR) of the project and other relevant supporting information.



---

## TABLE OF CONTENTS

---

<b>ENVIRONMENTAL ASSESSMENT PRACTITIONER .....</b>	<b>IV</b>
<b>EXECUTIVE SUMMARY .....</b>	<b>VI</b>
<b>1 INTRODUCTION .....</b>	<b>VI</b>
<b>2 BRIEF PROJECT DESCRIPTION .....</b>	<b>VI</b>
<b>3 KEY IMPACTS .....</b>	<b>VII</b>
<b>4 PROJECT ALTERNATIVES.....</b>	<b>VII</b>
<b>5 CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>VIII</b>
<b>TABLE OF CONTENTS.....</b>	<b>IX</b>
<b>LIST OF FIGURES.....</b>	<b>XI</b>
<b>LIST OF TABLES .....</b>	<b>XI</b>
<b>LIST OF ABBREVIATIONS AND ACRONYMS.....</b>	<b>XII</b>
<b>GLOSSARY OF TERMS.....</b>	<b>XIV</b>
<b>SECTION A: INTRODUCTION.....</b>	<b>1</b>
<b>A-1 DESCRIPTION OF PROPOSED ACTIVITY .....</b>	<b>1</b>
A-1.1 Locality.....	1
A-1.2 Surrounding Land Use .....	1
A-1.3 Details of the Project .....	2
<b>A-2 LEGAL REQUIREMENTS APPLICABLE TO THIS APPLICATION.....</b>	<b>2</b>
A-2.1 NEMA and the Environmental Impact Assessment Regulations.....	2
A-2.2 National Water Act, 1998 (Act No. 36 of 1998).....	3
A-2.3 Other Legal Requirements .....	4
A-2.3.1 Acts.....	4
A-2.3.2 Provincial Policies and/or Guidelines.....	6
A-2.3.3 Local Policies and/or Guidelines .....	7
<b>A-3 DETAILS OF THE APPLICANT .....</b>	<b>8</b>
<b>A-4 NEED AND DESIRABILITY OF THE PROJECT.....</b>	<b>8</b>
<b>SECTION B: THE RECEIVING ENVIRONMENT .....</b>	<b>11</b>
<b>B-1 BIOPHYSICAL ENVIRONMENT .....</b>	<b>11</b>
B-1.1 Geology and Geotechnical Suitability .....	11
B-1.2 Soils and Agricultural Potential.....	11
B-1.3 Vegetation and Landscape Features including Hydrology .....	11
B-1.4 Climate.....	12
B-1.5 Flora and Fauna.....	12
<b>B-2 SOCIAL ENVIRONMENT .....</b>	<b>13</b>
B-2.1 Demographic Conditions .....	13
B-2.2 Visual .....	15
B-2.3 Heritage .....	15
B-2.4 Noise.....	15
B-2.5 Air Quality .....	15
<b>SECTION C: ENVIRONMENTAL IMPACT ASSESSMENT (EIA)</b>	
<b>PROCESS .....</b>	<b>16</b>

<b>C-1</b>	<b>APPROACH TO THE EIA</b> .....	<b>16</b>
<b>C-2</b>	<b>GUIDING PRINCIPLES FOR AN EIA</b> .....	<b>16</b>
<b>C-3</b>	<b>S&amp;EIR TECHNICAL PROCESS</b> .....	<b>18</b>
C-3.1	Pre-application Consultation with the KZN DAEA.....	18
C-3.2	Application for Authorization.....	18
C-3.3	Information Gathering.....	18
C-3.4	Specialist Studies.....	19
<b>C-4</b>	<b>PUBLIC PARTICIPATION PROCESS</b> .....	<b>19</b>
C-4.1	Identification of Interested and Affected Parties.....	19
C-4.2	Public Announcement of the Project.....	19
C-4.3	Draft Scoping Report.....	19
C-4.4	Final Scoping Report.....	20
C-4.5	Public participation during the Impact Assessment Phase.....	20
	<b>SECTION D: IDENTIFICATION OF IMPACTS</b> .....	<b>21</b>
<b>D-1</b>	<b>IDENTIFICATION OF IMPORTANT ENVIRONMENTAL IMPACTS</b> .....	<b>21</b>
D-1.1	Biophysical Impacts .....	21
D-1.2	Socio-Economic Impacts:.....	21
<b>D-2</b>	<b>IDENTIFICATION OF CUMULATIVE IMPACTS</b> .....	<b>21</b>
	<b>SECTION E: ALTERNATIVES</b> .....	<b>23</b>
<b>E-1</b>	<b>IDENTIFICATION OF ALTERNATIVES</b> .....	<b>23</b>
	<b>SECTION F: PLAN OF STUDY FOR EIR PHASE</b> .....	<b>25</b>
<b>F-1</b>	<b>SCOPE AND PURPOSE OF THE EIR PHASE</b> .....	<b>25</b>
<b>F-2</b>	<b>METHODOLOGY OF THE EIR PHASE</b> .....	<b>25</b>
F-2.1	Specialist Investigations and Terms of Reference .....	25
F-2.1.1	<i>Ecological Assessment</i> .....	25
F-2.1.2	<i>Phase 1: Heritage Impact Assessment</i> .....	26
F-2.1.3	<i>Wetland/Riparian Delineation and Functional Assessment</i> .....	26
F-2.1.4	<i>Agricultural Assessment</i> .....	26
F-2.2	Approach to Assessment of Impacts .....	26
F-2.2.1	<i>Impact Identification and Assessment</i> .....	27
F-2.2.2	<i>Assessment Procedure: Proposed Impact Assessment Methodology</i> .....	27
F-2.2.3	<i>Integration of Specialist's Input</i> .....	30
F-2.2.4	<i>Mitigation Measures</i> .....	30
F-2.3	Approach to the Assessment of Cumulative Impacts.....	31
F-2.3.1	<i>Steps in Assessing Cumulative Impacts</i> .....	31
F-2.3.2	<i>Determining the Extent of Cumulative Impacts</i> .....	31
F-2.3.3	<i>Describing the Affected Environment</i> .....	31
F-2.3.4	<i>Assessment of Cumulative Impacts</i> .....	32
<b>F-3</b>	<b>PUBLIC PARTICIPATION PROCESS DURING THE EIR PHASE</b> .....	<b>32</b>
F-3.1	Stakeholder Engagement.....	32
F-3.2	Public Review of the Draft Environmental Impact Report .....	32
F-3.3	Public Review of the Final Environmental Impact Report .....	32
	<b>SECTION G: CONCLUSION AND RECOMMENDATIONS</b> .....	<b>33</b>
	<b>SECTION H: REFERENCES</b> .....	<b>34</b>
	<b>SECTION I: APPENDICES</b> .....	<b>35</b>

---

## LIST OF FIGURES

---

Figure 1: The eight guiding principles for the EIA process .....	17
Figure 2: Flow diagram of the Scoping and EIR process.....	18
Figure 3: The identification of Cumulative Impacts .....	21
Figure 4: Description of bio-physical assessment parameters with its respective weighting .....	29

---

## LIST OF TABLES

---

Table 1: Project Team Members.....	iv
Table 2: Contact Details of Environmental Assessment Practitioner .....	v
Table 3: Surrounding Land Use Table .....	1
Table 4: Example of an Impact Table.....	30

---

## LIST OF ABBREVIATIONS AND ACRONYMS

---

<b>ASAPA</b>	Association of South African Professional Archaeologists
<b>ASGISA</b>	Accelerated Shared Growth Initiative of South Africa
<b>BA</b>	Basic Assessment
<b>CSDM</b>	Chief Directorate Surveys and Mapping
<b>COGTA</b>	Department of Cooperative Governance and Traditional Affairs
<b>CRR</b>	Comments and Response Report
<b>DEA</b>	Department of Environmental Affairs (previously DEAT)
<b>DEAT</b>	Department of Environmental Affairs and Tourism
<b>DEIR</b>	Draft Environmental Impact Report
<b>DWA</b>	Department of Water Affairs
<b>EAP</b>	Environmental Assessment Practitioner
<b>EA</b>	Environmental Authorisation
<b>EIA</b>	Environmental Impact Assessment
<b>EIR</b>	Environmental Impact Reporting
<b>EMPr</b>	Environmental Management Programme
<b>GN</b>	Government Notice
<b>ha</b>	Hectares
<b>HIA</b>	Heritage Impact Assessment
<b>IDP</b>	Integrated Development Plan
<b>I&amp;APs</b>	Interested and Affected Parties
<b>IEM</b>	Integrated Environmental Management
<b>KZN DAEA</b>	KwaZulu-Natal Department of Agriculture and Environmental Affairs
<b>LED</b>	Local Economic Development

<b>ME</b>	Mitigation Efficiency
<b>NBSA</b>	National Spatial Biodiversity Assessment
<b>NEMA</b>	National Environmental Management Act, 1998 (Act No. 107 of 1998)
<b>NERSA</b>	National Energy Regulator of South Africa
<b>NHRA</b>	National Heritage Resources Act (Act No. 25 of 1999)
<b>NWA</b>	National Water Act, 1998 (Act No. 36 of 1998)
<b>PSEDS</b>	Provincial Spatial Economic Development Strategy
<b>PoS for EIR</b>	Plan of Study for Environmental Impact Report
<b>QMS</b>	Quality Management System
<b>RDP</b>	Reconstructive Development Programme
<b>SANBI</b>	South African Botanical Institute
<b>SEF</b>	Strategic Environmental Focus (Pty) Ltd
<b>SFM</b>	Significance Following Mitigation
<b>S&amp;EIR</b>	Scoping and Environmental Impact Reporting
<b>SDF</b>	Spatial Development Framework
<b>SFM</b>	Significance Following Mitigation
<b>ToR</b>	Terms of Reference
<b>VIA</b>	Visual Impact Assessment
<b>WOM</b>	Without Mitigation Measures
<b>WSA</b>	Water Services Authority
<b>WM</b>	With Mitigation Measures

## GLOSSARY OF TERMS

Applicant	Any person who applies for an authorisation to undertake an activity or to cause such activity to be undertaken as contemplated in sections 24(5), 24M and 44 of the National Environmental Management Act, 19998 (Act No. 107 of 1998).
Ecology	The study of the interrelationships between organisms and their environments.
Environment	The surroundings within which humans exist and that are made up of – (i) the land, water and atmosphere of the earth; (ii) micro-organisms, plant and animal life; (iii) any part or combination of (i) and (ii) and the interrelationships among and between them; and (iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.
Environmental Impact Assessment	Systematic process of identifying, assessing and reporting environmental impacts associated with an activity and includes basic assessment and S&EIR.
Environmental Management Programme	A working document on environmental and socio-economic mitigation measures, which must be implemented by several responsible parties during all the phases of the proposed project.
Interested and Affected Party	Any person or groups of persons who may express interest in a project or be affected by the project, positively or negatively.
Key Stakeholder	Any person who acts as a spokesperson for his/her constituency and/or community/organization, has specialized knowledge about the project and/or area, is directly or indirectly affected by the project or who considers himself/herself a key stakeholder.
Stakeholder	Any person or group of persons whose live(s) may be affected by a project.
Study Area	Refers to the entire study area encompassing all the alternatives as indicated on the study area or locality map.
Succession	The natural restoration process of vegetation after disturbance.
State Department	Any department or administration in the national or provincial sphere of government exercising functions that involve the management of the environment.

## SECTION A: INTRODUCTION

Strategic Environmental Focus (Pty) Ltd (SEF) has been appointed to undertake an environmental application process for the proposed development of a 200ha seed cane scheme at the Owen Sitole College of Agriculture. The scheme will also be utilised for education and training purposes within this academic institution. The site is located near Empangeni on the property listed below:

- Farm Reserve No. 5; No. 15834 - GU

The site occurs within the Umfolozi Local Municipality and the uThungulu District Municipality.

### A-1 DESCRIPTION OF PROPOSED ACTIVITY

#### A-1.1 Locality

The site is located approximately 34 kilometres west of Richards Bay and is surrounded by agricultural practices and rural homesteads. The southern border of the site abuts the Enseleni River. Key areas located in close proximity to the site are Mhlana, Ntoyini Oqasini, Mabhuyeni, Ntweni and Nthunzi.

Access to the site has been provided in terms of the directions that follow below:

The Owen Sitole College of Agriculture is situated  $\pm 16$  kilometres North of Empangeni on the old Mtubatuba road. To reach the college from Empangeni, take the Eshowe / Melmoth road and turn off right at the Ngwelezana / Old Main road intersection. Proceeding along this road, cross the railway line, pass the airstrip to the right and finally cross the iron bridge over the Nseleni river. The college signpost to the left is visible soon after the river crossing.

The general co-ordinates of the centre of the site are as follows:

- Latitude: 28°38' 23.08"S
- Longitude: 31°56' 17.20".

Please refer to the Locality Map, which has been included in Appendix 1.

The current land use zoning of the site is 'agricultural' and the site is being utilised for academic purposes in the field of agriculture.

#### A-1.2 Surrounding Land Use

To further place the site in context, the land uses within all four major compass directions are described in the table below.

**Table 3: Surrounding Land Use Table**

Direction	Land Use	Distance (m)
North	rural homesteads, commercial agriculture and watercourses.	Adjacent to site
South	Commercial agriculture, Nseleni River and its tributaries	Adjacent to the site
	A dam	1km

East	Rural homesteads	Adjacent to the site
West	Rural homesteads and watercourses	adjacent

### A-1.3 Details of the Project

The current land use zoning of the site is 'agricultural' and is used for academic purposes by the Owen Sitole College of Agriculture. The applicant proposes to construct a 200ha seed cane scheme that will also be incorporated into the academic curriculum of the college

With the submission of the Draft Scoping Report for comment, a layout illustrating the seed cane development is not available for review

## A-2 LEGAL REQUIREMENTS APPLICABLE TO THIS APPLICATION

With the submission of the application form informing the Department of intent to obtain an Environmental Authorisation, the KZN DAEA acknowledged receipt of the application form in a letter dated 25 November 2013. The following reference numbers were issued to the project viz, KZN DAEA Reference: DC25/0032/2013 and NEAS Reference No: KZN/EIA/0001352/2013.

The legislation, guidelines and policies applicable to this project are as follows:

### A-2.1 NEMA and the Environmental Impact Assessment Regulations

The EIA Regulations, promulgated under NEMA, focus primarily on creating a framework for co-operative environmental governance. NEMA provides for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by State Departments and to provide for matters connected therewith.

In terms of the EIA Regulations of 2010 and activities listed in GN No. 544 and 546 (requiring a Basic Assessment process) and GN No. 545 (requiring a S&EIR process), the following listed activities are deemed by the EAP to be applicable to the proposed Owen Sitole Seed Cane production project based on the information provided by the project proponent and their consulting engineers.

Indicate the number and date of the relevant notice:	Activity No (s) (in terms of the relevant notice) :	Describe each listed activity as per project description:
GNR 544, 18 June 2010	(11) The construction of: i. canals; ii. channels; iii. bridges; iv. dams; v. weirs; vi. bulk storm water outlet structures; vii. marinas; viii. jetties exceeding 50 square metres in size; ix. slipways exceeding 50 square metres	There are a number of watercourses located on the site, and to establish suitable roads for vehicles associated with the seed cane development, these systems may need to be crossed with low level causeways or culverts. Existing dirt roads may need to be upgraded and require intrusion into the watercourses.



	<p>in size;</p> <p>x. buildings exceeding 50 square metres in size; or</p> <p>xi. infrastructure or structures covering 50 square metres or more</p> <p>where such construction occurs within a watercourse or within 32 meters of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.</p>	
GNR 544, 18 June 2010	<p>(18) The infilling or depositing of any material of more than 5 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from</p> <p>i. a watercourse;</p> <p>ii. the sea;</p> <p>iii. the seashore;</p> <p>iv. the littoral active zone, an estuary or a distance of 100 meters inland of the high-water mark of the sea or an estuary, whichever distance is the greater</p> <p>but excluding where such infilling, depositing, dredging, excavation, removal or moving</p> <p>a. is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or</p> <p>b. occurs behind the development setback line.</p>	<p>There may be infilling or depositing of material into, or the dredging, excavation, removal or moving of soil, sand, pebbles or rock from a watercourse with regard to the preparation of the area required for the seed cane development. A Wetland Delineation and Functional Assessment will be conducted to verify if there are any watercourses in close proximity to the study area.</p>
GNR 545 of 2010	<p>(16) The physical alteration of virgin soil to agriculture, or afforestation for the purposes of commercial tree, timber or wood production of 100 hectares or more.</p>	<p>The applicant proposes the alteration of approximately 200ha of indigenous thorn veld to accommodate the seed cane development.</p>

It must be noted that activities requiring a Basic Assessment process, as well as activities requiring a S&EIR process are triggered by the proposed development. Therefore, according to the above listed activities, a situation arises, whereby; the legal requirements of the activity listed in terms of Government Notice (GN) No. 545 of 2010 supersede those of the activities listed in terms of GN No. 544 and 546 of 2010, and as such **this application shall undergo a S&EIR process.**

The aforementioned listed activities are deemed to include activities that could potentially have a detrimental impact on the social and biophysical state of an area and as such, are required to undergo an EIA process.

## A-2.2 National Water Act, 1998 (Act No. 36 of 1998)

The National Water Act, 1998 (Act No. 36 of 1998) (NWA) aims to provide management of the national water resources to achieve sustainable use of water for the benefit of all water users. This requires that the quality of water resources is protected as well as integrated management of water resources with the delegation of powers to institutions at the regional or catchment level. The purpose of the Act is to ensure that the nation's

water resources are protected, used, developed, conserved, managed and controlled in responsible ways.

Of specific importance to this application is Section 19 of the NWA, which states that an owner of land, a person in control of land or a person who occupies or uses the land which thereby causes, has caused or is likely to cause pollution of a water resource must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring and must therefore comply with any prescribed waste standard or management practices.

Due to the various streams, tributaries and drainage lines that occur on site, according to the NWA, the proposed development may trigger the following water uses listed in Section 21:

- (c) impeding or diverting the flow of water in a watercourse; and
- (i) altering the bed, banks, course or characteristics of a watercourse.

Accordingly, the proposed project may thus require a water use licence, which is administered by the Department of Water Affairs (DWA).

## **A-2.3 Other Legal Requirements**

### ***A-2.3.1 Acts***

#### ***Constitution of the Republic of South Africa***

The Constitution of the Republic of South Africa has major implications for environmental management. The main effects are the protection of environmental and property rights, the change brought about by the sections dealing with administrative law, such as access to information, just administrative action and broadening of the locus standi of litigants. These aspects provide general and overarching support and are of major assistance in the effective implementation of the environmental management principles and structures of the NEMA. Section 24 in the Bill of Rights of the Constitution specifically states that:

Everyone has the right -

- To an environment that is not harmful to their health or well-being; and
- To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that -
  - Prevent pollution and ecological degradation;
  - Promote conservation; and
  - Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

#### ***National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)***

The purpose of the Biodiversity Act is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed.

This Act is applicable to this application for environmental authorisation, in the sense that it requires the project applicant to consider the protection and management of local biodiversity.

#### ***National Heritage Resources Act, 1999 (Act No. 25 of 1999)***

This Act legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 hectares (ha) and where linear developments (including roads) exceed 300 metres in length. The Act makes provision for the potential destruction to existing sites, pending the

archaeologist's recommendations through permitting procedures. Permits are administered by the Amafa KwaZulu-Natal (Provincial Heritage Resources Authority).

***National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)***

The purpose of this Act is to provide for the protection, conservation and management of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes.

***Subdivision of Agricultural Land Act, 1970 (Act No. 70 of 1970)***

The purpose of the Act is to control the subdivision and, in connection therewith, the use of agricultural land. The Minister of Agriculture, Forestry and Fisheries ("Minister of Agriculture") must consent to the proposed subdivision.

***Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)***

To provide for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.

***Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)***

To provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected therewith.

***National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)***

To reform the law regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development; to provide for institutional arrangements and planning matters; to provide for national norms and standards for regulating the management of waste by all spheres of government; to provide for specific waste management measures; to provide for the licensing and control of waste management activities; to provide for the remediation of contaminated land; to provide for the national waste information system; to provide for compliance and enforcement; and to provide for matters connected therewith.

***Promotion of Access to Information Act, 2000 (Act No. 2 of 2000)***

The Act recognises that everyone has a Constitutional right of access to any information held by the state and by another person when that information is required to exercise or protect any rights. The purpose of the Act is to foster a culture of transparency and accountability in public and private bodies and to promote a society in which people have access to information that enables them to exercise and protect their rights.

***Planning and Development Act, 2008 (No. 6 of 2008)***

To provide for the adoption, replacement and amendment of schemes, to provide for the subdivision and consolidation of land; to provide for the development of land outside schemes; to provide for the phasing or cancellation of approved layout plans for the subdivision or development of land; to provide for the alteration, suspension and deletion of restrictions relating to land; to establish general principles for the permanent closure of municipal roads or public places; to provide for the adoption and recognition of schemes, to provide for compensation in respect of matters regulated by the Act; to establish the KwaZulu-Natal Planning and Development Appeal Tribunal; to provide for provincial planning and development norms and standards; and to provide for matters connected therewith.

### ***KZN Ingonyama Trust Act (3 of 1994)***

Ingonyama Trust Board is an entity responsible for administration of Ingonyama Trust land which is about 2.8 million hectares in extent spread throughout the province of KwaZulu – Natal in the republic of South Africa. The Ingonyama Trust was established in 1994 by the KwaZulu Ingonyama Trust Act, (Act No 3 of 1994) to hold the land in title for “the benefit, material welfare and social well-being of the members of the tribes and communities” living on the land. The Act was subsequently amended by the KwaZulu – Natal Ingonyama Trust Amendment Act No 9 of 1997.

His Majesty the King is the sole trustee. The Amendment Act provided among other things the establishment of Ingonyama Trust Board to administer the affairs of the Trust and the Trust land.

The Board has eight members and Isilo who is the Chairperson of the Board. In terms of the Act he has power to nominate another person to act on his behalf.

Ingonyama Trust prides itself with the commitment of being the largest property owner in the province of KwaZulu – Natal and is providing and will continue providing sustained and growing income for its beneficiaries. In its operations it ensures that there are tangible benefits throughout the value chain of activities taking place on land.

During the past 19 years it has been in existence it has managed to ensure that the people residing in traditional areas of KwaZulu – Natal who are the rightful landowners have gained access to a wide range of socio-economic development spin offs which resulted in the empowerment of the communities through Local Economic Development, Education and Secure Tenure.

### ***A-2.3.2 Provincial Policies and/or Guidelines***

#### ***Integrated Environmental Management (IEM)***

IEM is a philosophy for ensuring that environmental considerations are fully integrated into all stages of the development process. This philosophy aims to achieve a desirable balance between conservation and development (DEAT, 1992). The IEM guidelines intend encouraging a pro-active approach to sourcing, collating and presenting information in a manner that can be interpreted at all levels.

The DEA Integrated Environmental Management Information Series guidelines are also considered during this S&EIR application process.

#### ***The National Building Regulations and Building Standards Act, 1997 (Act No. 103 of 1997)***

“To promote the promotion of uniformity in the law relating to the erection of buildings in the areas of jurisdiction of local authorities for the prescribing of building standards and for matters connected therewith”.

#### ***National Spatial Biodiversity Assessment***

The National Spatial Biodiversity Assessment (NSBA) classifies areas as worthy of protection based on its biophysical characteristics, which are ranked according to priority levels.

#### ***Protected species – Provincial Ordinances***

Provincial ordinances were developed to protect particular plant species within specific provinces. The protection of these species is enforced through permitting requirements associated with provincial lists of protected species. Permits are administered by the Provincial Departments of Environmental Affairs.

#### ***KwaZulu-Natal Heritage Act, 2008 (Act No. 4 of 2008)***

KwaZulu-Natal Heritage Act provides for the conservation, protection and administration of both the physical and the living or tangible heritage resources of the Province of KwaZulu-Natal; and to establish a statutory Council to administer heritage conservation in the Province. Amafa / Heritage KwaZulu-Natali is the provincial heritage conservation agency for KwaZulu-Natal. Amafa was established as a statutory body in terms of the KZN Heritage Act of 1997, replaced by the KZN Heritage Act of 2008.

**Provincial Spatial Economic Development Strategy (PSEDS)**

The PSEDS is aimed at transforming the structure of the economy and narrowing and eventually eliminating the gap between the first and second economies. The four pillars of the strategy are as follows:

- Increasing investment in the province;
- Skills and capacity building;
- Broadening participation in the economy; and
- Increasing competitiveness.

The PSEDS identifies the sectors of the provincial economy which will drive the growth of the province and address unemployment and poverty as follows:

- Agriculture - including agri-industry (with opportunities to impact considerably on the economic needs of the poor through Land Reform);
- Industry - including heavy and light industry and manufacturing;
- Tourism - including domestic and foreign tourism; and
- Service sector - including financial, social, transport, retail and government.

The logistics and transport sector (including rail) in the services sector are also identified as important subsectors underpinning growth in all four sectors.

The PSEDS also acknowledges that the potential for industrial development in the province is anchored by the nodes of eThekweni and Umhlatuze. The corridors between these two nodes form the primary zone of industrial development in the province.

One of the principles of the PSEDS is that settlements and economic development opportunities should be channelled into activity corridors and nodes that are adjacent to or link the main growth centres. The eThekweni – Umhlatuze development corridor has been identified as having the potential for greatly impacting on economic growth and the development of impoverished areas.

**Accelerated Shared Growth Initiative for South Africa (ASGISA)**

ASGISA resulted from Government's commitment to halve unemployment and poverty by 2014 and was launched in February 2006. ASGISA is not a government programme but a national initiative supported by key groups in the economy viz, Business, Labour, State-owned enterprises, Government economic agencies, Entrepreneurs and all spheres of government<sup>1</sup>.

**A-2.3.3 Local Policies and/or Guidelines****Umfolozi Local Municipality Integrated Development Plan (IDP) 2012/2017**

In terms of the Municipality's IDP, the new vision for the area is "To provide Service Delivery that creates a better life for all people of Mfolozi". With sustainable employment and economic opportunities as well as promoting sustainable natural environments being identified as the key theme of forward planning for this region, it will be important to balance the social and economic benefits of expanding the Owen Sitole Agricultural College through the proposed development of a 200ha seed cane scheme, and ensuring that critical areas of biodiversity importance are not impacted negatively.

The IDP has identified a need to establish agricultural support services which will provide training and extension services. The establishment of agricultural support services will contribute to the development of the agricultural sector in terms of technology, market, information and mentorship. The key themes of this IDP and

---

1 <http://www.info.gov.za/asgisa/>

the development proposal are read in light of the Umfolozi Municipality's commitment to establish the agricultural sector.

The key themes of the IDP are:

- To promote social and economic development;
- Sustainable and affordable service delivery;
- Promoting itself as a preferred tourist destination;
- Establishing itself as an investor-friendly industrial node; and
- Effective and efficient leadership.

The Owen Sitole College of Agriculture has been identified in the IDP as an important driver of developing agriculture in the area as well as community partnerships within the Municipality. As an example, the school has bought and manages a hatchery of indigenous fowls that sustain the surrounding communities (chicks are sold to small farmers in the area).

In the context of the proposed development of a seed cane scheme within the Owen Sitole College of Agriculture, with the focus being placed on agriculture as one of the sectors to improve and enhance employment of skilled and unskilled labour and graduates, it is important to ensure that one of the Municipality's key mission's (Sustainable Environmental Management) is implemented. From the preliminary investigations that have already been undertaken, the site is understood to contain Zululand Coastal Thornveld and is classified as a critically endangered vegetation type.

Therefore, in terms of the development planning policies for this local Municipality, in order for DAEA to be in a position to take an informed decision on the application, it is imperative that strong ecological assessments of the site are read in conjunction with a detailed need and desirability of the proposal. This will allow the EAP to present evidence factually and scientifically and ensure that a decision is taken that can be described as sustainable in terms of all relevant legislation and policies.

### A-3 DETAILS OF THE APPLICANT

The details of the project applicant are:

Name of Applicant	Postal Address	Relevant Numbers
Mrs N Mhlongo Tongaat Hulett – Cane and Rural Development Unit	PO Box 3 Tongaat 4400	Tel: 032 439 5560 E-mail: Nkonzo.Mhlongo@tongaat.com

### A-4 NEED AND DESIRABILITY OF THE PROJECT

Tongaat Hulett recognizes the importance of how sustainable management overlaps with the socio-economic and political dynamics of agriculture, resource use (land and water), agri-processing, food demand and supply, renewable energies, job creation and economic growth. These aspects have been identified as important benefit streams to add value to their stakeholders.

The Department of Agriculture and Environmental Affairs (DAEA) mandate is to facilitate and optimize agricultural land use, sound environmental management and comprehensive rural development. This

department operates in an environment where large portions of the population do not have food security and are impacted by increasing levels of unemployment. To rectify this situation DAEA engages with the communities to provide education and training in the agricultural sector and awards bursaries and internships to development scarce skills.

Public-private partnerships emerge as a key opportunity to share knowledge, skills and expertise with the communities in need of upliftment, and can be achieved through the conduit of agricultural colleges. Due to the synergy of the objectives shared by Tongaat Hulett and DAEA, a resolution has been taken to collaborate and create agricultural colleges that can be considered centres of excellence (benefit of farmers, students, the state and surrounding communities) and are mutually beneficial to the applicant and DAEA.

With specific reference to the Owen Sitole College of Agriculture, Tongaat Hulett and DAEA have committed to creating an environment that facilitates public and private investment for the purpose of making this institution a centre of excellence in sugarcane agriculture, producing high quality students with specialist knowledge in agriculture and stimulating social upliftment of rural communities, using sugarcane agriculture as the principal mechanism of development.

To achieve the successful partnership detailed above, collaboration will be pursued in respect of (but not limited to) the following aspects of local economic development:

### **1. Seed Cane Development Initiative**

- a) Revitalizing and expanding sugar cane activities in areas that supply Tongaat Hulett's sugar mills.
- b) Proposal to make 200ha of land available for the establishment of a seed cane scheme.
- c) Commitment of resources to the preparation of the land for this activity.
- d) Provision of irrigation to stimulate the seed cane scheme.
- e) Effective utilization of the existing dam to irrigate the cane.
- f) Effective management of seed cane production, drawing on external skills where required.
- g) Contribution of resources over and above finances to ensure effective management, capacity building and training of staff and students.
- h) Revenue derived from the operation that is not required to continue with agricultural activities will be utilized to implement Spatial Economic Development projects within the college.
- i) Successful public-private partnerships will continually be pursued to expand the seed cane scheme. Investment will also be made in communal areas to ensure a sustainable supply to target areas.

### **2. Socio-economic development initiatives**

- a) Socio-economic development is an integral part of business practice and the applicant strives to contribute to the communities that surround Tongaat Hulett operations.
- b) To achieve the applicant's social responsibility policies it is important to balance existing sugar cane development initiatives and community upliftment. These policies include, but are not limited to:
  - i. Rural school building and renovation
  - ii. Academic bursaries and/or scholarships
  - iii. Agricultural training programmes
  - iv. Food security programmes
  - v. HIV and Aids awareness programmes
  - vi. Enterprise development
- c) The applicant will continue to identify and initiate socio-economic development projects in collaboration with DAEA to support rural communities surrounding the Owen Sitole Agricultural College.

- d) Socio-economic development projects will continually be investigated within the Owen Sitole School of Agriculture.

### **3. Localization and capacity building**

- a) Strategies to promote local economic development, job creation opportunities, skills development and capacity building in the areas Tongaat Hulett operate are considered to be important.
- b) Transformation, equal opportunity and the creation of a diverse employee base is important in all regions within which Tongaat Hulett operate.
- c) To achieve meaningful benefits to the college and surrounding communities, Tongaat Hulett undertakes to actively promote and maximize localization and capacity building in sugarcane production, capacity building and training.
- d) Tongaat Hulett and DAEA undertake to exchange lessons, experiences and methodologies associated with successful seed cane projects where necessary.
- e) Where the required resources are available, Tongaat Hulett commit to assist DAEA with sugarcane training to the college's staff and registered students.



---

## **SECTION B: THE RECEIVING ENVIRONMENT**

---

In order to, with any level of confidence, assess the potential impacts of the proposed Owen Sitole Seed Cane on the receiving environment, one needs to first assess the baseline conditions found over the study area. Using this *Status Quo* one can then, broadly speaking, determine the likely impacts that will emanate from a specific development typology on a well-defined receiving environment.

### **B-1 BIOPHYSICAL ENVIRONMENT**

#### **B-1.1 Geology and Geotechnical Suitability**

Geologically, Mucina and Rutherford (2006) suggest that the area is situated almost entirely on Letaba formation basalts of the Karoo Supergroup. Soils are mainly black with a high (35% - 55%) clay content and depth in the range of 200mm – 300mm.

#### **B-1.2 Soils and Agricultural Potential**

The investigated study site falls within the Bio-Resource Unit (BRU) Ya6, within Bio-Resource Group (BRG) 1, classified as Moist Coast Forest, Thorn and Palm Veld in Empangeni. Main land use on site is mainly veld grazing. The main land use entails grazing, interspersed with abandoned or underutilized fields. The poor quality grazing in this area is consistent with Thorn and PalmVeld merging into dry Zululand Thornveld. The study area is located within the quaternary catchment W12H, within the Mhlathuze Sub-Water Management Area and Usuthu to Mhlatuzi Water Management Areas, along the Nseleni River.

The soil parent materials found in this area are the Ngweni and Lubana Formations of the Empangeni Metamorphic Suite and the Letaba Formation of the Lebombo Group. As a general rule, red soils are best suited from an agricultural potential perspective, followed by brown soils, black soils and grey soils. In this instance, the brown and black soils that dominate the study area are derived from a conglomerate of parent materials, largely dolerite and basalt, brought about by that occurred in this area during the breakaway of Gondwanaland. The traversed catena comprised of black margalitic soils, including Arcadia (Ar), Inhoek (In), Mayo (My), and Milkwood (Mw) soil forms, also poorly drained Willowbrook (Wo) and Rensburg (Re), as well as young Mispah (Ms) and Glenrosa (Gs) soil forms. Cultivated Bonheim (Bo) soils, derived from alluvium, were also identified towards the valley bottoms on the west of the study area.

These identified soil forms are consistent with the soil parent materials and geological history of the site. Vertic soils, including Ar and Re are commonly well known to shrink remarkably when dry, resulting in formation of visible cracks as shown below in Figure 1, and swell back to regular structure upon wetting.

The agricultural assessment that has been commissioned by the applicant to provide specialist input on the viability of the proposed development of a seed cane production scheme will be included in the Draft EIA report.

#### **B-1.3 Vegetation and Landscape Features including Hydrology**

Gently rolling landscapes supporting wooded grassland dominated by *Themeda triandra*. The bush clumps are a strong feature and are more numerous on deeper soils, with *Phoenix reclinata* and *Gymnosporia senegalensis* usually dominant. These plant communities are species rich relative to the surrounding vegetation units. They grade into dense Acacia woodland on dry slopes and riverine bushland thickets and Lowveld Riverine Forest in valley bottoms.

From a hydrological perspective, the southern boundary of the site abuts the Enseleni River, which contains a number of tributaries. These tributaries include The Qwaka, Okula and a number of unnamed systems. A dam is located in the upper northern reaches of the site. Accordingly, the proposed project may require a water use licence, which is administered by the Department of Water Affairs (DWA).

## B-1.4 Climate

The study area experiences a strong seasonal summer rainfall although some rain is also experienced in winter. The mean annual precipitation is approximately 800-1050mm. Frost is very infrequent. The average midday temperature ranges from 23°C in July to 29°C in January. The region is the coldest in July when the temperature drops to 11°C on average during the night. Summers are hot to very hot, while winters are mild, with hardly any frost (Mucina & Rutherford, 2006).

## B-1.5 Flora and Fauna

### Regional Vegetation

The study site is located within the Indian Ocean Coastal Belt which is the biome covering the seaboard in KwaZulu-Natal and Eastern Cape (Mucina & Rutherford, 2006). The tropical appearance of the vegetation associated with the Indian Ocean Coastal Belt is a result of a mixture of growth forms such as trees, lianas and epiphytes while grass plays a subordinate role. The land use in this biome is primarily sugarcane farming in KwaZulu-Natal and subsistence farming in the Eastern Cape which has resulted in the loss of vast areas containing natural vegetation. The Indian Ocean Coastal Belt is divided into smaller units known as vegetation types. According to Mucina & Rutherford (2006), the study area is situated within the Zululand Coastal Thornveld with Maputaland Coastal Belt immediately south east of the study area.

Zululand Coastal Thornveld has been identified by the ecologist on site and according to Mucina and Rutherford (2006) is expected to consist of gently rolling hills which support wooded grassland while the bush clumps are a strong feature and are more numerous on deeper soils, with *Phoenix reclinata* and *Gymnosporia senegalensis* usually dominant in these areas. Important small trees in this vegetation type include *Acacia natalitia*, *A.nilotica* and *Phoenix reclinata* while succulent trees include *Euphorbia tirucalli* and *Euphorbia ingens*. Graminoid species dominant in Zululand Thornveld include *Eragrostis capensis*, *Panicum maximum*, *Sporobolus pyramidalis*, *Themeda triandra*, *Tristachya leucothrix*, *Aristida congesta*, *Eragrostis curvula*, *Eragrostis racemosa*, *Setaria sphacelata* and *Hyparrhenia hirta*. The herbaceous layer is dominated by *Berkheya setifera*, *Berkheya speciosa*, *Centella asiatica*, *Eriosema cordatum*, *Gerbera viridifolia*, *Helichrysum nudifolium*, *Hypericum aethiopicum*, *Indigofera hiliaris*, *Senecio erubescens*, *Vernonia oligocephala* and *Pelargonium luridum*.

According to Mucina & Rutherford (2006), Zululand Coastal Thornveld is classified as Endangered with nothing conserved in statutory reserves and more than 58% transformed by cultivation, plantations, mining and urbanisation. Very little of the natural plant communities remain intact with heavy grazing depleting the grassland and wood harvesting depleting the bush clumps. It is currently rare to find a site that still represents natural plant composition.

Mucina and Rutherford (2006) further indicate that the Owen Sitole College of Agriculture is a large estate containing Zululand Coastal Thornveld (endangered) and this portion is important for the conservation of the vegetation type (Mucina & Rutherford, 2006). The assessment of the proposed removal of this vegetation type to accommodate the expansion of agricultural practices has been discussed in the sections that follow, but will be addressed in detail in the Draft EIA report.

## **Fauna**

The savanna biome supports a wide variety of faunal species, the occurrence of which depends on habitat and topographical features within the landscape. Savannas are complex ecosystems including rivers, wetlands, rocky areas, a large woody component and some open areas. This creates diverse habitat for bird, mammal, reptile, amphibian and invertebrate species. The faunal habitat in the study area consisted of thornveld (dense and open), rocky areas, drainage lines, man-made dams and the Cwaka River.

Riparian environment and dense vegetation provides abundant cover, feeding and breeding habitat for many species of invertebrates, birds, mammals, reptiles and amphibians and these areas are therefore generally support high faunal diversity.

Furthermore, riparian vegetation and drainage lines also tend to be corridors of movement through the landscape for fauna and flora. They are especially important in transformed landscapes where most of the natural terrestrial habitat has been destroyed or transformed. The Cwaka River and its tributaries is one such river in the study area where the river system creates a continuous path through a landscape dominated by agriculture and human settlements, providing essential corridors for movement to remaining natural areas.

## **Specialist Study**

At this stage it is important to note that an ecological assessment of the site (flora and fauna) has been commissioned by the applicant. The detailed Terms of Reference for this assessment is included in Section F and the report including results, findings and mitigation measures will be presented in the Draft EIA report for public review and comment.

## **B-2 SOCIAL ENVIRONMENT**

### **B-2.1 Demographic Conditions**

From a brief assessment of the IDP, it has been established that the majority of the population of this Municipality are located in 5 traditional authority areas, 21 rural settlements and 61 farms. This equates to a population percentage of 58%, which surpasses the economic centre of Richards Bay that accommodates 36.5% of the population.

### **Socio-economic profiles**

Richards Bay falls within the fastest growing provincial economies at an average rate of 4,3% per annum. The Port of Richards Bay is one of the two largest and busiest Ports in Africa creating a drive for the area to be one of the major industrial investment opportunities. The Port plays an important economic role not only for this province but for the whole of South Africa (SA). Whilst we are presently export oriented, the potential for import prospects are being contemplated. The City also functions as a district node and dominant commercial centre in the uThungulu District providing greater economic opportunities for the town and hinterland. The key feature of the Umfolozi Municipality is proximity to the N2 Development Corridor, eThekweni-Ilembe-uMhlatuze Corridor. The Dube Trade Port, (King Shaka Airport), is approximately 145 kilometers away from the City is also which again makes it an added advantage to the area in terms of investment attraction.

The area is the third most important in KZN in terms of economic production, contributing 16.7% to national Gross Domestic Product (GDP) whilst also the third most important primary manufacturing area in KwaZulu Natal (KZN) in terms of economic production. Manufacturing is highly specialized export orientated, largely concentrated on basic iron and steel, paper and printing as well as food and beverages. The sector characterized by highly sophisticated manufacturing processes. The large scale industrial strengths of the centre comprise of a varied industrial base of coal terminals and aluminium smelters, coupled with an impressive number of industries including mining companies and paper mills, forestry, production of materials handling equipment, as well as fertiliser and special chemicals production.

Mfolozi is an ideal place for both industrial and residential development. There is also a great opportunity for growth in the timber industry which is currently in existence. The area has a massive mining company called Richards Bay Minerals (RBM) and two timber companies which are SAPPI and Mondi. The operations of RBM has however gradually been declining over the last 10 years as the mining operations are moving more to the south of the Richards Bay area.

The manufacturing sector in the municipality almost exclusively exists of the forestry and wood processing operations of SAPPI and Mondi. The activity of these two industries have been growing and expanding over the last 10 years at a rapid rate leading to the growth of employment in the area.

The forestry and timber sectors are currently the major economic sectors in the area. Mfolozi has a potential for farming and cultivation of crops. Its climate is hot and humid with a rainfall of 600mm - 1300mm. Despite the fact that some areas in Mfolozi have a potential for agriculture, land in the Ingonyama Trust areas is not to the extent that it could be used. It is mainly used at a subsistence or traditional agricultural level. A substantial amount of food such as maize is imported to the region every month. Agriculture is regarded as one of the ways that the local economy could be made to grow and as a means of alleviating poverty. The lowest potential earners tend to be involved in agricultural services. People do not actually view agricultural activities in the light of being/becoming LED projects. This sector is highly vulnerable to natural disasters such as drought and pests. Sugarcane and Forestry are the main agricultural crops which emerging farmers concentrate on. However, vegetable gardens are gaining momentum and have a potential market access. Maize is also grown, but it is grown on a small scale with no intention of selling or processing for income.

Small scale farmers find it difficult to access external markets due to fierce competition from commercial farmers who use economics of scale to their advantage. For small scale farmers to succeed and overcome these challenges, they should consider farming legal entities i.e. co-operatives, out growers scheme etc.

Mfolozi should consider various strategic plans for agriculture. The strategies should take note of the following weaknesses:

- The need to consider the impacts of HIV/AIDS on development planning
- The need to use a livelihoods framework in planning development
- Inherent problems with institutional vehicles such as co-operatives (all institutions have weaknesses . these should be clearly stated with checks to overcome pitfalls)
- The possibility of Mfolozi being marginalised in the districts agricultural development strategy,
- Genders focus on agriculture particularly in the light of the impact of HIV/AIDS on women.

A strategy to bring the youth into agriculture should be considered. Agricultural development in some areas has been limited by historic dispossessions of land and land disputes. These issues can be resolved in co-operation with COGTA.

Two major stakeholders in the sugar industry are currently engaged in encouraging small sugarcane growers to have economic sustainable businesses. Small sugarcane growers in the traditional areas are encouraged to grow more sugarcane to increase the sugarcane tonnage to the mills. This in turn will result in growth of the small sugarcane growers as they will increase their production. Currently there are about 700 sugarcane growers at Mfolozi with an average land of 2 hectares.

### **The Local Economy**

The Umfolozi Municipality has prioritised the following sectors:

- Infrastructure
- The agricultural value chain
- The mining value chain
- The green economy

- Manufacturing sectors, which are included in IPAP2, and
- Tourism and certain high-level services.

## **B-2.2 Visual**

Scenic value can be described as the reaction to aesthetics of the environment as perceived by an individual or a group and therefore it is a very subjective perception. In terms of surrounding landscape compatibility, the proposed development will not be out of character, since there are existing low-scale rural homesteads surrounding the northern and southern portions of the site. Forestry is the predominant land use surrounding the site. Anthracite mining occurs to the west and east of the site. These land uses are not visible from the site. In light of this, there are few visual receptors in the surrounding rural landscape setting and the proposed development will not impact on the view shed of these land users as a change in the sense of place.

## **B-2.3 Heritage**

As per the National Heritage Resources Act, 1999 (Act No. 25 of 1999), the proposed development will undergo a Phase 1 Heritage Impact Assessment, due to the size of the development exceeding 0.5 ha. Should any heritage artefacts be uncovered, the relevant heritage agency will be appropriately consulted.

## **B-2.4 Noise**

Noise control must form part of the planning stage of any development. During the construction phase, noise may be generated as a result of construction related activities such as: the use of machinery and equipment, and the movement of construction vehicles, etc. These potential noise impacts must be mitigated, where possible. This will be investigated during the EIR phase of the project and suitable mitigation measures will be recommended.

## **B-2.5 Air Quality**

Vehicles travelling on exposed surfaces, earthworks as well as wind are the main generators of dust. The nuisance and aesthetic impacts associated with the dust generated during the construction phase should be minimal, if mitigating measures are implemented.

Dust generated off the earth's surface is generally regarded as a nuisance rather than a health or environmental hazard. On a large scale dust will impair atmospheric visibility; however, in the context of the proposed activity, the impact of dust production on air quality should be minimal taking into account that effective dust suppression techniques are available and will be recommended during the EIR phase.

---

## SECTION C: ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PROCESS

---

### C-1 APPROACH TO THE EIA

An Environmental Impact Assessment (EIA) is an effective environmental planning tool. It identifies the environmental impacts of a proposed project and assists in ensuring that a project will be environmentally acceptable and integrated into the surrounding environment in a sustainable way.

The EIA for this project complies with the requirements of the National Environmental Management Act, 1998 (Act 107 of 1998) [NEMA] and the NEMA EIA Regulations, 2010 of the DEA. The guiding principles of an EIA are listed below.

#### Definition of the term “environment”

The term “environment” is used in the broadest sense in an environmental impact assessment. It covers the physical, biological, social, economic, cultural, historical, institutional and political environments.

### C-2 GUIDING PRINCIPLES FOR AN EIA

The EIA must take an open participatory approach throughout. This means that there should be no hidden agendas, no restrictions on the information collected during the process and an open-door policy by the proponent. Technical information must be communicated to stakeholders in a way that is understood by them and that enables them to meaningfully comment on the project.

There should be on-going consultation with Interested and Affected Parties (I&APs) representing all walks of life. Sufficient time for comment must be allowed. The opportunity for comment should be announced on an on-going basis. There should finally be opportunities for input by specialists and members of the public. Their contributions and issues should be considered when technical specialist studies are conducted and when decisions are made.

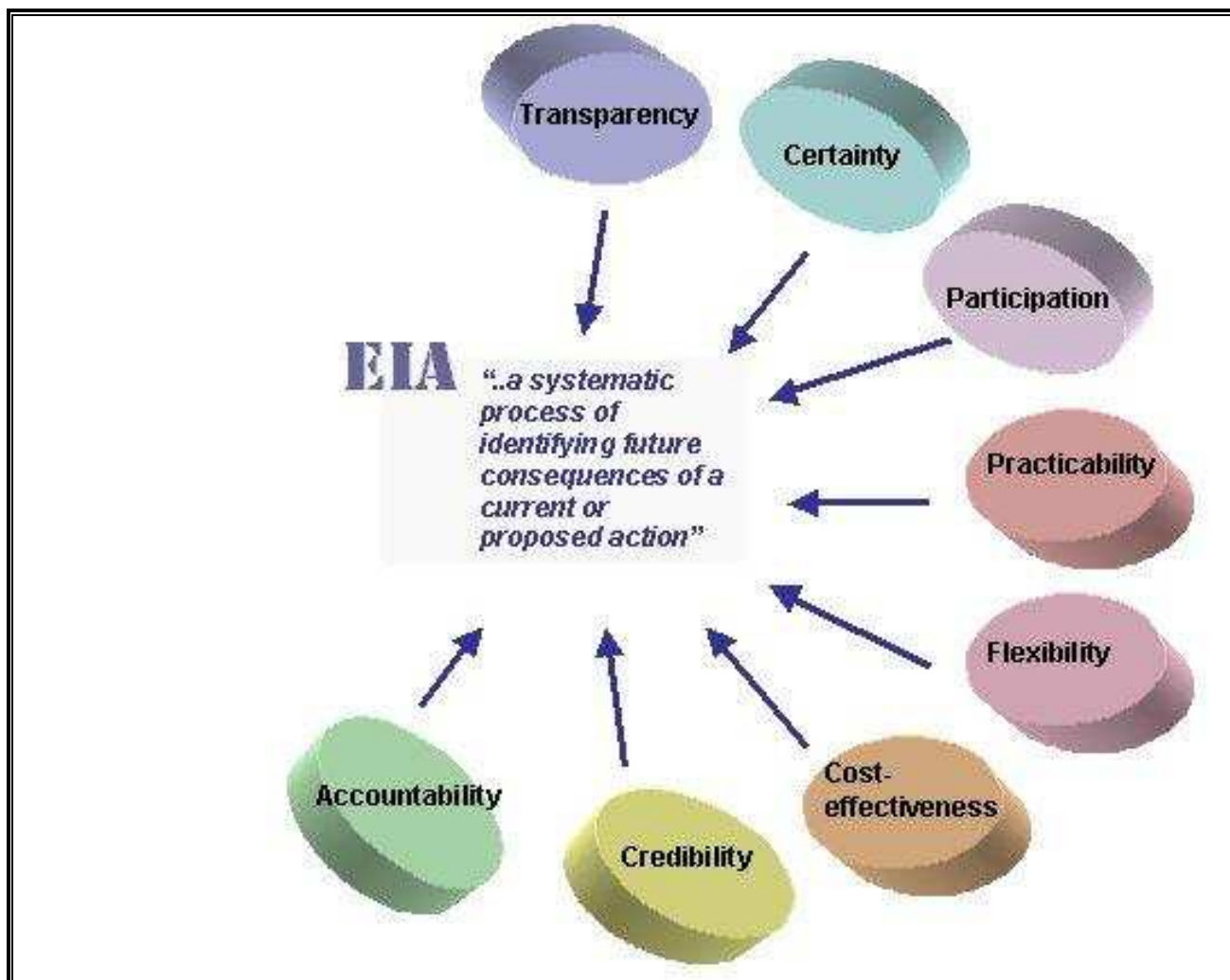
The eight guiding principles that govern the entire process of EIA are as follows (see Figure below):

- **Participation:** An appropriate and timely access to the process for all interested parties.
- **Transparency:** All assessment decisions and their basis should be open and accessible.
- **Certainty:** The process and timing of the assessment should be agreed in advanced and followed by all participants.
- **Accountability:** The decision-makers are responsible to all parties for their action and decisions under the assessment process.
- **Credibility:** Assessment is undertaken with professionalism and objectivity.
- **Cost-effectiveness:** The assessment process and its outcomes will ensure environmental protection at the least cost to the society.
- **Flexibility:** The assessment process should be able to adapt to deal efficiently with any proposal and decision making situation.
- **Practicality:** The information and outputs provided by the assessment process are readily usable in decision making and planning.

A S&EIR process is considered as a project management tool for collecting and analysing information on the environmental effects of a project. As such, it is used to:

- Identify potential environmental impacts;
- Examine the significance of environmental implications;

- Assess whether impacts can be mitigated;
- Recommend preventive and corrective mitigating measures;
- Inform decision makers and concerned parties about the environmental implications; and
- Advise whether development should go ahead.



**Figure 1: The eight guiding principles for the EIA process**

A S&EIR process typically has four phases, as illustrated in the Figure below. The Public Participation process forms an integral part of all four phases and is discussed in greater detail in Section C – 4 of this final Scoping Report.

### C-3 S&EIR TECHNICAL PROCESS

This section provides a summary of the technical process to be followed for this S&EIR process.

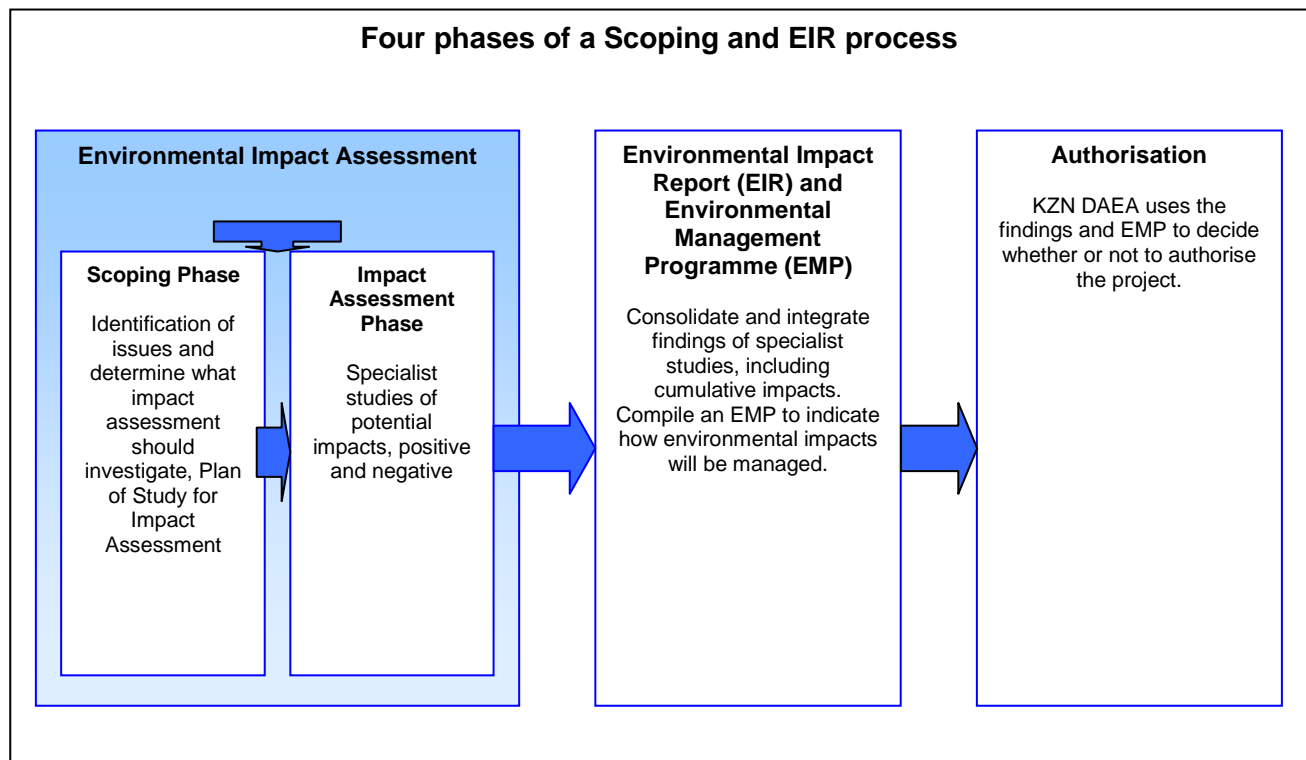


Figure 2: Flow diagram of the Scoping and EIR process

#### C-3.1 Pre-application Consultation with the KZN DAEA

No pre-consultation meeting was held between SEF and KZN DAEA. The EAP conducting the S&EIR process for the applicant, in support of their application for an environmental authorisation, is deemed to have a good understanding of the information requirements of the Department for the proposed Owen Sitole Seed Cane Scheme, such that the Department's specific information requirements are deemed to have been met for the scoping phase of this project.

#### C-3.2 Application for Authorization

With the submission of the application form informing the Department of intent to obtain an Environmental Authorisation, the KZN DAEA acknowledged receipt of the application form in a letter dated 25 November 2013. The following reference numbers were issued to the project viz, KZN DAEA Reference: DC25/0032/2013 and NEAS Reference No: KZN/EIA/0001352/2013. Refer to the Authority Correspondence in Appendix 4.

#### C-3.3 Information Gathering

Early in the EIA process, the technical specialists identified the information that would be required for the impact assessment and the relevant data was obtained. In addition, the specialists sourced available information about the receiving environment from reliable sources, I&APs, previous documented studies in the area and previous EIA Reports.



### C-3.4 Specialist Studies

The following specialist studies were identified to be undertaken during the EIR phase:

- Agricultural Assessment;
- Ecological Assessment (Floral and Faunal Assessment);
- Phase 1: Heritage Impact Assessment;
- Wetland/Riparian Delineation and Functional Assessment.

## C-4 PUBLIC PARTICIPATION PROCESS

The principles of NEMA govern many aspects of the S&EIR process, including consultation with I&APs. These principles include the provision of sufficient and transparent information to I&APs on an on-going basis, to allow them to comment; and ensuring the participation of historically disadvantaged individuals, including women, the disabled and the youth.

The principal objective of public participation is thus to inform and enrich decision-making. This is also the key role in the scoping phase of the process.

### C-4.1 Identification of Interested and Affected Parties

I&APs representing the following sectors of society have been identified in terms of Regulation 55 of the EIA Regulations R543 of 2010 (see Appendix 3 for a complete preliminary I&AP distribution list):

- National Authorities;
- Provincial Authorities;
- Local Authorities;
- Ward Councillors;
- Parastatal/ Service Providers;
- Non-governmental Organisations;
- Local forums/ unions; and
- Adjacent Landowners.

### C-4.2 Public Announcement of the Project

The project was announced on Thursday, 23<sup>rd</sup> January 2014, in the following manner (see Appendix 3 for public announcement documentation):

- Publication of media advertisement (in English) in the local newspaper, Zululand Observer and the Umlozi Wezindaba;
- On-site notices (in Zulu) advertising the S&EIR process were placed on and around the site;
- Distribution of letters by fax/ by hand/ post/ email to I&APs including Registration and Comment Sheets.

### C-4.3 Draft Scoping Report

A period of **40 calendar days** (27<sup>th</sup> January 2014 to 10<sup>th</sup> March 2014) was provided to the **State Departments** and the **General Public** for the review and commenting phase of the Draft Scoping Report. All Interested and Affected Parties (I&APs) as well as State Departments have been notified of this review period.

I&APs and relevant State Departments have had the opportunity to raise issues either in writing, by telephone or email on the Draft Scoping Report.

The availability of the Draft Scoping Report has been announced by means of personal letters to all the registered I&APs on the distribution list, and by adverts placed in the abovementioned newspapers.

In addition, the Draft Scoping Report was distributed for comment as follows:

- Left in a public venue (Empangeni Public Library);
- Hand-delivered/ couriered to the relevant authorities; and
- Posted on SEF's website at <http://www.sefsa.co.za>.

All the comments and concerns raised by I&APs during the S&EIR process will be captured in a Comment and Response Report. I&APs will receive letters acknowledging their contributions.

#### **C-4.4 Final Scoping Report**

The Final Scoping Report will be updated with comments and/or concerns raised by I&APs during public review of the Draft Scoping Report. The Comment and Response Report will be attached to the Final Scoping Report. The Final Scoping Report will be submitted to the KZN DAEA and registered I&APs simultaneously for review and comment.

The dates for public review of the Final Scoping report will be communicated to registered I&APs in due course. Registered I&APs will be advised to submit any additional comments on the forthcoming Final Scoping Report directly to the KZN DAEA prior to the lapsing of the review period.

#### **C-4.5 Public participation during the Impact Assessment Phase**

Public participation during the Impact Assessment Phase of the S&EIR process will revolve around a review of the findings of the Environmental Impact Report (EIR) and inputs into the Environmental Management Programme (EMPr). The findings will be presented in a Draft Environmental Impact Report and EMPr (including the specialist studies conducted), which will be available for public review and comment.

## SECTION D: IDENTIFICATION OF IMPACTS

### D-1 IDENTIFICATION OF IMPORTANT ENVIRONMENTAL IMPACTS

The key environmental impacts listed in the following section have been determined through:

- Legislation; and
- Experience of the Environmental Assessment Practitioner (EAP).

The following issues were identified and will be carried forward into the EIR phase for further investigation and assessment:

#### D-1.1 Biophysical Impacts

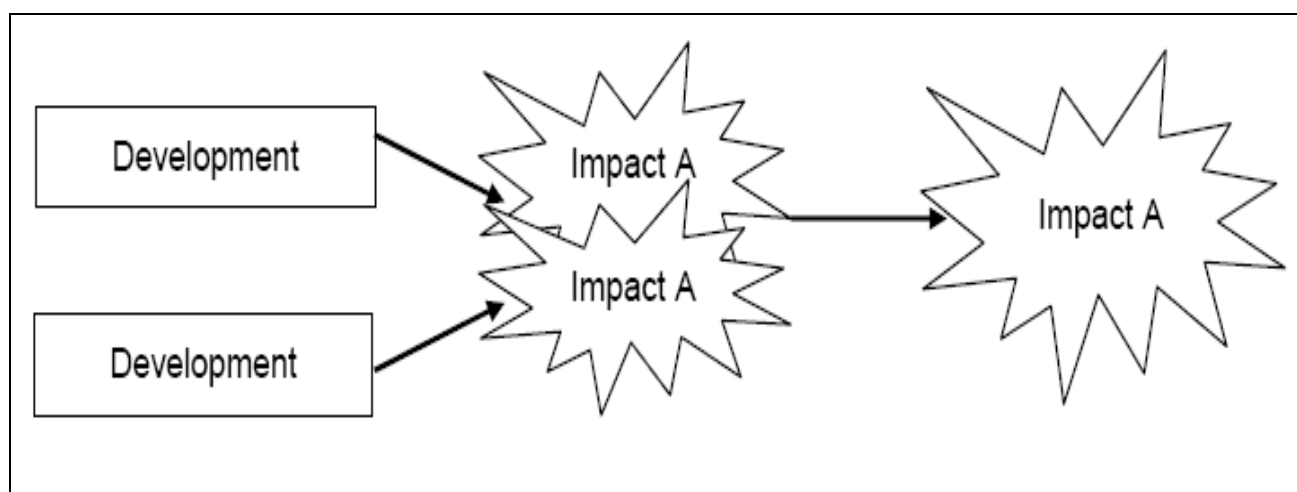
- Potential impacts on surface water resources that occur in close proximity (various wetlands occur on site, perennial and non-perennial rivers traverse the site);
- Potential impacts of increased surface water run-off (viz. increased soil erosion) associated with the cultivation of sugar cane and vegetation clearing;
- Destruction of existing flora within the study area and loss of habitat; and
- Faunal displacement, mainly during the construction phase of the project.

#### D-1.2 Socio-Economic Impacts:

- Increased dust and noise generation during the construction phase;
- Change in the visual character of the area;
- Potential impacts on heritage resources; and
- Job creation and advancement of academia during the operational phases of the proposed project.

### D-2 IDENTIFICATION OF CUMULATIVE IMPACTS

Cumulative impacts, as illustrated below, occur as a result from the combined effect of incremental changes caused by other activities together with the particular project. In other words, several developments with insignificant impacts individually may, when viewed together, have a significant cumulative adverse impact on the environment (see Figure below).



**Figure 3: The identification of Cumulative Impacts**

The following cumulative impacts have been identified in terms of the proposed development and warrant

further investigation during the assessment phase:

- Impact on loss of natural ecosystems and habitat; and
- Increased visual impacts associated with the proposed development as a result in change in sense of place.

---

## SECTION E: ALTERNATIVES

---

### E-1 IDENTIFICATION OF ALTERNATIVES

The EIA procedures and regulations stipulate that the environmental investigation needs to consider feasible alternatives for any proposed development. Therefore, a number of possible proposals or alternatives for accomplishing the same objectives should be identified and investigated. During the EIR phase of the project, the identified alternatives will be assessed, in terms of environmental acceptability as well as socio-economic feasibility. To define the term alternatives as per Government Notice No. 543 of the NEMA EIA Regulations 2010 means:

*“...in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to:*

- (a) The property on which or location where it is proposed to undertake the activity;*
- (b) The type of activity to be undertaken;*
- (c) The design or layout of the activity;*
- (d) The technology to be used in the activity;*
- (e) The operational aspects of the activity; and*
- (f) The option of not implementing the activity.”*

The alternatives below will be further investigated during the EIR phase of the project:

#### **Alternative 1: Site/ Location Alternatives:**

No location alternatives have been investigated by the applicant. The applicant proposes to collaborate with DAEA to bolster seed cane production in the area and promote rural development through agricultural education. To meet this objective, the Owen Sitole College of Agriculture, operated by DAEA has been strategically identified as the site to undertake this activity.

#### **Alternative 2: Layout/ Design Alternatives:**

Alternative layout/ design plans may evolve from the findings of specialist studies that will be undertaken to inform the EIR phase. Design and layout alternatives will be proposed based on the environmental sensitivities. Alternatives with regards to the design and layout of the proposed development will also be investigated and assessed within the EIR phase.

#### **Alternative 3: Land-use Alternatives:**

The development is aimed at expanding seed cane production on the 200ha site and through this contributing to rural development and training in the field of agriculture. Consequently, no alternatives outside of this land-use have been investigated by the applicant. Specific detail of the proposal will be provided in the forthcoming Draft Environmental Impact Report (EIR).

#### **Alternative 4: No Development Alternative:**

The ‘no-go’ or ‘do nothing’ alternative is encapsulated by the premise that the applicant abandons the project, or is not approved by the KZN DAEA. The no-go option has been broken down below:

##### **Skills Transfer and development**

The applicant has confirmed commitment to contributing to the Owen Sitole College’s curriculum and standard of education by providing skills and training to the sugarcane industry in KwaZulu-Natal and South Africa. However, in order to achieve these goals, the additional farm land to plant seed cane is required. Consequently, should the project be abandoned or not approved by DAEA then the opportunity to produce active and skilled professionals in this industry would be lost.

Environmental

From a purely ecological perspective, should the seed cane production development not proceed, the status quo will remain with the study area remaining unaffected by construction or operational related impacts.

---

## **SECTION F: PLAN OF STUDY FOR EIR PHASE**

---

### **F-1 SCOPE AND PURPOSE OF THE EIR PHASE**

The EIR phase will focus on the proposed Owen Sitole seed Cane Scheme and the associated impacts thereof. The next step of the S&EIR process is the development of guidelines for the execution of the impact assessment and the compilation of an Environmental Impact Report, as well as an Environmental Management Programme (EMPr). The compilation of these documents will take into account all comments and concerns raised by I&APs which are captured within the CRR as well as the findings of various specialist studies.

The Final Environmental Impact Report and EMPr will be submitted to the KZN DAEA for consideration towards environmental authorisation.

### **F-2 METHODOLOGY OF THE EIR PHASE**

#### **F-2.1 Specialist Investigations and Terms of Reference**

A team of specialists were identified to provide technical and scientific input in assessing the impacts of the proposed Owen Sitole seed Cane Scheme. The following specialist studies will be incorporated into the Draft Environmental Impact Report:

- Ecological Assessment (Floral and Faunal Assessment);
- Phase 1: Heritage Impact Assessment;
- Wetland/Riparian Delineation and Functional Assessment.

The Environmental and Technical Investigation Team of Specialists will focus on discipline-specific problems and examine each significant issue in further detail through the relevant specialist studies.

As per the Environmental Management Guidelines, specialists' Terms of Reference (ToR) must be clearly defined and clarified. This is to ensure that the specialists have covered all the issues and topics in an appropriate manner and at an appropriate level of detail. The proposed studies will take into consideration the present state of the receiving environment and provide an assessment of the impacts likely to be associated with the proposed project, as well as mitigation measures to be used to minimise possible impacts. The ToR for each specialist study is explained in greater detail below.

##### ***F-2.1.1 Ecological Assessment***

The Floral and Faunal Assessment will aim to:

- Describe the relevant baseline conditions relating to the natural vegetation communities and faunal species in the area of investigation;
- Describe the anticipated environmental impacts on the natural vegetation and fauna during the construction and operational phases of the project;
- Describe how the negative environmental impacts will be managed;
- Provide a description of the dominant and typical species occurring on site; and
- Provide a description of threatened, endemic or rare species to the Province, with an indication of the relative functionality and conservation importance of the specific community in the area under investigation.

### ***F-2.1.2 Phase 1: Heritage Impact Assessment***

A Heritage Impact Assessment will be undertaken in order to assess the impacts and significance in terms of culture and heritage on the site and propose mitigation measures. The ToR includes *inter alia*:

- A desk-top investigation of the area;
- A site visit to the proposed development site;
- Identify possible archaeological, cultural and historic sites within the proposed development area;
- Evaluate the potential impacts of construction and operation of the proposed development on archaeological, cultural and historical resources; and
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.

### ***F-2.1.3 Wetland/Riparian Delineation and Functional Assessment***

The Wetland/Riparian Delineation and Functional Assessment will aim to:

- Verify the boundary of the wetland/riparian habitat;
- Report on the status quo and current state of the wetland/riparian areas;
- Provide mitigation measures against any potential impacts on the wetland/riparian system during the planning of the proposed development;
- Illustrate the wetlands/riparian areas and their recommended buffer distances on a map;
- Assess the cumulative impact on net loss of wetlands through infilling.
- Assess the opportunities and methods for offsets, if applicable;
- Determine whether, and to what extent, the proposed development will impact on (i) the bio-physical functioning and dynamics of wetland systems and (ii) wetland determinants should the wetland areas be retained;
- Impact assessment and mitigation including rehabilitation measures and potential offset areas.

### ***F-2.1.4 Agricultural Assessment***

The soil assessment entailed the following aspects:

- Description of individual soil profiles on a series of catenae within the proposed footprint, which entailed the following:
  - Identifying master and diagnostic horizons to a depth of restricting layer;
  - - Determining soil depth of diagnostic horizons;
  - - Estimating soil texture as percentage (%) clay content;
  - - Assessing soil structure (uniformity/firmness/workability);
  - - Describing potential limitations/restrictions to land use;
- Soil classification into soil form according to the Taxonomic Soil Classification System for South Africa (1991);
- Assessing soil erodibility according to the Soil Loss Estimation Model for Southern Africa (SLEMSA) criteria (NDA, 2002);
- Grouping uniform soil patterns within uniform terrain into map units, with respect to observed limitations; and
- Evaluating agricultural potential and land capability of demarcated soil map units.

## **F-2.2 Approach to Assessment of Impacts**

The EAP in association with the relevant specialists will provide an outline of the approach used in the study. Assumptions and sources of information will also be clearly identified.



### ***F-2.2.1 Impact Identification and Assessment***

The EAP must make a clear statement, identifying the environmental impacts of the construction, operation and management of the proposed development. As far as possible, the EAPs must quantify the suite of potential environmental impacts identified in the study and assess the significance of the impacts according to the criteria set out below. Each impact will be assessed and rated. The assessment of the data must, where possible, be based on accepted scientific techniques, failing which the specialist is to make judgements based on his/ her professional expertise and experience.

### ***F-2.2.2 Assessment Procedure: Proposed Impact Assessment Methodology***

For the purpose of assessing impacts during the EIR phase of the project to follow, the project will be divided into two phases from which impacting activities can be identified, namely:

**Construction Phase:** All the construction related activities on site, until the contractor leaves the site.

**Operational Phase:** All activities, including the operation and maintenance of the proposed development.

The activities arising from each of these phases will be included in the impact assessment tables. This is to identify activities that require certain environmental management actions to mitigate the impacts arising from them.

The assessment of the impacts will be conducted according to a synthesis of criteria required by the integrated environmental management procedure.

<b>Extent</b> The physical and spatial scale of the impact.	Footprint	The impacted area extends only as far as the activity, such as footprint occurring within the total site area.
	Site	The impact could affect the whole, or a significant portion of the site.
	Regional	The impact could affect the area including the neighbouring farms, the transport routes and the adjoining towns.
	National	The impact could have an effect that expands throughout the country (South Africa).
	International	Where the impact has international ramifications that extend beyond the boundaries of South Africa.
<b>Duration</b> The lifetime of the impact, that is measured in relation to the lifetime of the proposed development.	Short Term	The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than that of the construction phase.
	Short-Medium Term	The impact will be relevant through to the end of a construction phase.
	Medium Term	The impact will last up to the end of the development phases, where after it will be entirely negated.
	Long Term	The impact will continue or last for the entire operational lifetime of the development, but will be mitigated by direct human action or by natural processes thereafter.
	Permanent	This is the only class of impact, which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient.
<b>Intensity</b> Is the impact destructive or	Low	The impact alters the affected environment in such a way that the natural processes or functions are not affected.

	Medium	The affected environment is altered, but functions and processes continue, albeit in a modified way.
	High	Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.
<b>Probability</b> The likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time.	Improbable	The possibility of the impact occurring is none, due either to the circumstances, design or experience. The chance of this impact occurring is zero (0%).
	Possible	The possibility of the impact occurring is very low, due either to the circumstances, design or experience. The chances of this impact occurring is defined as 25%.
	Likely	There is a possibility that the impact will occur to the extent that provisions must therefore be made. The chances of this impact occurring is defined as 50%.
	Highly Likely	It is most likely that the impacts will occur at some stage of the development. Plans must be drawn up before carrying out the activity. The chances of this impact occurring is defined as 75%.
	Definite	The impact will take place regardless of any prevention plans, and only mitigation actions or contingency plans to contain the effect can be relied on. The chance of this impact occurring is defined as 100%.

**Mitigation** – The impacts that are generated by the development can be minimised if measures are implemented in order to reduce the impacts. The mitigation measures ensure that the development considers the environment and the predicted impacts in order to minimise impacts and achieve sustainable development.

**Determination of Significance – Without Mitigation** – Significance is determined through a synthesis of impact characteristics as described in the above paragraphs. It provides an indication of the importance of the impact in terms of both tangible and intangible characteristics. The significance of the impact “without mitigation” is the prime determinant of the nature and degree of mitigation required. Where the impact is positive, significance is noted as “positive”. Significance will be rated on the following scale:

No significance: The impact is not substantial and does not require any mitigation action;

Low: The impact is of little importance, but may require limited mitigation;

Medium: The impact is of importance and is therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels; and

High: The impact is of major importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.

**Determination of Significance – With Mitigation** – Determination of significance refers to the foreseeable significance of the impact after the successful implementation of the necessary mitigation measures. Significance with mitigation will be rated on the following scale:

No significance: The impact will be mitigated to the point where it is regarded as insubstantial; Low: The impact will be mitigated to the point where it is of limited importance;

Low to medium: The impact is of importance, however, through the implementation of the correct mitigation measures such potential impacts can be reduced to acceptable levels;

Medium: Notwithstanding the successful implementation of the mitigation measures, to reduce the negative impacts to acceptable levels, the negative impact will remain of significance. However, taken within the overall context of the project, the persistent impact does not constitute a fatal flaw;

Medium to high: The impact is of major importance but through the implementation of the correct mitigation

measures, the negative impacts will be reduced to acceptable levels; and

**High:** The impact is of major importance. Mitigation of the impact is not possible on a cost-effective basis. The impact is regarded as high importance and taken within the overall context of the project, is regarded as a fatal flaw. An impact regarded as high significance, after mitigation could render the entire development option or entire project proposal unacceptable.

**Assessment Weighting** – Each aspect within an impact description was assigned a series of quantitative criteria. Such criteria are likely to differ during the different stages of the project's life cycle. In order to establish a defined base upon which it becomes feasible to make an informed decision, it will be necessary to weigh and rank all the identified criteria.

**Ranking, Weighting and Scaling** – For each impact under scrutiny, a scaled weighting factor will be attached to each respective impact. The purpose of assigning such weightings serve to highlight those aspects considered the most critical to the various stakeholders and ensure that each specialist's element of bias is taken into account. The weighting factor also provides a means whereby the impact assessor can successfully deal with the complexities that exist between the different impacts and associated aspect criteria.

Simply, such a weighting factor is indicative of the importance of the impact in terms of the potential effect that it could have on the surrounding environment. Therefore, the aspects considered to have a relatively high value will score a relatively higher weighting than that which is of lower importance (See Figure below: Weighting description).

Extent	Duration	Intensity	Probability	Weighting Factor (WF)	Significance Rating (SR)	Mitigation Efficiency (ME)	Significance Following Mitigation (SFM)
Footprint 1	Short term 1	Low 1	Probable 1	Low 1	Low 0-19	High 0,2	Low 0-19
Site 2	Short to medium 2		Possible 2	Low to medium 2	Low to medium 20-39	Medium to high 0,4	Low to medium 20-39
Regional 3	Medium term 3	Medium 3	Likely 3	Medium 3	Medium 40-59	Medium 0,6	Medium 40-59
National 4	Long term 4		Highly Likely 4	Medium to high 4	Medium to high 60-79	Low to medium 0,8	Medium to high 60-79
International 5	Permanent 5	High 5	Definite 5	High 5	High 80-100	Low 1,0	High 80-100

**Figure 4: Description of bio-physical assessment parameters with its respective weighting**

**Identifying the Potential Impacts Without Mitigation Measures (WOM)** – Following the assignment of the necessary weights to the respective aspects, criteria are summed and multiplied by their assigned weightings, resulting in a value for each impact (prior to the implementation of mitigation measures).

$$\text{Equation 1: Significance Rating (WOM)} = (\text{Extent} + \text{Intensity} + \text{Duration} + \text{Probability}) \times \text{Weighting Factor}$$

**Identifying the Potential Impacts With Mitigation Measures (WM)** – In order to gain a comprehensive understanding of the overall significance of the impact, after implementation of the mitigation measures, it will be necessary to re-evaluate the impact.

**Mitigation Efficiency (ME)** – The most effective means of deriving a quantitative value of mitigated impacts is to assign each significance rating value (WOM) a mitigation effectiveness (ME) rating. The allocation of such a rating is a measure of the efficiency and effectiveness, as identified through professional experience and empirical evidence of how effectively the proposed mitigation measures will manage the impact.

Thus, the lower the assigned value the greater the effectiveness of the proposed mitigation measures and

subsequently, the lower the impacts with mitigation.

Equation 2:      Significance Rating (WM) = Significance Rating (WOM) x Mitigation Efficiency  
 Or  
 WM = WOM x ME

**Significance Following Mitigation (SFM)** – The significance of the impact after the mitigation measures are taken into consideration. The efficiency of the mitigation measure determines the significance of the impact. The level of impact will, therefore, be seen in its entirety with all considerations taken into account.

### ***F-2.2.3 Integration of Specialist's Input***

In order to maintain consistency in the impact assessment, it is suggested that all potential impacts to the environment (or component of the environment under review) should be listed in a table similar to the example shown below (more than one table will be required if impacts require assessment at more than one scale). The assessment parameters used in the table should be applied to all of the impacts and a brief descriptive review of the impacts and their significance will then be provided in the text of the specialist reports and consequently in the EIR. The implications of applying mitigation are reviewed in Section F-2.2.4 below.

**Table 4: Example of an Impact Table**

Nature		Status	-
Impact source(s)			
Affected stakeholders			
Magnitude	<i>Extent</i>		
	<i>Intensity</i>		
	<i>Duration</i>		
	<i>Reversibility</i>		
	<i>Probability</i>		
Significance	<i>Without mitigation</i>		H
	<i>With mitigation</i>		L
Confidence			

### ***F-2.2.4 Mitigation Measures***

Mitigation measures will be recommended in order to enhance benefits and minimise negative impacts and they will address the following:

- **Mitigation objectives:** what level of mitigation must be aimed at: For each identified impact, the specialist must provide mitigation objectives (tolerance limits) which would result in a measurable reduction in impact. Where limited knowledge or expertise exists on such tolerance limits, the specialist must make an “educated guess” based on his/ her professional experience;
- **Recommended mitigation measures:** For each impact the specialist must recommend practicable mitigation actions that can measurably affect the significance rating. The specialist must also identify management actions, which could enhance the condition of the environment. Where no mitigation is considered feasible, this must be stated and reasons provided;
- **Effectiveness of mitigation measures:** The specialist must provide quantifiable standards (performance criteria) for reviewing or tracking the effectiveness of the proposed mitigation actions, where possible; and
- **Recommended monitoring and evaluation programme:** The specialist is required to recommend an appropriate monitoring and review programme, which can track the efficacy of the mitigation objectives. Each environmental impact is to be assessed before and after mitigation measures have been implemented. The management objectives, design standards, etc., which, if achieved, can

eliminate, minimise or enhance potential impacts or benefits. National standards or criteria are examples, which can be stated as mitigation objectives.

Once the above objectives have been stated, feasible management actions, which can be applied as mitigation, must be provided. A duplicate column on the impact assessment tables described above will indicate how the application of the proposed mitigation or management actions has reduced the impact. If the proposed mitigation is to be of any consequence, it should result in a measurable reduction in impacts (or, where relevant, a measurable benefit).

### **F-2.3 Approach to the Assessment of Cumulative Impacts**

Cumulative impacts can arise from one or more activities. A cumulative impact may result in an additive impact i.e. where it adds to the impact which is caused by other similar impacts or an interactive impact i.e. where a cumulative impact is caused by different impacts that combine to form a new kind of impact. Interactive impacts may be either countervailing (the net adverse cumulative impact is less than the sum of the individual impacts) or synergistic (the net adverse cumulative impact is greater than the sum of the individual impacts).

Possible cumulative impacts of the project will be evaluated in the EIR. In addition, various other cumulative impacts e.g. other external impacts that could arise from the project will be further investigated in the EIR phase of the project.

The assessment of cumulative impacts on a study area is complex; especially if many of the impacts occur on a much wider scale than the site being assessed and evaluated. It is often difficult to determine at which point the accumulation of many small impacts reaches the point of an undesired or unintended cumulative impact that should be avoided or mitigated. There are often factors which are uncertain when potential cumulative impacts are identified.

#### ***F-2.3.1 Steps in Assessing Cumulative Impacts***

The assessment of cumulative impacts will not be done separately from the assessment of other impacts. Cumulative impacts however, tend to have different time and space dimensions and therefore require specific steps. This may even mean that some of the actions in the assessment process, that preceded general impact identification, may have to be revisited after potential cumulative impacts have been identified. This will ensure that the scope of the EIR process is adequate to deal with the identified cumulative impacts.

Three (3) general steps, which are discussed below, will be recommended to ensure the proper assessment of cumulative impacts.

#### ***F-2.3.2 Determining the Extent of Cumulative Impacts***

To initiate the process of assessing cumulative impacts, it is necessary to determine what the extent of potential cumulative impacts will be. This will be done by adopting the following approach:

- Identify potentially significant cumulative impacts associated with the proposed activity;
- Establish the geographic scope of the assessment;
- Identify other activities affecting the environmental resources of the area; and
- Define the goals of the assessment.

#### ***F-2.3.3 Describing the Affected Environment***

The following approach is suggested for the compilation of a description of the environment:

- Characterise the identified external environmental resources in terms of their response to change and capacity to withstand stress;
- Characterise the stresses affecting these environmental resources and their relation to regulatory thresholds; and
- Define a baseline condition that provides a measuring point for the environmental resources that will be impacted on.

#### ***F-2.3.4 Assessment of Cumulative Impacts***

The general methodology which is used for the assessment of cumulative impacts should be coherent and should comprise of the following:

- An identification of the important cause-and-impact relationships between proposed activity and the environmental resources;
- A determination of the magnitude and significance of cumulative impacts; and
- The modification, or addition, of alternatives to avoid, minimize or mitigate significant cumulative impacts.

### **F-3 PUBLIC PARTICIPATION PROCESS DURING THE EIR PHASE**

#### **F-3.1 Stakeholder Engagement**

All I&APs registered on the project's database will be kept informed of the EIA process. Notification letters will be submitted informing all registered I&APs of the availability of draft and final Environmental Impact Reports and EMPs for review and comment.

All comments and/or concerns received via telephone, fax, email or post will be incorporated into a Comment and Response Report (CRR) and included within the Final Environmental Impact Report. All correspondence received will be acknowledged.

#### **F-3.2 Public Review of the Draft Environmental Impact Report**

It is proposed that the Draft Environmental Impact Report will be available for comment at the public venue towards May 2014. The report will also be available on SEF's website ([www.sefsa.co.za](http://www.sefsa.co.za)).

#### **F-3.3 Public Review of the Final Environmental Impact Report**

It is proposed that the Final Environmental Impact Report will be available for comment at the public venue from around July 2014. The report will also be available on SEF's website ([www.sefsa.co.za](http://www.sefsa.co.za)). The public review period of the final report will run concurrently with the submission of the final report to the KZN DAEA for consideration towards environmental authorisation.

---

## **SECTION G: CONCLUSION AND RECOMMENDATIONS**

---

In accordance with GN No. 543, the Draft Scoping Report is aimed at describing the proposed activity and those reasonable alternatives that have been identified, as well as the receiving environment that may be affected by the proposed project. In accordance with the EIA Regulations, an identification of relevant legislation and guidelines was also given, as well as a description of the public participation process that was and will be followed.

In conclusion, the Draft Scoping Report established the scope of the proposed project throughout its phases, as well as its key impacts on the receiving and surrounding environments. The project motivation has also been described. The Draft Scoping Report also sets out the proposed scope of the EIR phase that will be undertaken for the proposed project (Section F).

Comments and/or concerns identified by Interested and Affected Parties (I&APs) during the review period of the Draft Scoping Report will be incorporated into the Final Scoping Report for further investigation during the EIR Phase to follow. The Final Scoping Report and Plan of Study for the EIR phase will be submitted to the KZN DAEA for consideration. All comments received on the Final Scoping Report will also be forwarded to the KZN DAEA for consideration.

---

## **SECTION H: REFERENCES**

---

Umfolozi Local Municipality. Umfolozi 2012/2017 Integrated Development Plan (IDP).

Department of Environmental Affairs and Tourism. 2001. ENPAT. Pretoria: DEAT.

Department of Rural Development and Land Reform. Chief Directorate: Surveys and Mapping 2009: Hydrology. Cape Town: CDSM.

Mucina & Rutherford 2006: The Vegetation Map of South Africa, Lesotho and Swaziland. SANBI, Pretoria.

South African National Botanical Institute (SANBI). 2006. Vegmap. Cape Town.



---

## **SECTION I: APPENDICES**

---

**Appendix 1:** Locality Map

**Appendix 2:** Photograph plate

**Appendix 3:** Public Participation

**Appendix 4:** Authority Correspondence