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DRAFT SCOPING REPORT

**THE PROPOSED PLANTING OF POMEGRANATE
TREES AT UITKOMST, KWEKSPUIT, BOSHOF
VLEI AND LUVUNO FARMS WITHIN THE
JURISDICTION OF THE EMADLANGENI LOCAL
MUNICIPALITY, AMAJUBA DISTRICT,
KWAZULU-NATAL**

August 2019

Prepared by:

**Emvelo Quality and Environmental
Consultant (PTY) Ltd**

On Behalf of

Saidy farming (PTY) Ltd



Contents

PROJECT DETAILS	7
Developer (DEV)	7
EXECUTIVE SUMMARY	11
2.INTRODUCTION.....	17
3.PROJECT TITLE.....	17
4.PROJECT DESCRIPTION.....	17
5.GEOGRAPHICAL CONTEXT	18
5.1 Site Access	19
6.METHODOLOGY	19
6.1 Prior to Orchard Establishment.....	19
6.1.1 Soil preparation	19
6.2 Planting design/Tree spacing.....	20
6.3 Weed Control	20
6.4 Planting Season	20
6.5 Orchard Management	21
6.5.1 Pruning.....	21
6.5.2 Fertilizing.....	21
6.5.3 Irrigation	21
6.5.4 Pest and Disease Control	21
6.6 Harvesting Methods	22
7.CONSIDERATION OF ALTERNATIVES	22
7.1 Site Alternatives	22
7.2 No-Go Option	22
7.3 Activity Alternatives	23
7.3.1 Irrigated Cash-crops.....	23
7.3.2 Rain-fed Cash-crops	23
8.ACTIVITY MOTIVATION.....	23
8.1 Need.....	23
8.2 Desirability.....	24
8.2.1 Local economic growth	24
8.2.2 Provision of Job Opportunities	24
8.2.3 Improving Income or Purchasing Power	24
9.LEGISLATION AND GUIDELINE CONSIDERED	24
9.1 National Environmental Management Act.....	28
9.2 National Water Act	29
9.3 Guidelines	30
9.4 Regional Plans	30
10.SCOPING AND EIA PROCESS	31
10.1 Environmental Assessment Practitioner	31

10.2 DEA-Application Consultation (Pre-consultation Meeting)	32
10.3 DEA-Application Consultation (Pre-Application Meeting)	33
10.4 Environmental Assessment Triggers	33
10.5 Environmental Assessment Authorities	34
10.6 Scoping Process	34
10.6.1 Landowner Consent	36
10.6.2 Landowner Notification	36
10.6.3 Screening of Alternatives	36
10.6.4 Prediction of Impact	37
11.LIMITATIONS AND ASSUMPTIONS.....	37
12.A DESCRIPTION OF THE ENVIRONMENT THAT MAY BE AFFECTED BY THE ACTIVITY	38
12.1 CLIMATE.....	38
12.1.1 Potential Impact	39
12.1.2 Specialist Triggered/ Further Investigations	39
12.2 TOPOGRAPHY	40
12.2.1 Potential Impacts.....	41
12.2.2 Specialist Triggered/Further Investigations	41
12.3 GEOLOGY AND SOILS	41
12.3.1 Potential Impact	42
12.4 SURFACE WATER	43
12.4.1 Wetlands	45
12.4.2 Potential Impacts.....	45
12.5 Threatened Ecosystems	46
12.6 Flora	48
12.7 Fauna	50
12.7.1 Mammals.....	50
12.7.2 Avifauna	53
12.7.3 Herpetofauna (Reptiles and Amphibians)	56
12.7.4 Invertebrates	58
12.7.5 Potential Impact	60
12.7.6 Specialist Triggered/ Further Investigations	61
12.8 Amajuba Biodiversity Sector Plan	61
12.9 Aesthetic qualities and Land Use.....	63
12.9.1 Potential Impact	63
12.9.2 Specialist Triggered/Further investigation	63
12.11. Social and Economic Environment	64
12.11.1 Population Distribution	64
12.11.2 Water and Sanitation	65
12.11.3 Energy Source	66
12.11.4 Potential Impact	68

12.11.5 Triggered Specialist Study/Further investigation	68
13.PUBLIC PARTICIPATION.....	68
13.1 Background.....	68
13.2 Objectives of Public Participation.....	69
13.3 Notification of the Interested and Affected Parties (I&APs)	69
14.ENVIRONMENTAL ISSUES	74
14.1 Approach.....	74
14.2 Mitigation Measures	74
15.CUMULATIVE IMPACTS	78
15.1 Biodiversity.....	78
15.2 Impact on farms residence lifestyle.....	78
15.3 Regional Economic Development.....	78
16.Environmental Impact Assessment Methodology.....	78
17.PLAN OF STUDY.....	80
17.1 Specialist studies	81
17.1.1 Terms of Reference – General	82
17.1.2 Terms of Reference – Specific.....	83
17.1.2 (a) Summary of Key Issues & Triggers Identified During Scoping	83
17.1.3 Terrestrial Ecological Impact Assessment.....	84
17.1.3 (a) Summary of Key Issues & Triggers Identified During Scoping	84
17.1.3 (b) Approach	85
17.1.4 Heritage Impact Assessment	85
17.1.4 (a) Summary of Key Issues & Triggers Identified During Scoping	85
17.1.4 9 (b) Approach	85
17.1.5 Agricultural Feasibility Study.....	86
17.1.5 (a) Approach	86
17.2 Public Participation-EIA Phase	87
17.2.1 Updating of IAP Database	87
17.3 Review of Draft EIA Report.....	87
17.4 Comments and Responses Report.....	87
17.5 Notification of DEA Decision	88
17.5 EIA Report.....	88
17.6 Authority Consultation	89
17.7 Time Frames	89
18.CONCLUSION	90
References	92

LIST OF TABLES

- Table 1.1 Document Road Map
- Table 5.1 GPS Coordinates
- Table 9.1: Environmental Statutory Framework
- Table 10.1 Scoping and EIA Team
- Table 10.2: Specialist Team
- Table 12.1: Topological variables of the Amajuba District per Local Municipality
- Table 12.2: Definitions of Red Data status
- Table 12.2: Mammal species recorded in grid cell 2730CA
- Table 12.3: Red Data bird species recorded in the grid cell 2730CA
- Table 12.4: Red Data reptile species recorded in the grid cell 2627DD
- Table 12.5: Red Data amphibians species recorded in the grid cell 2627DD
- Table 12.6: Red Data butterfly's species recorded in the grid cell 2627DD
- Table 12.7: Population Group by Age
- Table 12.8: Population Distribution by Wards
- Table 12.9: Sources of Water Within the Municipality
- Table 12.10: Toilet Facilities
- Table 12.11: Sources of Energy
- Table 12.12: Level of education
- Table 12.13: Employment Status
- Table 12.14: Average Household Income
- Table 13.1: Public Participation Processes
- Table 13.2: Comments received from a Public Meeting
- Table 14.1: Direct and Indirect Impacts
- Table 16.1 Impact significance Ratings
- Table 17.2 EIA Timeframes (dates may change during the course of the EIA)

LIST OF FIGURES

- Figure 1: Geographical Context
- Figure 2: EIA Process
- Figure 3: Monthly rainfall and temperature within eMadlangeni Municipality
- Figure 4: Elevation above sea level
- Figure 5: Regional Geology
- Figure 6: V32B Quaternary Catchment
- Figure 7: Rivers within V32B Quaternary Catchment
- Figure 8: Wetland in and around the development location
- Figure 9: Threatened Ecosystem within or in close proximity to the development location

Figure 10: Kwazulu-Natal Regional Vegetation

Figure 11: CBA and ESA in relation to the project location

APPENDICES

Appendix A: Declaration

Appendix B: Locality Map

Appendix C: Case Images/Site Photo graphs

Appendix D: I&AP Spreadsheet

Appendix E: Public Participation

Appendix F: Minutes

Appendix G: Land Claim Status

Appendix H: Proof of Notification of I&AP

Appendix I: Background Information Document

Appendix J: EAP'S Curriculum Vitae

LIST OF ACRONYMS

DWS	Department of Water and Sanitation
DEDTEA	Department of Economic Development, Tourism and Environmental Affairs
EMPr	Environmental Management Programme
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
MSDS	Material Safety Data Sheet
NEMA	National Environmental Management Act
I&AP	Interested and Affected Parties
EAP	Environmental Assessment Practitioner
GA	General Authorisation

PROJECT DETAILS

Developer (DEV)

Name of the Developer	Saidy Farming (Pty) Ltd
Contact Person	
Address	
Cell phone Number	

Environmental Assessment Practitioner (EAP) Details

Name of Consultancy	Emvelo Quality and Environmental Consultant (PTY)Ltd
Professional affiliation body	IAIAsa
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Signature	

GLOSSARY OF ITEMS

DEVELOPMENT: the building, erection or establishment of a facility, structure or infrastructure that is necessary for the undertaking of a listed or specified activity but excludes any modification, alteration or expansion of such a facility, structure or infrastructure and excluding the reconstruction of the same facility in the same location, with the same capacity and footprint.

BIODIVERSITY: The variety of life in an area, including the number of different species, the genetic wealth within each species, and the natural areas where they are found.

BASIC ASSESSMENT: The process of collecting, organizing, analyzing, interpreting and communicating information that is relevant to the consideration of the application.

DEVELOPMENT FOOTPRINT: any evidence of physical alteration as a result of the undertaking of any activity.

CONTRACTOR: companies and or individual persons appointed on behalf of the client to undertake activities, as well as their sub-contractors and suppliers.

ENVIRONMENTAL CONTROL OFFICER: an individual nominated through the client to be present on-site to act on behalf of the client in matters concerning the implementation and day to day monitoring of the EMPr and conditions stipulated by the authorities as prescribed in NEMA.

ENVIRONMENT: in terms of the National Environmental Management Act (NEMA) (No 107 of 1998) (as amended), Environment means the surroundings within which humans exist and that are made up of:

- ✚ the land, water, and atmosphere of the earth;
- ✚ micro-organisms, plants and animal life;
- ✚ any part or combination of (i) of (ii) and the interrelationships among and between them;
- ✚ the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence;
- ✚ Human health and wellbeing.

ENVIRONMENTAL IMPACT: the change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products or services.

MITIGATION: the measures designed to avoid reduce or remedy adverse impacts.

ENVIRONMENTAL MANAGEMENT PROGRAMME: a detailed plan of action prepared to ensure that recommendations for enhancing or ensuring positive environmental impacts and limiting or preventing negative environmental impacts are implemented during the life-cycle of the project. This EMPr focuses on the construction phase, operation (maintenance) phase and decommissioning phase of the proposed project.

POLLUTION: the National Environmental Management Act, No. 107 of 1998 defined pollution to mean any change in the environment caused by the substances; radioactive or other waves; or noise, odors, dust or heat emitted from any activity, including the storage or treatment of waste or substances, construction and the provision of services, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience, and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future.

WATER POLLUTION: the National Water Act, 36 of 1998 defined water pollution to be the direct or indirect alteration of the physical, chemical or biological properties of a water resource so as to make it less fit for any beneficial purpose for which it may reasonably be expected to be used; or harmful or potentially harmful (a) to the welfare, health or safety of human beings; (b) to any aquatic or non-aquatic organisms; (c) to the resource quality; or (d) to property.

REHABILITATION: rehabilitation is defined as the return of a disturbed area to a state which approximates the state (wherever possible) which it was before the disruption.

WATERCOURSE: can be a) a river or spring; b) a natural channel or depression in which water flows regularly or intermittently; c) a wetland, lake or dam into which, or from which, water flows; and/or d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse as defined in the National Water Act, 1998 (Act No. 36 of 1998) and a reference to a watercourse includes, where relevant, its bed and banks.

WETLAND: the land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.

INDIGENOUS VEGETATION: refers to vegetation consisting of indigenous plant species occurring naturally in an area, regardless of the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years.

GENERAL WASTE: waste that does not pose an immediate hazard or threat to health or the environment, and includes -

- domestic waste;
- building and demolition waste;
- business waste; and
- inert waste.

HAZARDOUS WASTE: hazardous waste means any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste have a detrimental impact on health and the environment.

GENERAL WASTE LANDFILL SITE: a waste disposal site that is designed, managed, permitted and registered to allow for the disposal of general waste.

ARCHAEOLOGICAL RESOURCES: includes (a) material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures; (b) rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation; wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artifacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation; features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

INTERESTED AND AFFECTED PARTY: for the purposes of Chapter 5 of the NEMA and in relation to the assessment of the environmental impact of a listed activity or related activity, an interested and affected party contemplated in Section 24(4) (a) (v), and which includes (a) any person, group of persons or organization interested in or affected by such operation or activity; and (b) any organ of state that may have jurisdiction over any aspect of the operation or activity.

EXECUTIVE SUMMARY

Saidy farming (pty) Ltd intends to cultivate pomegranate trees on, Portion 1 (Remaining extent) Uitkomst Farm Number 95, Portion 2 (Remaining extent) of Uitkomst Farm Number 95, Portion 4 of Uitkomst Farm Number 95, Portion 1 (Remaining extent) of Kweekspruit Farm Number 22, ,Portion 7 (Remaining extent) of Kweekspruit Farm Number 22, Boshoff Vlei No 452 and Luvuno No 17498. These farms are situated, approximately 7.5 km east of Utrecht town, within Emadlangeni Local Municipality. The total development is approximately 2909.11 hectares of land. Numerous wetlands were found within the different farms and vegetation cover is mostly indigenous. Thus, numerous wetlands will be encroached and most of the indigenous (veld grass) vegetation will be cleared for the purposes of cultivation.

Emvelo Quality and Environmental Consultant has been appointed by Saidy Farming (Pty) Ltd, hereafter referred to as the Applicant, as the independent Environmental Assessment Practitioner EAP, to facilitate the Scoping/Environmental Impact Assessment Process required in terms of the National Environmental Management Act (NEMA, Act 107 of 1998) for this application. The properties in question are privately owned, most of which are owned by Saidy Farming (Pty) Ltd, except Luvuno farm which is owned by TMSN Holdings (Pty) Ltd.

The site is found within V32B quaternary catchment and is bordered by two river systems namely; Kweekspruit and Wasbankspruit. The terrain (site) is relatively flat however surrounded by very steep mountains. The vegetation within the site was classified at a finer scale as Income Sandy Grassland and Kwazulu-Natal Highland Thornveld by the KZN-wildlife Mapping Project. Income Sandy Grassland is deemed vulnerable while KwaZulu-Natl Highland Thornveld is classified as least threatened.

Three species of conservation concern were recorded on 2730CA GRID cell, where the development is located. Namely, *Otomys auratus* (Southern African Vlei Rat) and *Aony capensis* (African Clawless Otter) which are near threatened and *Mystromsys albicaudatus* (African White-tailed Rat) which is considered to be vulnerable.

The National Environmental Management Act (107 of 1998) as amended, and the Environmental Impact Assessment Regulations (2014) as amended, govern the process of applying for environmental authorization for certain developments. A provision in the EIA Regulations is made for two forms of assessment: Basic Assessment and Scoping and EIR. The EIA regulations specify that: Activities identified in Listing Notice 1 (GNR 327 of 2017)

requires Basic Assessment; Activities identified in Listing Notice 2 (GNR 325 of 2017) are subject to a Scoping and EIA/R; Activities identified in Listing Notice 3 (GNR 324 of 2017) requires Basic Assessment

This application will follow a Scoping/EIA Process. The listed activities associated with the proposed development includes Listing Notice 1 Activity 19, Listing Notice 2 Activity 15 and Listing Notice 3 Activity 12. Refer to Table 9.1

The Public Participation Process for both Scoping and Environmental Impact Assessment Process will be undertaken in accordance with chapter 6 of GN No. 326 (7 April 2017). The following section outlines steps to be followed during the Scoping and EIA phase. Some of the sections have been completed already under Scoping Phase.

Scoping

Scoping Phase
Interested and Affected Parties (I&APs) have been identified throughout the process. Initial identification of I&APs includes immediate landowners, ward councillor, farmers association, local and district municipalities, and relevant state departments and organs of state.
Notification letters have been posted to all identified I&APs informing them of the proposal, the opportunity to comment and the availability of the Scoping Report.
The A3 notices have been placed at 'gathering points' on the relevant farms in order to notify occupiers of the site, i.e. farm workers.
A site notice measuring A3 has been set up at the entrance to the site and to other locations around the site.
An advertisement was placed on Ilanga Newspaper (24/07/2019).
A public meeting was held with community members (20/06/2019).
Copies of the report will be delivered or sent via an email to relevant State Departments and Organs of State. Their comment will be requested in terms of 24O of NEMA.
All comments received during this commenting period will be included in the Final Scoping Report before submission to EDTEA.
A Comments and Response Table will also be included – this table summarises the comments received, and each comment is responded to.

EIR

EIR PHASE
Receive approval for the Scoping Report and the Plan of Study for EIA.
Compile Draft Environmental Impact Report (EIR) for public comment based on specialist information.

Submit copies of the Draft EIR to EDTEA and relevant State Departments and Organs of State and notify them of the commenting period (in terms of Section 240 of NEMA).
Notify Registered I&APs of the opportunity to comment on the EIR.
Make the EIR available for a 30-day commenting period.
Receive comments on the EIR.
Preparation of an EIR for submission to EDTEA including proof of the Public Participation Process comments received and our responses to these comments.

The scoping process is currently underway to present the concept of the proposed development to the relevant decision bodies and member of the public. This process will allow members of the public and state departments to air their views or raise concerns with regards to the proposed concepts. The main aim of the scoping phase is also to identify environmental issues which are likely to be caused by the project. The information contained in this Scoping Report and the documentation attached hereto is sufficient to allow the general public and key stakeholders to apply their minds to the potential negative and/or positive impacts associated with the development, in respect of the activities applied for.

DOCUMENT ROAD MAP

Chapter	Title	Correlations with GN No. 326, Appendix 2	Overview
1	Purpose of this Document	-	-
4	Project Description	2(1)(b) & (1)(d)	A description of the scope of the proposed activity
5	Project Location	2(1)(b) & 2(1)(c)	A description of the location of the activity
6	Alternatives	2(1)(g)(i)	Details of all the alternatives considered
7	Need and Desirability	2(1)(f)	The motivation for the need and desirability for the proposed project
9	Legislation and Guidelines Considered	2(1)(e)	Description of the policy and legislative context within which the development is proposed
10	Scoping and EIA Process	2(1)(a)	Details of Environmental Assessment Practitioner (EAP) who prepared the report and the expertise of the EAP.
11	Assumptions and Limitation	-	-
12	Profile of the receiving environment	2(1)(g)(iv)	Environmental attributes associated with alternatives
			Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected
13	Public Participation	2(1)(g)(iv)	Details of the public participation
			A summary of the issues raised by IAPs
14	Environmental Issues	2(1)(g)(v)	Impacts and risks identified for each alternative
		2(1)(g)(vii)	Positive and negative impacts that the proposed development and alternatives will have on the

			environment and on the community that might be affected
		2(1)(g)(vii)	The methodology used in determining and ranking the potential environmental impacts and risks associated with the alternatives
16	Plan of study for EIA	2(1)(h)	A plan of study for undertaking the environmental impact assessment process
17	EAP Affirmation	2(1)(i) and 2 (1)(j)	An undertaking under oath or affirmation by the EAP

Note that the following sections of Appendix 2 of GN No. 326 (7 April 2017) will be investigated further and reported on in the Environmental Impact Report (EIR), following the execution of the relevant specialist studies and targeted public participation:

- Section 2(1)(g)(v) - The impacts and risks identified for each alternative, including nature, significance, consequence, extent, duration, and probability of the impacts, including the degree to which these impacts-
 - (a) can be reversed;
 - (b) may cause irreplaceable loss of resources; and
 - (c) can be avoided, managed or mitigated.

- Section 2(1)(g)(vii) - Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects.

- Section 2(1)(g)(viii) - The possible mitigation measures that could be applied and level of residual risk.
- Section 2(1)(g)(ix) - The outcome of the site selection matrix.
- Section 2(1)(g)(xi) - A concluding statement indicating the preferred alternatives, including the preferred location of the activity.

1. PURPOSE OF THIS DOCUMENT

The appointment of Emvelo quality and environmental consultant by Saidy Farming, to conduct the environmental assessment, was carried out in terms of Section 24(5) and Section 44 of the National Environmental Management Act, 1998 (Act No.107 of 1998) as read with the Environmental Impact Assessment (EIA) Regulations of 04 December 2014, amended in 2017. The appointment relates to the following project;

- The Proposed Planting of Pomegranate Trees at Uitkomst, Kweekspuit, Boshoff Vlei, and Luvuno Farms

This document serves as a draft scoping report for the proposed aforementioned project.

The purpose of the Scoping Process, as the first phase of the Environmental Impact Assessment (EIA) process includes but not limited to the following;

- Identify the relevant policies and legislation relevant to the activity;
- Motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
- Identify and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;
- Identify and confirm the preferred site, through a detailed site selection process, which includes all the identified alternatives focusing on the geographical, physical, biological, social, economic and cultural aspects of the environment;
- Identify the key issues to be addressed in the assessment phase;
- Agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration, and probability of the impact to inform the location of the development footprint within the preferred site; and
- Identify suitable measures to avoid, manage, or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

2. INTRODUCTION

Emvelo Quality and Environmental Consultant (Emvelo Consultant) has been appointed by Saily Farming (Pty) Ltd, hereafter referred to as the Applicant, as the independent Environmental Assessment Practitioner EAP, to undertake the Environmental Impact Assessment for the Proposed Planting of Pomegranate Trees, within the Jurisdiction of Amajuba District, Kwa-Zulu Natal Province.

This will include the facilitation of the Scoping/Environmental Impact Assessment Process required in terms of the National Environmental Management Act (NEMA, Act 107 of 1998) for this application.

3. PROJECT TITLE

The Proposed Planting of Pomegranate Trees at Uitkomst, Kweekspuit, Boshoff Vlei, and Luvuno Farms within the Jurisdiction of the Emadlangeni Local Municipality, Amajuba District, Kwazulu-Natal

4. PROJECT DESCRIPTION

The project entails the planting of pomegranates trees on land within which is privately owned by Saily Farming (Pty) Ltd and Mr. Melusi Mchunu.

The proposed development will take place on the following portions;

- Portion 1 (Remaining extent) Uitkomst Farm Number 95
- Portion 2 (Remaining extent) of Uitkomst Farm Number 95
- Portion 4 of Uitkomst Farm Number 95
- Portion 1 (Remaining extent) of Kweekspuit Farm Number 22
- Portion 7 (Remaining extent) of Kweekspuit Farm Number 22
- Boshoff Vlei No 452
- Luvuno No 17498

The total development footprint is approximately 2909.11. There is a pan, dam and two rivers which borders the properties i.e. Kweekspuit and Boshoffs Vlei farms. The site is characterized by an intermix of grassland and wetland landscape which provides habitat for a wide variety of flora and fauna including grassland and wetland plants. Thus, numerous wetlands will be encroached, except aforementioned water resources (Pan, dam and two rivers.) and most of the indigenous (veld grass) vegetation will be cleared for the purposes of

cultivation aforementioned water resources (Pan, dam and two rivers.) It is therefore proposed that 50 meters buffer be applied between planting and the aforementioned water resources. According to the applicant, no water will be abstracted from the dam, pan or rivers, they will only rely on rainwater for irrigation.

5. GEOGRAPHICAL CONTEXT

The proposed development is located within the Madlangeni Local Municipality and Amajuba Municipality in the north-west of KwaZulu-Natal Province (see **Figure 1**).

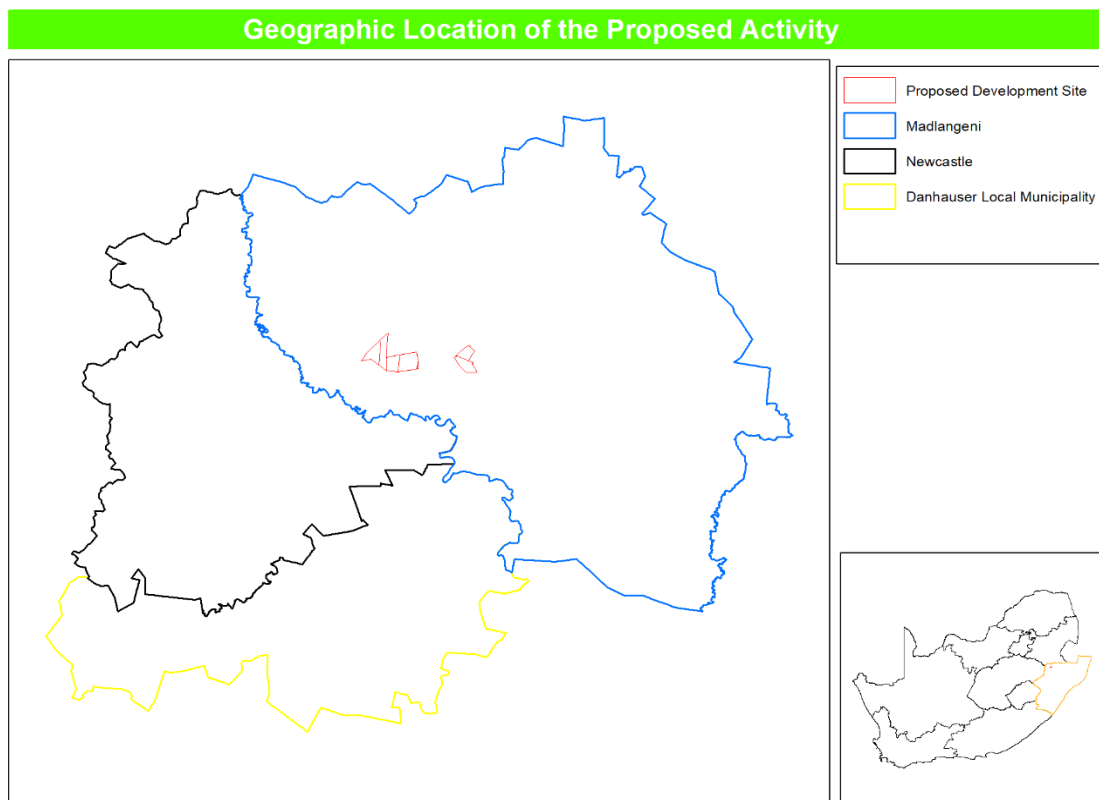


Figure 1: Geographical Context

Table 4.1 provides Global Positioning System (GPS) coordinates for the proposed development site.

Table 5.1 GPS Coordinates

Farm Portions		GPS CO-ORDINATES	
	Latitude	Longitude	

Mid-Point	27°38'22.35"S	30° 7'43.00"E
Portion 1 (Remaining extent) Uitkomst Farm Number 95	27°37'35.29"S	30° 6'18.43"E
Portion 2 (Remaining extent) of Uitkomst Farm Number 95	27°38'17.86"S	30° 7'11.24"E
Portion 4 of Uitkomst Farm Number 95	27°37'30.48"S	30° 5'28.57"E
Portion 1 (Remaining extent) of Kweekspruit Farm Number 22	27°38'12.13"S	30° 8'32.23"E
Portion 7 (Remaining extent) of Kweekspruit Farm Number 22.	27°38'30.93"S	30° 9'20.64"E
Boshoff Vlei No 452	27°38'26.70"S	30°13'31.00"E
Luvuno No 17498	27°37'25.00"S	30°13'34.18"E

5.1 Site Access

The site is located adjacent to the provincial road R34, more than 8 kilometers away from Utrecht towards Newcastle.

6. METHODOLOGY

Pomegranate production requires specialized agricultural practices and growing of this new crop for commercial purposes should be done by experienced fruit producers utilizing sound methodologies. Consequently, the following methodology would be adopted for this project;

6.1 Prior to Orchard Establishment

6.1.1 Soil preparation

Soil preparation will begin well in advance - at least 1 - 2 months prior to planting. Ploughing, tilling and cultivating of soil will be conducted using a tractor, grader and when required, manual labour. The turning and loosening of the soil maximize yields and enhances

microorganism activity, while also breaking the system of capillaries beneath the surface and preventing weed growth.

Most orchard roots grow in the surface soil, so when the surface soil is shallow, these roots are severely restricted. Compacted surface soil inhibits root growth. If the land is also flat, the soil can easily be waterlogged in wet conditions.

To solve these problems, a grader will be used to take the wasted surface soil and hill-up the surface soil before planting. This increases the volume of surface soil for the feeder roots to explore, and the sloping beds also allow excess rainwater to run off.

6.2 Planting design/Tree spacing

Optimal tree spacing is yet to be determined for production in South Africa (Pomegranate Association of South Africa,2013:3). Different cultivators use different spacing techniques. For this project, the 2909.11 hectares of land will be divided into sections of 25 hectares (5x5). There will be a spacing of up to 6 meters between the rows and 4 meters between the trees in a row. This will ensure the adequate penetration of sunlight and adequate airflow between trees, thereby providing optimum development of the trees by preventing Interspecific competition and ensuring efficient movement of implements and people during harvest

6.3 Weed Control

Weed control for pomegranate plantation is vital as it prevents intraspecific competition for resources because competition hinder tree growth and fruit development. Weeds could also host insect pests that could eventually infest the orchard. Fortunately, a cover crop (which is one of the ways of protecting the soil from weeds) in this case veld grass is present on-site and has protected the soil against any growth of weeds

6.4 Planting Season

The ideal planting time is late winter, as soon as the frost risk is low. Normally from mid-August to the end of September. It must be noted that no planting will take place within 50 meters from the edge of freshwater ecosystems present on site (pan, dam, and rivers).

6.5 Orchard Management

6.5.1 Pruning

Pruning of the fruiting tree will consist mainly of removal of excessive overcrowded growth, deadwood, and suckers. Adequate fruit-bearing wood would be retained. In order to achieve the desired shape (including height) of trees, they will be pruned in winter. Broken, bent and interfering branches are removed. In order to keep the interior of the tree open during the growing season, summer pruning will be carried out.

6.5.2 Fertilizing

The applicant has no intentions of using any fertilizers. However, according to the South African Pomegranate Association (2013), pomegranate plantations demand specific amounts of nutrient elements. These may vary depending on the soil analysis results but on average, about 200 kg/hectare of nitrogen is given annually and phosphorus and potassium may also need to be occasionally added if soil tests or leaf analysis indicate a deficiency. The South African Pomegranate Association also recommends foliar zinc application after fruit set. If and when required, the Applicant would seek advice from the specialist as to which most suitable fertilizer would need to be applied.

6.5.3 Irrigation

Pomegranate-growing often thrives under drought conditions. This crop is best suited for drought-prone areas as it requires light soil and low rainfall of 180-550 mm (Levin 2006). Consequently, the applicant will rely on rainfall to irrigate trees.

6.5.4 Pest and Disease Control

Pests which are generally found on pomegranate include; false codling moth (FCM), aphids, mealy bug, scale, thrips, mites, whitefly, nematodes, etc

The most important diseases of pomegranate include Phytophthora spp., Botrytis (crown rot), Alternaria (including the black heart), Cercospora, Bacterial blight, etc.

Pesticides and disease control measures will be applied if and when required. However, at this moment pesticides and disease control chemicals to be applied are not known, as this will depend on what pests and diseases are present at the time.

6.6 Harvesting Methods

Unlike other fruit trees, pomegranate fruits are easy to harvest and they require minimal ladder work. Fruit will be clipped using a shear as close to the fruit as possible to prevent a sharp point of wood from piercing and rubbing against other fruit in the bin and placed directly into picking trays or bins.

7. CONSIDERATION OF ALTERNATIVES

The DEA 2006 guidelines on ‘assessment of alternatives and impacts’ outlines four types of alternatives that need to be considered namely, the no-go, location, activity, and design alternatives. It is, however, important to note that the regulation and guidelines specifically state that only ‘feasible’ and ‘reasonable’ alternatives should be explored. It also recognizes that the consideration of alternatives is an iterative process of feedback between the developer and EAP, which in some instances culminates in a single preferred project proposal.

7.1 Site Alternatives

The properties in question are privately owned and no other properties have at this stage been secured Saily Farming (Pty) Ltd. From the applicant perspective, the properties in question are preferred due to the agricultural potential of the farms. In addition, the applicant iterated the fact that, for the past 40-50 years, they have been farming with cattle’s, sheep and they also did cash cropping. As a result, in the Applicant’s opinion, approximately 70% of the land is suitable for cash crops.

No site alternatives were considered for this development, as the area proposed for pomegranate plantation is mainly located on historic croplands therefore, the majority of the area has been disturbed previously.

7.2 No-Go Option

This alternative considers the option of ‘do nothing’ and maintaining the status quo. No planting of pomegranate trees will happen, therefore there will be no negative impacts associated with the proposed activity. However, there will also be no positive impacts associated with the project, for instance, local economic growth, provision of job opportunities and skills development, etc.

7.3 Activity Alternatives

7.3.1 Irrigated Cash-crops: It is without a doubt that crops under irrigation deliver a higher yield than dry croplands and ensures a harvest year after year. Irrigated croplands are also one of the most profitable forms of agriculture. However, it all depends on the local climate conditions and the type of crop to be planted and on whether or not it (crop) can withstand dry conditions. Crop(s) to be cultivated are pomegranate trees. These types of plants often thrive under drought conditions and are best suited for drought-prone areas requiring light soil and low rainfall of 180-550 mm per year.

Despite its economic importance and contribution, this alternative was not considered suitable for this development, due to the following reasons;

- There is increasing competition for water not only in South Africa but globally. Climate change threatens to exacerbate the situation with a reduction in resource availability. The sustainability of irrigated production is under threat due to increasing water scarcity and concerns regarding the impact of over-abstraction on the environment.
- Irrigation poses adverse environmental impacts, particularly in drier catchments in the driest months and driest years when resources are most constrained.

As a result, this alternative will not be adopted.

7.3.2 Rain-fed Cash-crops: Rain-fed agriculture while deemed inefficient, is the most environmentally sound alternative, that ensures the protection of water resources for the future generation, unlike irrigation it requires less effort and investments. Since the crop in question requires less water for it to grow, there is really no need to for irrigation. As a result, this is the preferred alternative.

8. ACTIVITY MOTIVATION

8.1 Need

According to the EMadlangeni Integrated Development Plan (2019), agriculture is very much a backbone of the municipality, however, over the past few years, this sector has experienced negative growth, with a 5.2% decline recorded in 2015. Majority of the residents are engaged in subsistence. This practice while necessary affect land capability and agricultural output of these areas.

The municipality has good agricultural potential and that includes commercial farming. However, the development of commercial agriculture is hindered by a lack of funding for raw materials, machinery, skills and transport markets for produce within traditional areas.

The proposed seeks to address the aforementioned shortcomings. Not only will the establishment optimize land use and agricultural output within the area, but it will also contribute economic growth in the region, creation of long-term employment and skills development. People will be trained on the planting, pruning, and harvesting of the pomegranate fruit.

8.2 Desirability

The contributions associated with the proposed development are discussed below;

8.2.1 Local economic growth

The proposed project will contribute to local economic growth by supporting agricultural development in line with provincial and regional goals and municipal goals.

8.2.2 Provision of Job Opportunities

This investment will create approximately five (5000) to eight thousand (8000) jobs in the agricultural sector in the Province of KwaZulu-Natal and this is in line with the National Government to create more jobs in order to reduce unemployment. The recent National Development Plan which is the government road map for economic development over the next fifteen years to 2030 singles out agriculture as the catalyst in the creation of up to one million (1 million) jobs.

8.2.3 Improving Income or Purchasing Power

Agriculture contributes to poverty alleviation by reducing food prices, creating employment, improving farm income and increasing wages (FAO, 2016).

8.2.3 Land capability:

The agricultural potential within the municipality in terms of crop production is good.

9. LEGISLATION AND GUIDELINE CONSIDERED

The legislation that has a possible bearing on the proposed project from an environmental

perspective is captured in Table 3 below. Note: this list does not attempt to provide a detailed explanation, but rather represents an identification of the most appropriate sections from pertinent pieces of legislation.

Table 9.1: Environmental Statutory Framework

Legislation	Relevance and Relevance
Constitution of the Republic of South Africa, (No. 108 of 1996)	<ul style="list-style-type: none"> ➤ Chapter 2 – Bill of Rights. ➤ Section 24 – Environmental Rights.
National Environmental Management Act (NEMA) (No. 107 of 1998)	<ul style="list-style-type: none"> ➤ Section 24 – Environmental Authorisation (control of activities which may have a detrimental effect on the environment). ➤ Section 28 – Duty of care and remediation of environmental damage. ➤ Environmental management principles. ➤ Authorities – Department of Environmental Affairs (DEA) (national) and FS State Department of Economic, Small Business Development, Tourism and Environmental Affairs (DESTEA) (provincial).
GN No. 326 (7 April 2017)	<ul style="list-style-type: none"> ➤ Purpose - regulate the procedure and criteria as contemplated in Chapter 5 of NEMA relating to the preparation, evaluation, submission, processing and consideration of, and decision on, applications for environmental authorisations for the commencement of activities, subjected to EIA, in order to avoid or mitigate detrimental impacts on the environment, and to optimise positive environmental impacts, and for matters pertaining thereto.
GN No. 327 (7 April 2017) (Listing Notice 1)	<ul style="list-style-type: none"> ➤ Purpose - identify activities that would require environmental authorizations prior to commencement of that activity and to identify competent authorities in terms of sections 24(2) and 24D of NEMA. ➤ The investigation, assessment, and communication of the potential impact of activities must follow the procedure as prescribed in regulations 19 and 20 of the EIA Regulations published in terms of section 24(5) of the Act. However, according to Regulation 15(3) of GN No. 327, S&EIR must be applied to an application if the application is for two or more activities as part of the same development for which S&EIR must already be applied in respect of any of the activities.

	<p>➤ Activities under Listing Notice 1 that are relevant to this project are as follows;</p>		
	<table border="1"> <tr> <td data-bbox="485 304 1046 1655"> <p>GN No. 327- Activity no. 19:</p> <p>The infilling or deposition of any material of more than 10m³ into or the dredging, excavation, removal or moving of soil, sand, shell, shell grit, pebbles or rock of more than 10m³ from a (i) watercourse;</p> <p>[(ii) the seashore; or</p> <p>(iii) the littoral active zone, an estuary or distance of 100 metres inland of the high-water mark of the sea or estuary, whichever distance is greater]</p> <p>but excluding where such infilling, deposition, dredging, excavation, removal or moving –</p> <p>(a) Will occur behind a development setback</p> <p>(b) Is for maintenance purposes undertaken in accordance with a maintenance management plan; [or]</p> <p>(c) Falls within the ambit of the activity 21 in this Notice, in which case that activity applies;</p> <p>(d) Occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or</p> <p>(e) Where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.</p> </td> <td data-bbox="1046 304 1391 1655"> <p>During soil preparation phase more than 10m³ soil would be moved within wetland areas (watercourse).</p> </td> </tr> </table>	<p>GN No. 327- Activity no. 19:</p> <p>The infilling or deposition of any material of more than 10m³ into or the dredging, excavation, removal or moving of soil, sand, shell, shell grit, pebbles or rock of more than 10m³ from a (i) watercourse;</p> <p>[(ii) the seashore; or</p> <p>(iii) the littoral active zone, an estuary or distance of 100 metres inland of the high-water mark of the sea or estuary, whichever distance is greater]</p> <p>but excluding where such infilling, deposition, dredging, excavation, removal or moving –</p> <p>(a) Will occur behind a development setback</p> <p>(b) Is for maintenance purposes undertaken in accordance with a maintenance management plan; [or]</p> <p>(c) Falls within the ambit of the activity 21 in this Notice, in which case that activity applies;</p> <p>(d) Occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or</p> <p>(e) Where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.</p>	<p>During soil preparation phase more than 10m³ soil would be moved within wetland areas (watercourse).</p>
<p>GN No. 327- Activity no. 19:</p> <p>The infilling or deposition of any material of more than 10m³ into or the dredging, excavation, removal or moving of soil, sand, shell, shell grit, pebbles or rock of more than 10m³ from a (i) watercourse;</p> <p>[(ii) the seashore; or</p> <p>(iii) the littoral active zone, an estuary or distance of 100 metres inland of the high-water mark of the sea or estuary, whichever distance is greater]</p> <p>but excluding where such infilling, deposition, dredging, excavation, removal or moving –</p> <p>(a) Will occur behind a development setback</p> <p>(b) Is for maintenance purposes undertaken in accordance with a maintenance management plan; [or]</p> <p>(c) Falls within the ambit of the activity 21 in this Notice, in which case that activity applies;</p> <p>(d) Occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or</p> <p>(e) Where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.</p>	<p>During soil preparation phase more than 10m³ soil would be moved within wetland areas (watercourse).</p>		
<p>GN No. 325 (7 April 2017) (Listing Notice 2)</p>	<p>➤ Purpose - identify activities that would require environmental authorizations prior to commencement of that activity and to identify competent authorities in terms of sections 24(2) and 24D of NEMA.</p> <p>➤ The investigation, assessment, and communication of the potential impact of activities must follow the procedure as prescribed in regulations 21, 22, 23 and 24 of the EIA Regulations published in terms of section</p>		

	<p>24(5) of the Act unless otherwise indicated by the Minister in a government notice.</p> <p>➤ Activities under Listing Notice 2 that are relevant to this project are as follows:</p>	
	<p>GN No. 325- Activity no 15:</p> <p>The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for</p> <p>(i) The undertaking of linear activity; or</p> <p>(ii) maintenance purposes undertaken in accordance with a maintenance management plan</p>	<p>More than 20 hectares of indigenous vegetation (Veld grass) would be cleared</p>
<p>GN No. 324 (7 April 2017) (Listing Notice 3)</p>	<p>➤ Purpose - list activities and identify competent authorities under sections 24(2), 24(5) and 24D of NEMA, where environmental authorization is required prior to commencement of that activity in specific identified geographical areas only.</p> <p>➤ The investigation, assessment, and communication of the potential impact of activities must follow the procedure as prescribed in regulations 19 and 20 of the Environmental Impact Assessment Regulations published in terms of section 24(5) of the Act. However, according to Regulation 15(3) of GN No. 326, S&EIR must be applied to an application if the application is for two or more activities as part of the same development for which S&EIR must already be applied in respect of any of the activities.</p> <p>➤ Activities under Listing Notice 3 that are relevant to this project are as follows.</p>	
	<p>GN No. 324 – Activity no.12:</p> <p>The clearance of an area of 300 square meters of indigenous vegetation except where such clearance is required for the maintenance purposes undertaken in accordance with a maintenance management plan</p> <p>d. Kwazulu-Natal</p>	<p>The project footprint is more than 300 square meters and the development is located on critically biodiversity areas as proclaimed by KZN Biodiversity Sector Plan</p>

	(v) Within critically biodiversity areas as identified in systemic biodiversity plans adopted by the competent authority or in bioregional plans	
National Water Act (Act No. 36 of 1998)	<ul style="list-style-type: none"> ➤ Chapter 3 – Protection of water resources. ➤ Section 19 – Prevention and remedying effects of pollution. ➤ Section 20 – Control of emergency incidents. ➤ Chapter 4 – Water use. ➤ Authority – Department of Water and Sanitation (DWS). 	
National Environmental Management Air Quality Act (Act No. 39 of 2004)	<ul style="list-style-type: none"> ➤ Air quality management ➤ Section 32 – Dust control. ➤ Section 34 – Noise control. ➤ Authority – EDTEA. 	
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	<ul style="list-style-type: none"> ➤ Management and conservation of the country's biodiversity. ➤ Protection of species and ecosystems. ➤ Authority – EDTEA. 	
Occupational Health & Safety Act (Act No. 85 of 1993)	<ul style="list-style-type: none"> ➤ Provisions for Occupational Health & Safety ➤ Authority – Department of Labour. 	
National Heritage Resources Act (Act No. 25 of 1999)	<ul style="list-style-type: none"> ➤ Section 34 – protection of structure older than 60 years. ➤ Section 35 – protection of heritage resources. ➤ Section 36 – protection of graves and burial grounds. ➤ Authority – FS Heritage Resources Authority (KZHHRA) 	

9.1 National Environmental Management Act

According to Section 2(3) of the National Environmental Management Act (NEMA) (Act No. 107 of 1998), “*development must be socially, environmentally and economically sustainable*”, which means the integration of these three factors into planning, implementation and decision-making so as to ensure that development serves present and future generations.

The proposed planting of pomegranate trees will require authorization in terms of NEMA and the EIA is being undertaken in accordance with the EIA Regulations (2017) that consist of the following:

- EIA procedure - GN No. 326 (7 April 2017);
- Listing Notice 1 - GN No. 327 (7 April 2017);
- Listing Notice 2 - GN No. 325 (7 April 2017); and
- Listing Notice 3 - GN No. 324 (7 April 2017).

The project triggers activities under Listing Notices 1, 2 and 3, and thus needs to be subjected to a Scoping and EIA process. The listed activities are explained in the context of the project in **Table 9.1**.

9.2 National Water Act

The purpose of the National Water Act (NWA) (Act No. 36 of 1998) is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways which take into account amongst other factors:

- Meeting the basic human needs of present and future generations;
- Promoting equitable access to water;
- Redressing the results of past racial and gender discrimination;
- Promoting the efficient, sustainable and beneficial use of water in the public interest;
- Facilitating social and economic development;
- Providing for the growing demand for water use; protecting aquatic and associated ecosystems and their biological diversity;
- Reducing and preventing pollution and degradation of water resources;
- Meeting international obligations;
- Promoting dam safety; and
- Managing floods and droughts.

Part 1 of Chapter 4 (Use of Water) of the NWA sets out general principles for regulating water use. In general, water use must be licensed unless it is listed in Schedule I, as an Existing Lawful Use, is permissible under a General Authorisation, or if a responsible authority waives the need for a licence. The Minister may limit the amount of water which a responsible authority may allocate. In making regulations the Minister may differentiate between different water resources, classes of water resources.

The project entails the following activities that constitute water uses in terms of Section 21 of the NWA:

- Section 21(c) - Impeding or diverting the flow of water in a watercourse (instream works associated with access roads' crossings and placing towers within the regulated area of a watercourse); and
- Section 21(i) - Altering the bed, banks, course or characteristics of a watercourse (instream works associated with access roads' crossings and placing towers within the regulated area of a watercourse); and

Separate approval for water uses will be sought from the DWS.

9.3 Guidelines

The following guidelines were considered during the preparation of the Scoping Report:

- Integrated Environmental Management Information Series, in particular, Series 2 – Scoping (DEAT, 2002);
- Guideline on Alternatives, EIA Guideline and Information Document Series (DEA&DP, 2010a);
- Integrated Environmental Management Guideline Series 5: Companion to the EIA Regulations 2010 (DEA, 2010a);
- Integrated Environmental Management Guideline Series 7: Public Participation in the EIA Process (DEA, 2010b); and
- Guidelines for Involving Specialists in the EIA Processes Series (Brownlie, 2005).

9.4 Regional Plans

The following regional plans were or will be considered during the execution of the EIA (amongst others):

- The municipal Spatial Development Framework (SDF);
- The municipal Integrated Development Plan (IDP);
- Amajuba District Municipality Biodiversity Plan, 2015; and
- Other relevant national, provincial, district and local policies, strategies, plans, and programmes.

10. SCOPING AND EIA PROCESS

10.1 Environmental Assessment Practitioner

Emvelo quality and Environmental Consultants has been appointed by Saily Farming (Pty) Ltd company to undertake Environmental Impact Assessment Studies associated with the proposed planting of pomegranate trees at uitkomst and kweekspruit farms.

In accordance with Appendix 2, Section 2(1)(a) of GN No. 326 (7 April 2017), this section provides an overview of Emvelo Consulting and the company's experience with EIAs, as well as the details and experience of the EAPs that form part of the Scoping and EIA team.

The Emvelo company is an independent quality and environmental consultant, specializing in Environmental Impacts Assessment studies, Environmental Monitoring and Auditing, Surface and Groundwater Monitoring just to name the few. The company is directed by a competent, experienced and capable environmental engineer.

The core members of Emvelo Consulting that are involved with the Scoping and EIA process, as well as the appointed Specialists for the project are captured in Table 2 below, and their respective Curricula Vitae is contained in Appendix C.

Table 10.1 Scoping and EIA Team

Name	Qualification	Experience (Years)	Duties
Phumzile Lembede	<ul style="list-style-type: none">• Bsc. Honours in Environmental Management• B. tech Quality Management• Dip Chemical Engineering	14	<ul style="list-style-type: none">• Project Manager• Quality Control• EIA Process
Linda Gumede	Bss. Geography and Environmental Management	2	<ul style="list-style-type: none">• Project Leader• EIA Process• Scoping & EIA Report
Nokulunga Goqo	<ul style="list-style-type: none">• BSc. Honours Biological Sciences• BSc Environmental Sciences	6 months	<ul style="list-style-type: none">• Quality Review• Technical Inputs• EMPr

Table 10.2 Specialist

Name	Qualification	Experience (Years)	Duties
			Wetland Impact Assessment Specialist
			Terrestrial Ecological Impact Assessment
			Heritage Impact Assessment
			Agricultural Feasibility Specialist

10.2 DEA-Application Consultation (Pre-consultation Meeting)

A Pre-Consultation Meeting was convened with EDTEA on 24 April 2019 (refer to Appendix F for a copy of the minutes). The purpose of the meeting included the following:

- To provide an overview of the project to EDTEA;
- To seek clarification regarding certain matters that pertain to the EIA process;
- To determine EDTEA's requirements; and
- To confirm the process and timeframes.

Key outcomes of above pre-application consultation with EDTEA include the following:

- The EAP should revise the number of hectares applied for, as the planting of trees would not be taking place over the 2700 hectares of land.
- Upon receiving of the wetland assessment report. The Wetland Report will indicate the rate of Risk by the proposed Development (whether its high, medium or low risk) and the EAP will consult the Department of Water and Sanitation, to confirm whether if the Water Use Licence is required.
- On a desktop analysis conducted by the EAP, it was discovered that the proposed development could be located on the critical biodiversity areas; as a result, Listing Notice 3 Activity 13 would be triggered. However, it was listed as a possible trigger, as the EAP is still awaiting confirmation from KZN wildlife regarding this matter
- The EAP should provide coordinates of all corners of the proposed site.

10.3 DEA-Application Consultation (Pre-Application Meeting)

A Pre-Application Meeting was convened with EDTEA on 04 July 2019 (refer to Appendix F for a copy of the minutes). The purpose of the meeting included the following:

- To clarify the issue of hectares;
- To give feedback and confirm the Triggered Listed Activities; and
- To confirm the process and timeframes.

Key outcomes of the above pre-application meeting with EDTEA include the following:

- The EAP made reference to the following points; While the EAP was making adjustments with regards to the number of hectares applied for, as directed by EDTEA during the pre-consulting meeting, the discovery was made, in relation to the boundaries of the proposed site. The information that was presented to the department was incomplete. The extent of boundaries presented was approximately 2 255.8153 hectares which did not equate to 2700 as mentioned in the project description. However, this issue was later rectified by adding Boshoff vlei with the extent of about 459.8516 hectares which then equated to 2715.6669 hectares.
- An agreement between Saily Farming and TMSN Holdings (Pty) Ltd to include Luvuno farm no 17498 on the application was reached. As a result, Luvuno farm will be part of the application. The EAP was then advised to obtain a landowner consent from Mr. Melusi Mchunu authorizing Saily Farming Company to plant on Luvuno 17498
- As it stands the total development footprint is approximately 2909.1127 hectares (Refer to Appendix D)
- The EAP was advised to consider the Agricultural feasibility study to support the EIA application.
- The EAP indicated that the developer has no intentions of constructing new roads, as there are already existing roads/tracks on the farm. The EAP was therefore advised that such statement should appear on the scoping report.

10.4 Environmental Assessment Triggers

Based on the type of activity involved, the extent and the biophysical environment within which is set to occur as reflected in **Table 3**, the required environmental assessment for the project

is a Scoping and EIA process. Refer to **Section 9** for the project's legal framework and specifically the activities triggered by the project in terms of Listing Notices 1, 2 and 3 of the EIA Regulations of 2017).

10.5 Environmental Assessment Authorities

In terms of NEMA, the lead decision-making authority for the environmental assessment is EDTEA, as the project proponent (Saidy Farming) is a private company.

Various other authorities within jurisdiction over elements of the receiving environment or project activities (refer to **Section 9**) will also be consulted during the course of the EIA. Refer to the database of Interested and Affected Parties (IAPs) contained in Appendix D for a list of the government departments that were notified during the EIA process to date.

10.6 Scoping Process

The process for seeking authorization under NEMA is being undertaken in terms of the prevailing EIA Regulations of 2017.

An outline of the Scoping and EIA process for the proposed planting of pomegranate trees is provided in Figure 2.

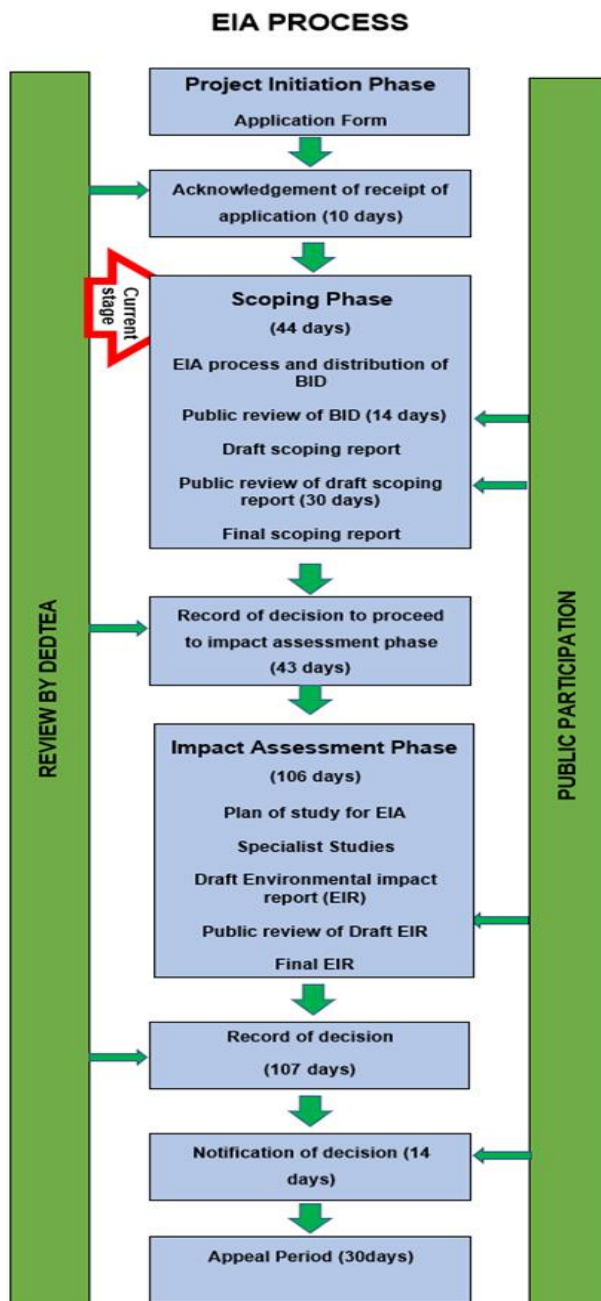


Figure2: EIA Process

The purpose of Scoping, which constitutes the first phase of the formal EIA process, is as follows:

- Identify the legal framework in terms of the proposed project
- Identify and engage with IAPs and allow for adequate participation in the process;
- Duly consider alternatives for achieving the project's objectives;
- Identify significant issues to be investigated further during the execution of the EIA phase;
- Clarify the roles and responsibilities of various stakeholders in the process;

- Determine the scope of the ensuing EIA phase, in terms of specialist studies, public participation, assessment of impacts and appraisal of alternatives; and
- Allow for informed decision-making by DEA and other authorities with regard to the EIA process.

10.6.1 Landowner Consent

According to Regulation 39(1) of GN No. 326 (7 April 2017), if the proponent is not the owner or person in control of the land on which the activity is to be undertaken, the proponent must, before applying for an environmental authorization in respect of such activity, obtain the written consent of the landowner or person in control of the land to undertake such activity on that land.

One of the proposed development sites belongs to TMSN Holdings (Pty) Ltd, as a result, a landowner consent will be obtained from the aforementioned individual prior to applying for an Environmental Authorizations.

10.6.2 Landowner Notification

The details of the affected landowner(s) are included in the IAPs database contained in Appendix D.

10.6.3 Application Form

A copy of the Application Form, which will be submitted to KZN DEA.

10.6.3 Screening of Alternatives

Alternatives are the different ways in which the project can be executed to ultimately achieve its objectives. Examples could include carrying out a different type of action, choosing an alternative location or adopting a different technology or design for the project.

The following alternatives were investigated with regards to the planting of pomegranate trees

- No-option- Basically means do nothing, leave the land lying fallow.
- Irrigated pomegranate trees
- Rain-fed pomegranate trees

Rain-fed pomegranate trees were deemed to be the most preferable alternative, due to the fact that they can withstand drought-prone conditions as they require less water to grow. This

preferred alternative will ensure that water from the pan, dam or rivers is not negatively affected or threatened by the proposed development.

10.6.4 Prediction of Impact

- The potential environmental impacts associated with the proposed project were identified during the Scoping phase through consideration of the following:
- Proposed locations and the extent of the proposed development, which included site investigations as well as a desktop evaluation with a Geographical Information System (GIS) (various data sources) and aerial photography;
- Activities associated with the project life-cycle (i.e. Site Preparation, Planting and Harvesting season)
- Profile of the receiving environment and the potential sensitive environmental features and attributes;
- Input received during public participation from authorities and IAPs; and
- Legal and policy context.

The Scoping exercise aimed to identify and qualitatively predict significant environmental issues for further consideration and prioritization during the EIA stage. Note that “significance” relates to whether the effect (i.e. change to the environmental feature/attribute) is of sufficient importance that it ought to be considered and have an influence on decision-making.

During the EIA stage a detailed quantitative impact assessment will be conducted via contributions from the project team and requisite specialist studies, and through the application of the impact assessment methodology contained in Section 14. Suitable mitigation measures will be identified to manage (i.e. prevent, reduce, rehabilitate and/or compensate) the environmental impacts, and will be included in the EMP.

11. LIMITATIONS AND ASSUMPTIONS

The following assumptions and limitations accompany the Scoping exercise:

- In accordance with the purpose of Scoping, the report does not include specialist investigations on the receiving environment, which will only form part of the EIA phase. The environment in the project area was primarily assessed in the Scoping phase through site visits and appraisals, desktop screening, incorporating existing information from previous studies, and input received from authorities and IAPs. A refinement of all maps will also be undertaken in the EIA phase, if necessary.

12. A DESCRIPTION OF THE ENVIRONMENT THAT MAY BE AFFECTED BY THE ACTIVITY

This section provides a general description of the status quo of the receiving environment in the project area. This serves to provide the context within which the Scoping exercise was conducted. It also allows for an appreciation and identification of sensitive environmental features and possible receptors of the effects of the proposed project.

Where necessary, the regional context of the environmental features is also explained, with an ensuing focus on the local surrounding environment. More in-depth discussions on the receiving environment will be provided in the EIA Report, where the findings of the requisite specialist studies will be incorporated into the document.

A brief overview is also provided of the manner in which the environmental features may be affected (positively or negatively) by the proposed development. Significant environmental issues are discussed further in Section 13. These preliminary impacts are only discussed concisely on a qualitative level, as part of the Scoping phase. The EIA report will provide a comprehensive evaluation of the potential impacts and will quantify the effects to the environment based on the methodology presented in Section 15

12.1 CLIMATE

The regional climatic conditions vary considerably between winter and summer months. The region (Amajuba) usually experiences very cold weather condition in winter dropping up to less than -1 degrees Celsius and very hot weather conditions in summer reaching 30 degrees Celsius and above. The average annual rainfall is estimated to be between 504mm and 1149mm and this is consistent throughout the district with no major deviation between the local municipal regions. (Biodiversity Sector Plan, 2014)

The climate in eMadlangeni is mild and generally warm and temperate, and generally warm. The climate is classified as Cfb by the Köppen-Geiger system, at an average temperature of 20.7 °C, January is the hottest month of the year. The lowest average temperatures in the year occur in June when it is around 6.7 °C. (see **Figure 3**).

The Municipality receives an average of 691mm of rainfall annually. Precipitation is the lowest in July, with an average of 14 mm. The greatest amount of precipitation occurs in February, with an average of 104 mm. Between the driest and wettest months, the difference in precipitation is 90 mm. The variation in temperatures throughout the year is 14.0 °C.

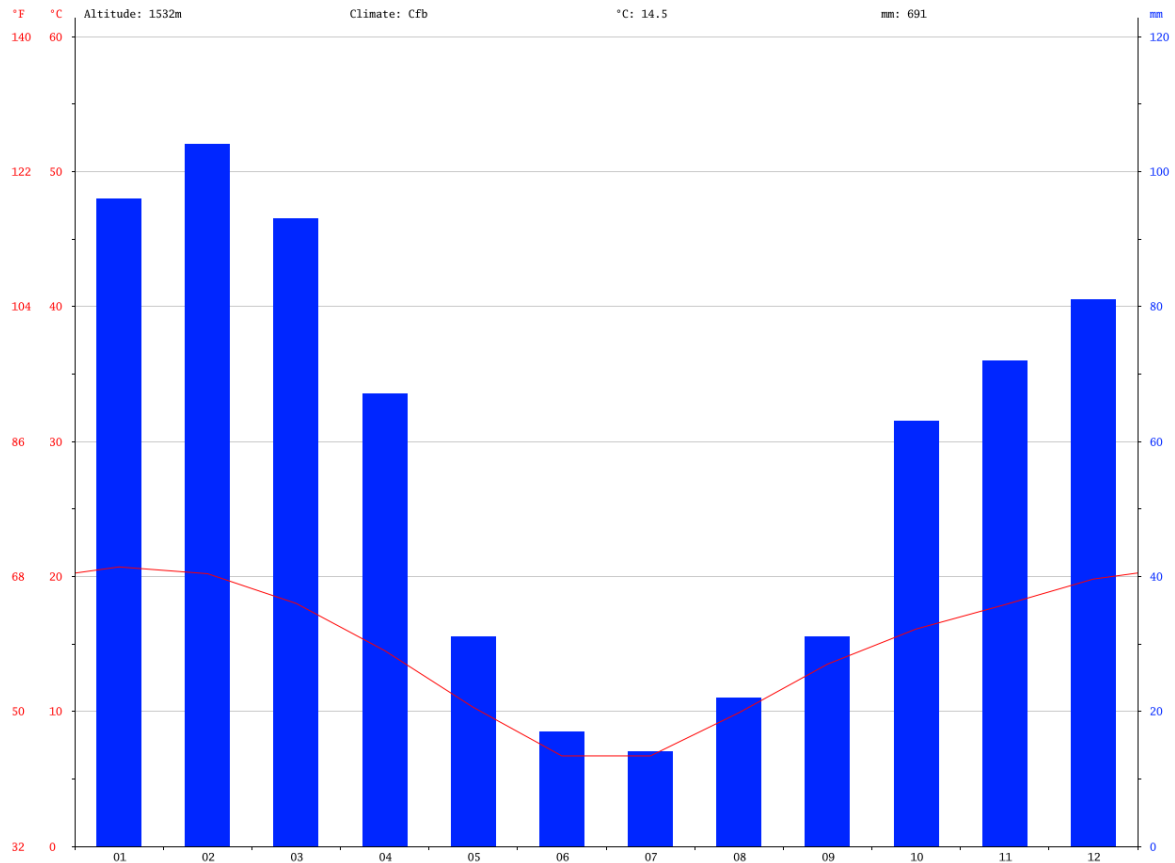


Figure 3: Monthly rainfall and temperature within eMadlangeni Municipality

12.1.1 Potential Impact

There are no direct adverse impacts which were identified relating to climate which may arise as a result of the development. Conversely, the planting of trees will contribute to the environment by providing oxygen, improving air quality and climate change amelioration. However, measures to reduce the project’s carbon footprint will be considered further in the EIA phase.

Climate change may impact on the project through extreme floods or drought, which may pose a risk to the trees.

12.1.2 Specialist Triggered/ Further Investigations

The EMPr will contain measures to minimise the carbon footprint.

12.2 TOPOGRAPHY

The regional topography ranges between 1042m and 2290 above sea level. Refer to table 3 below. The innermost areas within Newcastle, Danhauser, and eMadlangeni are relatively flat, with the terrain becoming steeper towards the northern, northeastern and western edges of the district. (Amajuba District Municipality Biodiversity Sector Plan, 2014).

Table 11.1: Topological variables of the Amajuba District per Local Municipality

Local Municipalities				District
	Newcastle	EMadlangeni	Danhauser	
Extent				
Area (Km ²)	1 855 km ²	3 539 km ²	1516 km ²	6 910 km ²
Elevation (Meters above sea level)				
Minimum	1140	1149	1143	1042
Maximum	2247	2276	2104	2290

The Municipality within which the development is located (eMadlangeni) is the largest of the three local municipalities, measuring at 3 539 Km². The municipality covers the central regions of Amajuba District on the north-western parts of KwaZulu-Natal. Majority of the municipal area is made up of moderate to gentle slopes. However, the north and Northeastern regions are characterized by undulating hills associated with the Balele Mountains. Consequently, the northern region is the steepest terrains in the municipality, where altitudes increase to 1,900m above sea level (eMandlaneni IDP, 2018).

The proposed development is located on a flat surface, with only the northwestern border touching the steep surfaces. Refer to figure 1 below

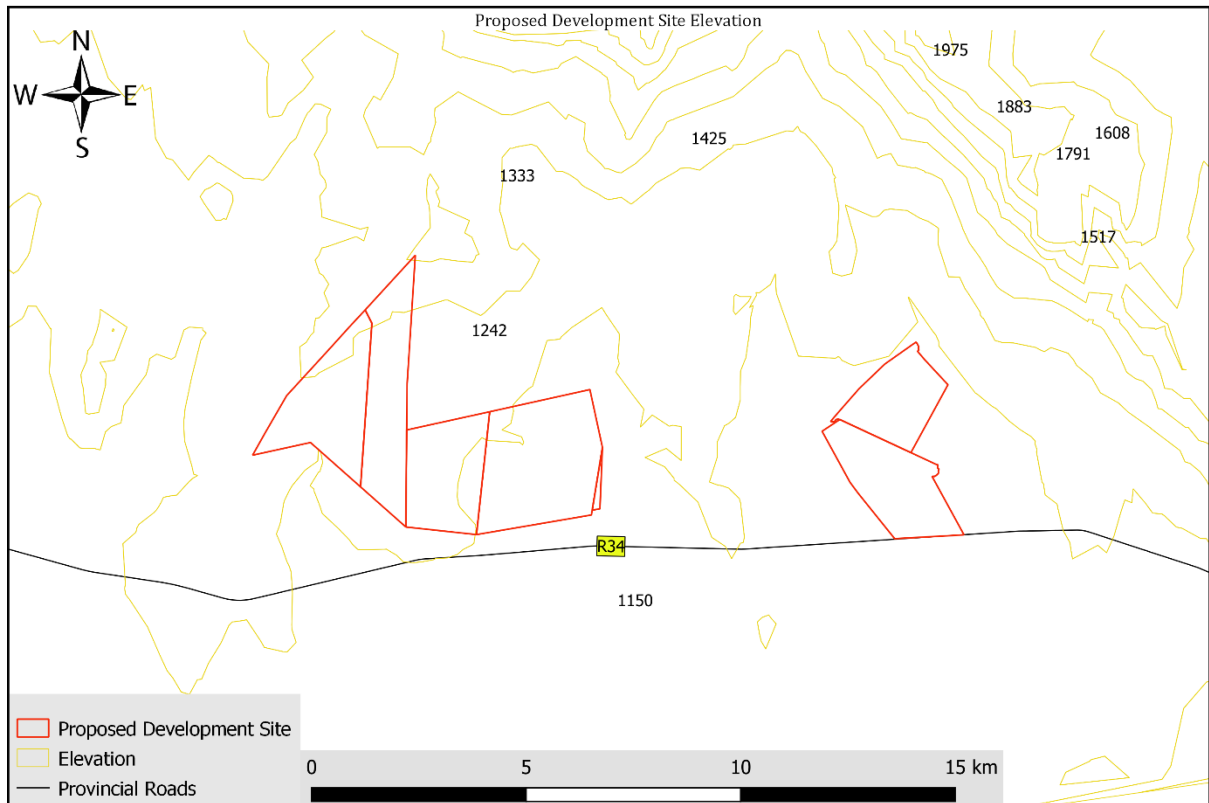


Figure 4: Elevation above sea level

12.2.1 Potential Impacts

The visual impact caused by the proposed project.

12.2.2 Specialist Triggered/Further Investigations

Visual impacts to be considered further in the EIA phase and addressed by the EMP

12.3 GEOLOGY AND SOILS

At the regional level, the area is characterized by transported soils, colluvial and residual of Pleistocene and Recent origin. Most soils appear to be very clayey and expansive, that is they have shrink and swell properties according to their water content, with this type of soil often associated with wetlands (Amajuba District Municipality, 2012).

The project area is primarily underlain by the Vryheid Formation, Ecca Group, Arenite. Refer to figure 4 below

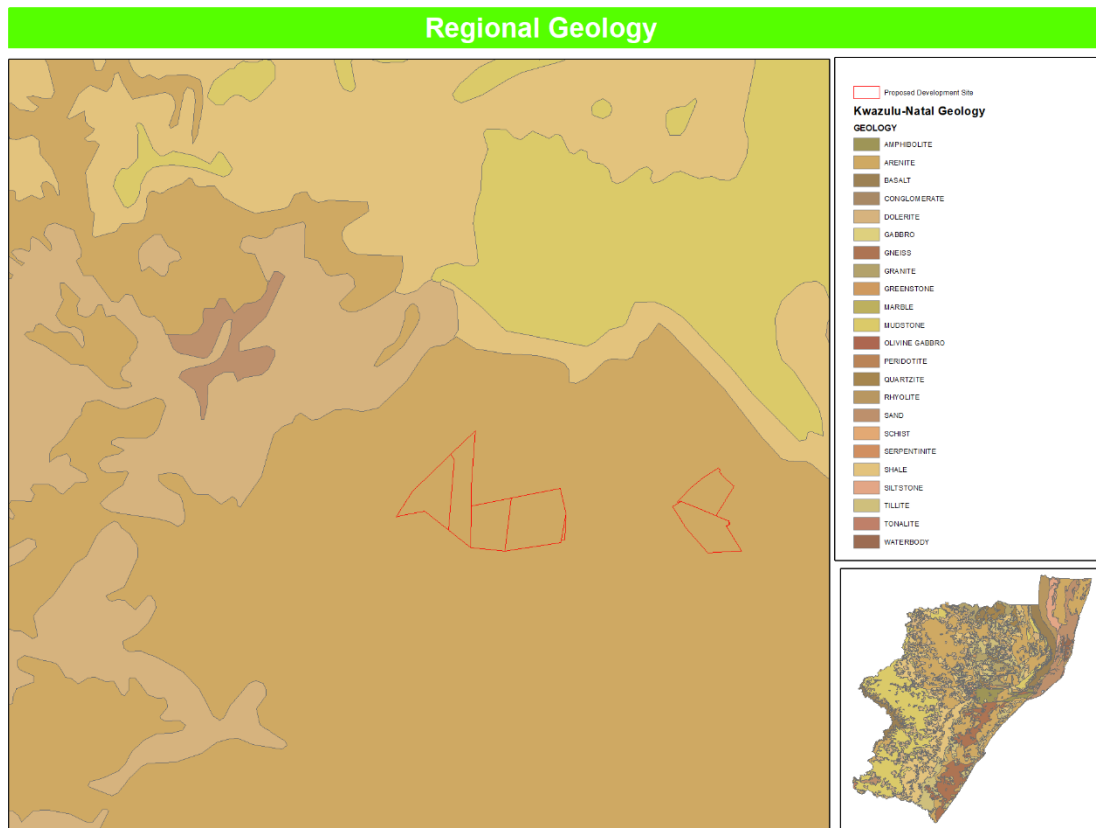


Figure 5: Regional Geology

12.3.1 Potential Impact

If poor soil management systems are carried out, physical (compacts, reduced water infiltration, etc), chemical (depletion of nutrients), biological (depletion of soil carbon) and ecological impact on soil can be anticipated. Use of heavy equipment during soil preparation phase could lead to soil compaction. Soil could also be contaminated through, leakage from equipment (tractors).

12.3.2 Specialist Triggered/Further Investigations

An agricultural study will be carried out to confirm the suitability of the soil for the proposed development and also provide in-depth measures on soil management.

The EMPr will also contain measures to mitigate against impacts to soil, for example, the management of topsoil, preventing soil contamination during site preparation, planting and operational phase (harvesting), etc.

12.4 SURFACE WATER

The Amajuba District Municipality is characterized by extensive rivers systems and tributaries, which falls within two catchments, the Thukela and Pongola. In addition, the District has four important and sensitive wetlands, namely Blood River Vlei, Boschoffsvlei, Groenvlei, and Padavlei.

The proposed site is located on W32B quaternary catchment, which falls within, V primary drainage region and Pongola-Mtamvuna Water Management Area. Refer to Figure 5 below.

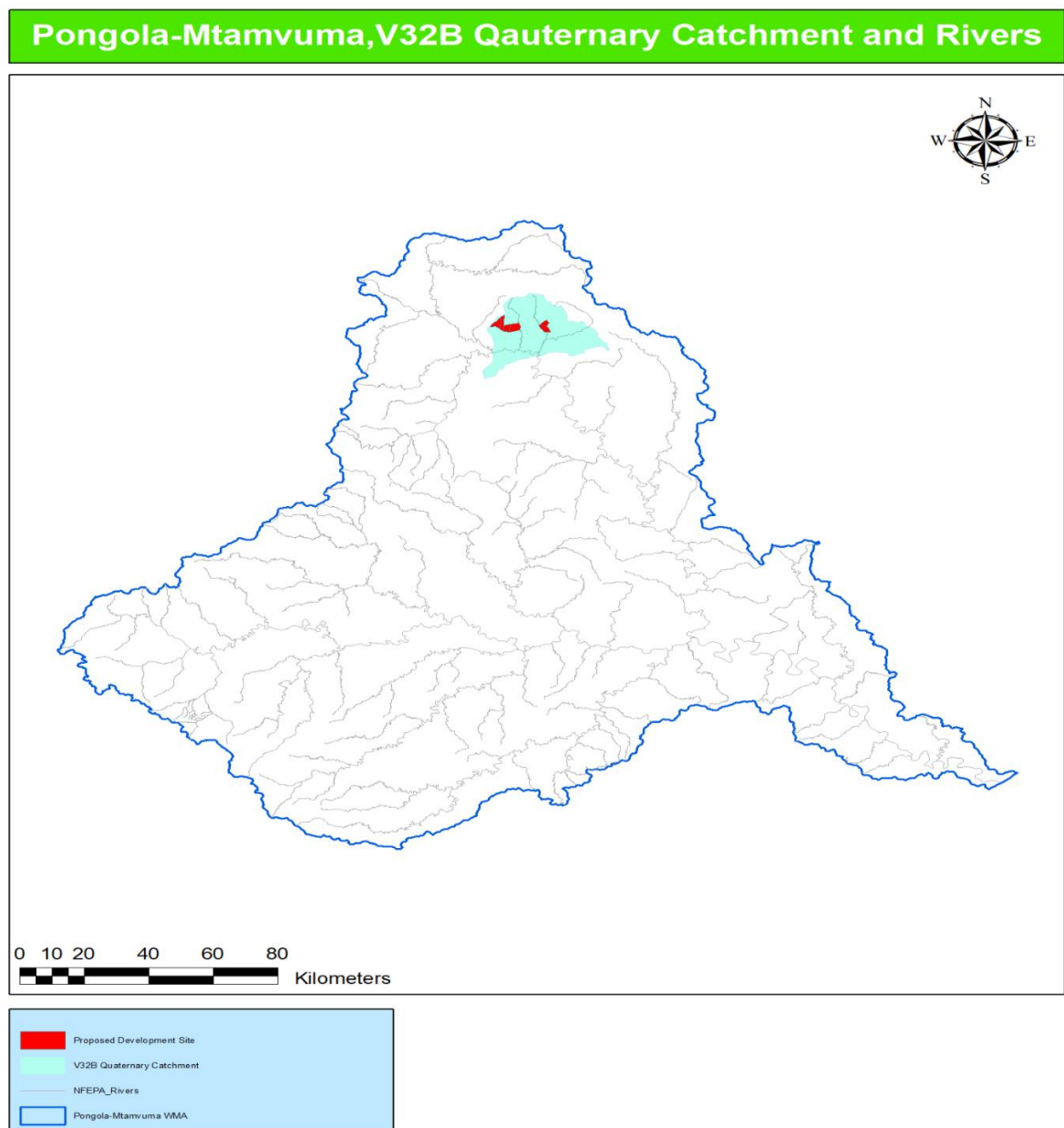


Figure 6: V32B Quaternary Catchment

There are four major rivers found within V32B Quaternary Catchment, namely; Kweekspruit, Dorpspruit, Wasbankspruit, and buffels. From the aforementioned systems, two rivers border the site; Kweekspruit and Wasbankspruit Refer to figure 6 below.

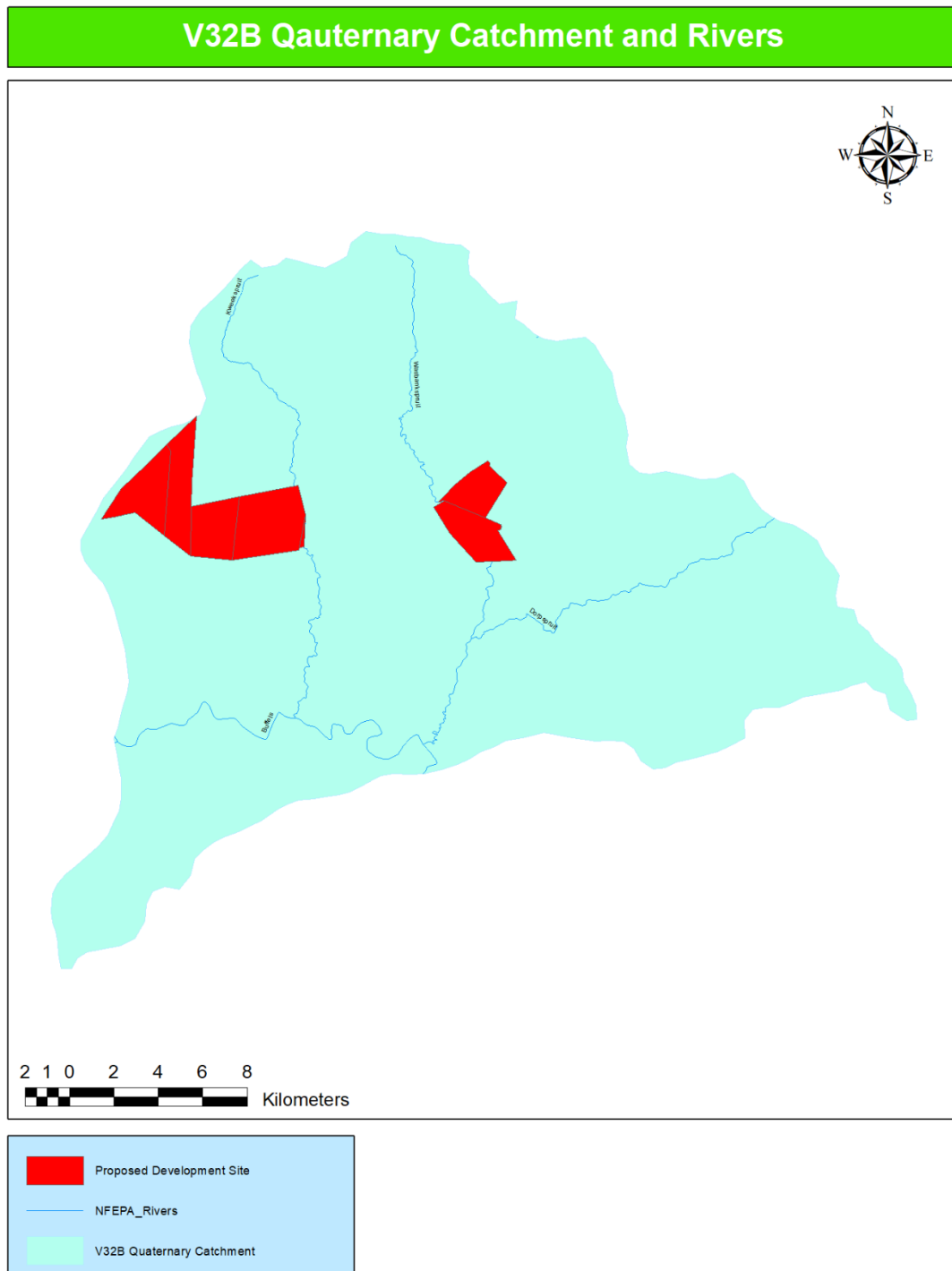


Figure 7: Rivers within V32B Quaternary Catchment

12.4.1 Wetlands

The wetlands in the project area were identified on a desktop level based on the National Freshwater Ecosystem Priority Areas (NFEPA) coverage (CSIR, 2011), are shown in Figure 7 below.

Wetlands are a critical part of our natural environment. They provide habitat for animals and plants and many contain a wide diversity of life, supporting plants and animals that are found nowhere else. Wetlands also provide important range of environmental, social and economic services.

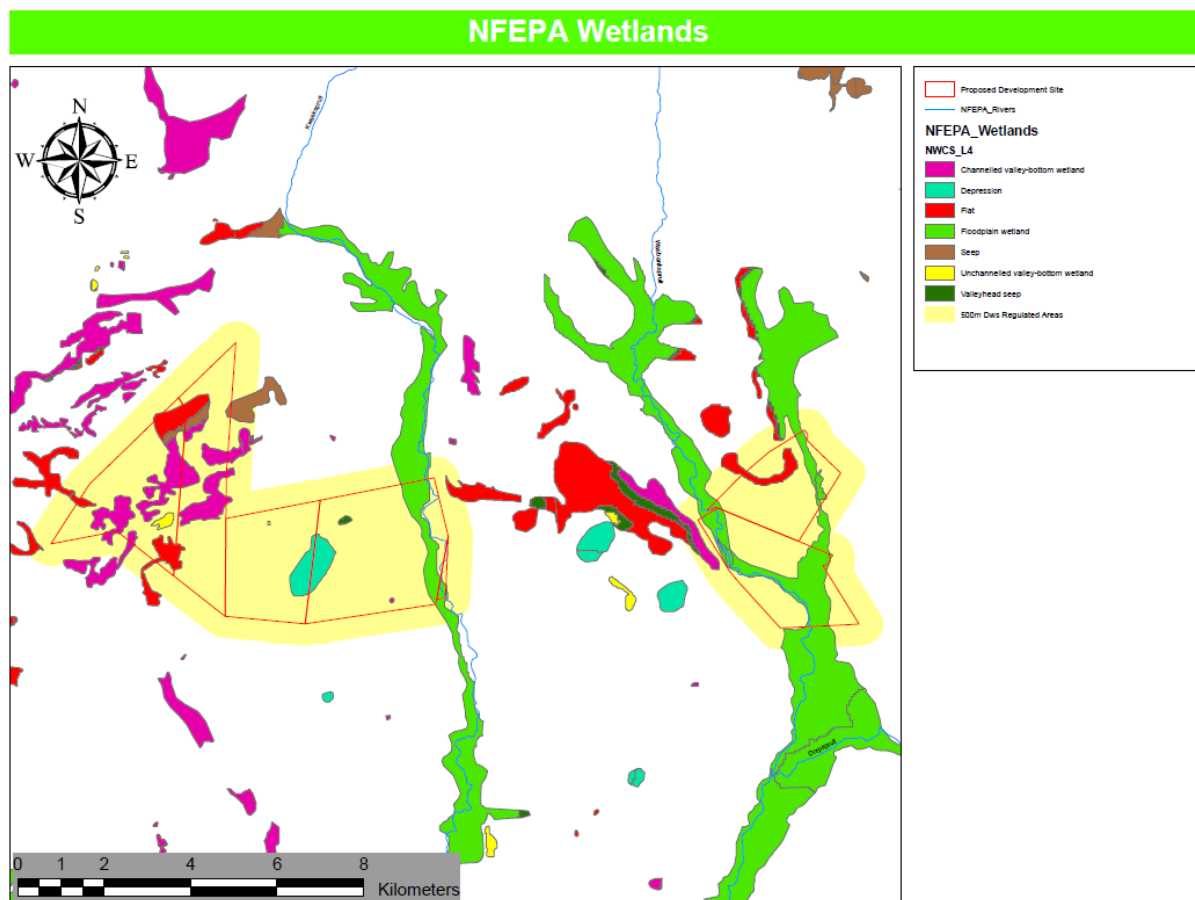


Figure 8: Wetland in and around the development location

12.4.2 Potential Impacts

The proposed development will encroach most the identified wetlands, excepts the depression wetland, two rivers systems which border the site and the dam (which is not reflected on the map, please see Appendix B). A 50 meters buffer will be applied between the planting of trees and the aforementioned water resources. Nonetheless, as the development will encroach most of the wetlands, the following impacts are envisaged;

- Destabilization of morphology during soil preparation and planting season
- Permanent alteration of flow and the structure (i.e. bed and banks) of wetlands
- Reduction in the biodiversity of aquatic biota as a result of the abovementioned drivers.

Since the proposed planting of pomegranate trees encroach upon the regulated area of a watercourse (i.e. 1:100-year flood line / delineated riparian or 500 m of a wetland habitat), water use authorization will be required in terms of Section 21 of the National Water Act (Act No. 36 of 1998). In accordance with Section 27 of this Act, the following factors need to be taken into consideration by DWS before an authorization may be issued.

- Existing lawful water uses;
- The need to redress the results of past racial and gender discrimination;
- Efficient and beneficial use of water in the public interest;
- The socio-economic impact of the water use or uses if authorized, or of the failure to authorize the water use or uses;
- Any catchment management strategy applicable to the relevant water resource;
- The likely effect of the water uses to be authorized on the water resource and on other water users;
- The class and the resource quality objectives of the water resource;
- Investments already made and to be made by the water user in respect of the water use in question;
- The strategic importance of the water uses to be authorized;
- The quality of water in the water resource which may be required for the Reserve and for meeting international obligations; and
- The probable duration of any undertaking for which water use is to be authorized.

12.4.3 Specialist Triggered/Further Investigations

A Wetland Impact Assessment will be undertaken in the EIA phase. The status of wetlands (including delineation) and impacts to these systems will be assessed as part of this study. A wetland specialist will also provide recommendations or mitigation measures

Best practices to mitigate impacts to watercourses will be included in the EMPr.

12.5 Threatened Ecosystems

In partnership with the Department of Environmental Affairs, the South African National Biodiversity Institute published a draft report titled "Threatened Ecosystems in South Africa:

Descriptions and Maps”, to provide baseline information on the List of Threatened Ecosystems (SANBI, 2009). The aim was to provide a description and a status of ecosystems using practical and credible set of criteria of ecosystems.

According to the data sourced from SANBI threatened terrestrial ecosystems were recorded on or near the project area (Figure 8).

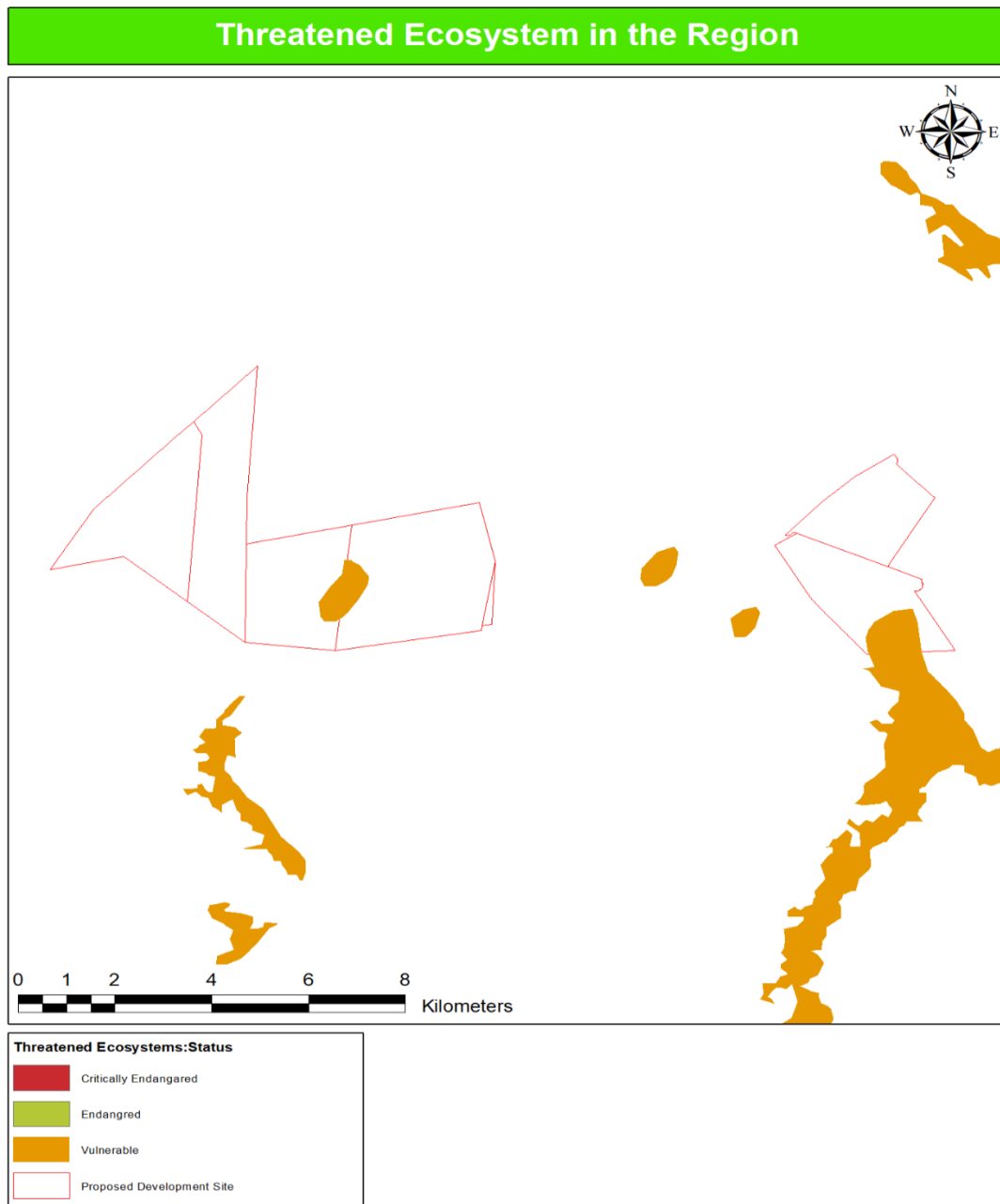


Figure 9: Threatened Ecosystem within or in close proximity to the development location

12.6 Flora

The municipal area is covered by seven main vegetation types, namely, Amersfoort Highveld clay Grassland, Eastern Mistbelt forest, Income Sandy Grassland, KwaZulu-Natal Highland Thornveld, Low Escarpment Moist Grassland, Northern Kwazulu-Natal Moist Grassland, Paul Pietersburg Moist Grassland, Wakkerstroom Montane Grassland and Freshwater Wetlands (Eastern Temperate Wetlands). Eastern Mistbelt forest has a conservation status is rated as endangered, while Northern Kwazulu-Natal Moist Grassland, Paul Pietersburg Moist Grassland, and Freshwater Wetlands are vulnerable.

The proposed development site is located on the grassland biome, with the majority of the site specifically situated on Income Sandy Grassland (classified as vulnerable) and the rest is situated in Kwazulu-Natal Highland Thornveld (classified as least threatened).

According to Low and Rebelo (1996), grassland areas are mainly found high central plateau of South Africa, the inland areas of KwaZulu-Natal and the Eastern Cape. As with many grasslands, Trees are absent, except in a few localized habitats and geophytes are often abundant (Low and Rebelo, 1996).

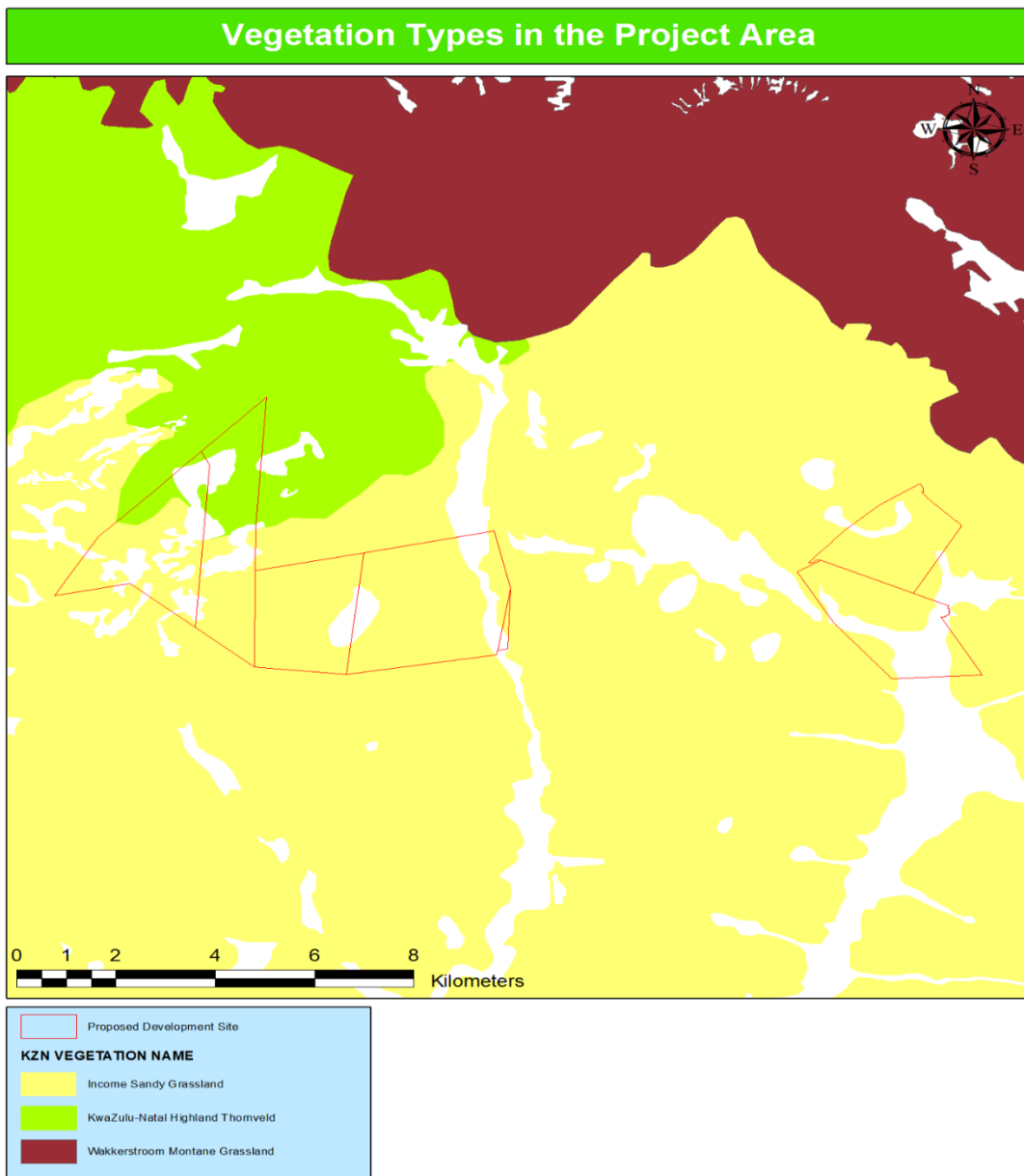


Figure 10: Kwazulu-Natal Regional Vegetation

12.6.1 Potential Impact

Potential impacts relating to vegetation includes;

- clearance of vegetation to make way for the planting of trees.
- Destruction of habitats
- Potential encroachment of Alien Invasive Species

12.6.2 Specialist Triggered/Further Investigation

The Terrestrial Ecological Impact Assessment will be undertaken in an EIA phase to assess the status of the sensitive ecological features. Areas to be affected by project activities will be surveyed to identify sensitive and significant floral species. Suitable mitigation measures will be identified and recommendations will be made to address potential impacts.

The compatibility of the project with the Amajuba District Biodiversity Plan (2014) and other environmental management and planning tools will be considered further during the EIA phase. Mitigation measures will be established during the EIA phase to manage the potential impacts to vegetation, removal of protected trees and medicinal plants, encroachment by exotic species and to address the overall reinstatement and rehabilitation of the area affected within the construction domain (outside of the permanent infrastructure footprint).

12.7 Fauna

12.7.1 Mammals

The project area is located within 2730CA quarter degree square in terms of the 1:50 000 grid of South Africa. SANBI uses this grid system as a point of reference to determine any Red Data plant species or any species of conservation importance occurring in South Africa.

Table 12.2: Definitions of Red Data status (Raimondo et al. 1999)

Symbol	Status	Description
VU	Vulnerable	A taxon is Vulnerable when the best available evidence indicates that it meets any of the five International Union for Conservation of Nature (IUCN) criteria for Vulnerable and it is therefore considered to be facing a high risk of extinction in the wild.
NT	Near Threatened	A taxon is Near Threatened when available evidence indicates that it is close to meeting any of the five IUCN criteria for Vulnerable and it is therefore likely to qualify for a threatened category in the near future.

The table below provides the potential mammal species that could be found in the project which have been recorded in the grid cell 2730CA (Institute of African Ornithology, 2019). According to this list, only Southern African Vlei Rat, African Clawless Otter, and African White-

tailed Rat are mammal species of conservation importance known to occur in the region, and neither of these is expected to be present.

Table 12.2: Mammal species recorded in grid cell 2730CA (Institute of African Ornithology, 2019)

Family	Scientific Name	Common Name	Red List Category	Last Recorded
Bovidae	Raphicerus Campestris	Steenbok	Least Concern	2013-11-24
Bovidae	Sylviapra grimmia	Bush Duiker	Least Concern	20-11-23
Cercopithecidae	Papio ursinus	Chama Baboon	Least Concern	-
Felidae	Caracal caracal	Caracal	Least Concern	-
Felidae	Lepatailurus serval	Serval	Least Concern	2014-10-12
Galagidae	Otolemur crassicaudatus	Brown Greater Galago	Least Concern	1980-09-02
Herpestidae	Cynictic penicillata	Yellow Mongoose	Least Concern	2013-11-23
Herpestidae	Herpestes sanguineus	Slender Mongoose	Least Concern	2013-11-01
Herpestidae	Suricata suricatta	Meerkat	Least Concern	1998-01-28
Laporidae	Lepus saxatillis	Scrub Hare	Least Concern	2013-10-29
Muridae	Aethomys ineptus	Tete Veld Aethomys	Least Concern	1980-12-02
Muridae	Aethomys namaquensis	Namaqua Rock Mouse	Least Concern	1998-01-30
Muridae	Dasymys uncomtus	Common Dasysms	Least Concern	1980-12-02
Muridae	Gerbilliscus brantsii	Highveld Gerbil	Least Concern	1998-01-26
Muridae	Lemniscomys rosalia	Single-stripped Lemniscomys	Least Concern	1980-12-02
Muridae	Mastomys natalensis	Natal Mastomys	Least Concern	1998-04-14
Muridae	Mus (Nannomys) minutoides	Southern African Pygmy Mouse	Least Concern	1998-04-17
Muridae	Otomys angoniensis	Angoni Vlei Rat	Least Concern	1980-10-02

Muridae	Otomys auratus	Southern African Vlei Rat	Near Threatened	1958-08-13
Muridae	Rattus norveicus	Brown Rat	Least Concern	2008-02-29
Muridae	Rattus rattus	Roof Rat	Least Concern	2007-03-23
Mustelidae	Aonyx capensis	African Clawless Otter	Near Threatened	1998-01-26
Mustelidae	Hydrictris maculicollis	Spotted-necked Otter	Least Concern	2013-11-02
Nesomyidae	Dendromus melanotis	Gray African Climbing Mouse	Least Concern	1998-01-28
Nesomyidae	Mystromys albicaudatus	African White-tailed Rat	Vulnerable	1998-01-28
Nesomyidae	Saccostomus campestris	Southern Africa Pouched Mouse	Least Concern	1980-10-02
Nesomyidae	Steatomys Krebsii	Kreb's African Fat Mouse	Least Concern	1980-12-02
Nesomyidae	Steatomys pratensis	Common African Fat Mouse	Least Concern	1998-04-15
Rhinolophidae	Rhinolophus clivus	Geoffroy's Horseshoe Rat	Least Concern	1980-02-14
Soricidae	Ceocidua flevescens	Greater Red Musk Shrew	Least Concern	1998-04-15
Soricidae	Suncus infinitesimus	Least Dwarf Shrew	Least Concern	1998-04-17
Soricidae	Suncus varilla	Lesser Dwarf Shrew	Least Concern	1998-04-16
Thryonomyidae	Thryonomys swinderianus	Greater Cane Rat	Least Concern	-
Vespertillionidae	Miniopterus fracterculus	Lesser Long- fingered Bay	Least Concern	1980-02-14
Vespertillionidae	Myotis tricolor	Temminck's Myotis	Least Concern	1998-02-20
Vespertillionidae	Neoromicia capensis	Cape Serotine	Least Concern	1998-02-21

Vespertilionidae	Neoromicia nana	Banana Pipistrelle	Least Concern	1998-02-20
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12.7.2 Avifauna

The following table presents a variety of bird species which could occur within 2730CA grid. With regards to the conservation status of being vulnerable, threatened or near-threatened none of the following species were rated. Bird distribution data of the Southern African Bird Atlas Project obtained from the Avian Demography Unit of the University of Cape Town was used in order to ascertain which species could occur in the study area. The information was accessed online.

Table 12.3: Red Data bird species recorded in the grid cell 2730CA (Institute of African Ornithology, 2019)

Family	Scientific name	Common name	Red List Category	Last recorded
Accipitridae	Accipiter melanoleucus	Black Sparrowhawk (Goshawk)	-	2018/02/22
Alaudidae	Calandrella [brachydactyla] cinerea	Red-capped Lark	-	2018/02/22
Alaudidae	Chersomanes albofasciata	Spike-heeled Lark	-	2018/02/22
Anatidae	Anas capensis	Cape Teal	-	2018/01/18
Anatidae	Anas erythrorhyncha	Red-billed Teal (Duck)	-	2017/09/20
Anatidae	Anas hottentota	Hottentot Teal	-	2017/11/30
Anatidae	Anas sparsa	African Black Duck	-	2018/02/22
Anatidae	Netta erythrophthalma	Southern Pochard	-	2018/01/18
Anatidae	Oxyura maccoa	Maccoa Duck	-	2018/01/10
Anatidae	Tadorna cana	South African Shelduck	-	2017/09/20

Apodidae	Apus barbatus	African Black (Black) Swift	-	2018/01/10
Ardeidae	Ardea cinerea	Grey Heron	-	2018/01/10
Ardeidae	Ardea melanocephala	Black-headed Heron	-	2018/01/18
Ardeidae	Bubulcus ibis	Cattle Egret	-	2018/02/22
Burhinidae	Burhinus capensis	Spotted Thick-knee (Dikkop)	-	2018/01/18
Charadriidae	Charadrius hiaticula	Common Ringed Plover	-	2018/01/12
Charadriidae	Charadrius pallidus	Chestnut-banded Plover	-	2017/08/28
Charadriidae	Charadrius pecuarius	Kittlitz's Plover	-	2017/08/28
Charadriidae	Charadrius tricollaris	Three-banded Plover	-	2017/11/30
Charadriidae	Vanellus armatus	Blacksmith Lapwing (Plover)	-	2017/08/28
Charadriidae	Vanellus senegallus	African Wattled Lapwing (Plover)	-	2017/11/30
Cisticolidae	Cisticola ayresii	Wing-snapping (Ayre's) Cisticola	-	2013/03/31
Cisticolidae	Cisticola juncidis	Zitting (Fan-tailed) Cisticola	-	2017/06/08
Dendrocygnidae	Dendrocygna viduata	White-faced (Whistling-) Duck	-	2018/02/22
Falconidae	Falco amurensis	Amur (Eastern Red-footed) Falcon (Kestrel)	-	2018/01/10
Hirundinidae	Hirundo rustica	Barn (European) Swallow	-	2017/01/18

Hirundinidae	Hirundo spilodera	South African Cliff-Swallow	-	2017/08/29
Hirundinidae	Riparia paludicola	Brown-throated (Plain) Martin	-	2017/01/18
Laridae	Chlidonias leucopterus	White-winged Tern	-	2018/01/18
Laridae	Larus cirrocephalus	Grey-headed Gull	-	2018/03/07
Otididae	Afrotis afraoides	Northern Black Korhaan (split)	-	2011/11/22
Otididae	Eupodotis caerulescens	Blue Korhaan	-	2017/08/28
Phalacrocoracidae	Phalacrocorax Africanus	Reed (Long-tailed) Cormorant	-	2017/09/20
Phoenicopteridae	Phoenicopus minor	Lesser Flamingo	-	2017/08/28
Phoenicopteridae	Phoenicopus roseus	Greater Flamingo	-	2018/01/10
Ploceidae	Ploceus velatus	Southern Masked-Weaver	-	2017/09/20
Ploceidae	Quelea quelea	Red-billed Quelea	-	2017/01/18
Rallidae	Gallinula chloropus	Common Moorhen	-	2018/01/10
Recurvirostridae	Himantopus himantopus	Black-winged Stilt	-	2018/02/22
Recurvirostridae	Recurvirostra avosetta	Pied (Avocet) Avocet	-	2018/02/22
Scolopacidae	Calidris ferruginea	Curlew Sandpiper	-	2017/08/28
Scolopacidae	Calidris minuta	Little Stint	-	2018/03/07
Scolopacidae	Philomachus pugnax	Ruff	-	2018/01/12
Scolopacidae	Tringa glareola	Wood Sandpiper	-	2018/03/07

Scolopacidae	Tringa nebularia	Common Greenshank	-	2017/08/28
Scolopacidae	Tringa stagnatilis	Marsh Sandpiper	-	2018/02/22
Threskiornithidae	Plegadis falcinellus	Glossy Ibis	-	2018/01/12

12.7.3 Herpetofauna (Reptiles and Amphibians)

According to Branch (2001) reptile species generally thrives on riparian habitats due to the abundance availability of prey species such as frogs, birds and small mammals. These kinds of species tend to depend on vegetation cover and have also shown to be tolerant of a variety of habitats including their preys. With the continued transformation of wetland and riparian zone, these species have been forced to migrate from time to time and some have been lost in the process.

As defined by the Millennium Ecosystem Services (2003) amphibians play a crucial role in a form of supporting, provision and regulating ecosystem services. “Within aquatic ecosystems, amphibians affect algal communities, invertebrate populations, predator dynamics, and nutrient cycling” (Mushet et al.,2014:93). As the process of metamorphosis takes place, from larva to adult amphibians, they migrate from aquatic systems to terrestrial environment and with them move nutrients (Mushet et al.,2014:93). Despite the effort of conserving and protecting them, they are declining from global ecosystems at a rate estimated to be over 200 times greater than the background amphibian extinction rate. With their potential cause of decline differ from region to region, most scientist agree that the major contributing factor to amphibian declines globally is habitat destruction and/or degradation, affecting an estimated 63% of all amphibian species (Chanson et al., 2008).

Table 12.4 and 12.5 present a list of reptile and amphibian species which were recorded in the grid cell 2730CA respectively. According to the lists, no reptile or amphibian species of conservation importance is known to occur in the region.

Table12.4: Red Data reptile species recorded in the grid cell 2730CA (Institute of African Ornithology, 2019)

Family	Scientific name	Common name	Red List Category	Last recorded
Agamidae	<i>Acanthocercus atricollis</i>	Southern Tree Agama	Least Concern (SARCA 2014)	1986/04/30
Chamaeleonidae	<i>Chamaeleo dilepis</i>	Common Flap-neck Chameleon	Least Concern (SARCA 2014)	1900/06/15
Colubridae	<i>Crotaphopeltis hotamboeia</i>	Red-lipped Snake	Least Concern (SARCA 2014)	1932/10/06
Colubridae	<i>Philothamnus hoplogaster</i>	South Eastern Green Snake	Least Concern (SARCA 2014)	2013/11/23
Cordylidae	<i>Pseudocordylus melanotus melanotus</i>	Common Crag Lizard	Least Concern (SARCA 2014)	1998/01/29
Gekkonidae	<i>Pachydactylus vansoni</i>	Van Son's Gecko	Least Concern (SARCA 2014)	1998/01/29
Scincidae	<i>Trachylepis capensis</i>	Cape Skink	Least Concern (SARCA 2014)	1900/06/15
Scincidae	<i>Trachylepis punctatissima</i>	Speckled Rock Skink	Least Concern (SARCA 2014)	2006/01/15

Table12.5: Red Data amphibian species recorded in the grid cell 2730CA (Institute of African Ornithology, 2019)

Family	Scientific name	Common name	Red list	Last recorded
Bufo	<i>Sclerophrys capensis</i>	Raucous Toad	Least Concern	2001/01/19
Bufo	<i>Sclerophrys gutturalis</i>	Guttural Toad	Least Concern	2001/01/19
Bufo	<i>Vandijkophrynus gariensis gariensis</i>	Karoo Toad (subsp. gariensis)		1999/11/20
Hyperoliidae	<i>Hyperolius marmoratus</i>	Painted Reed Frog	Least Concern (IUCN ver 3.1, 2013)	2001/01/19

Hyperoliidae	Kassina senegalensis	Bubbling Kassina	Least Concern	2001/01/19
Pipidae	Xenopus laevis	Common Platanna	Least Concern	2001/01/19
Ptychadenidae	Ptychadena anchietae	Plain Grass Frog	Least Concern	1986/04/16
Ptychadenidae	Ptychadena oxyrhynchus	Sharprnosed Grass Frog	Least Concern	1986/06/19
Pyxicephalidae	Amietia delalandii	Delalande's River Frog	Least Concern (2017)	2013/11/23
Pyxicephalidae	Amietia fuscigula	Cape River Frog	Least Concern (2017)	2001/01/19
Pyxicephalidae	Cacosternum nanum	Bronze Caco	Least Concern (2013)	2001/01/19
Pyxicephalidae	Strongylopus grayii	Clicking Stream Frog	Least Concern	1999/11/20
Pyxicephalidae	Tomopterna cryptotis	Tremelo Sand Frog	Least Concern	2001/01/19
Pyxicephalidae	Tomopterna natalensis	Natal Sand Frog	Least Concern	2001/01/19

12.7.4 Invertebrates

The following table present butterflies which are found within 2730CA GRID and based on the data no butterfly's species of conservation importance are known to occur in the area.

Table 12.6: Red Data butterfly's species recorded in the grid cell 2730CA (Institute of African Ornithology, 2019)

Family	Scientific name	Common name	Red List Category	Last recorded
HESPERIIDAE	Afrogegenes sp.			1998/01/29
HESPERIIDAE	Eretis umbra umbra	Small marbled elf	Least Concern (SABCA 2013)	1998/01/26
HESPERIIDAE	Spialia asterodia	Star sandman	Least Concern (SABCA 2013)	2013/11/23
LYCAENIDAE	Actizera lucida	Rayed blue	Least Concern (SABCA 2013)	1998/01/29
LYCAENIDAE	Aloeides henningi	Henning's copper	Least Concern (SABCA 2013)	2013/10/29

LYCAENIDAE	Aloeides swanepoeli	Swanepoel's copper	Least Concern (SABCA 2013)	1998/01/27
LYCAENIDAE	Aloeides titei	Tite's copper	Least Concern (SABCA 2013)	1998/01/29
LYCAENIDAE	Anthene amarah amarah	Black-striped hairtail	Least Concern (SABCA 2013)	2006/01/14
LYCAENIDAE	Azanus natalensis	Natal babul blue	Least Concern (SABCA 2013)	2006/01/15
LYCAENIDAE	Cacyreus marshalli	Common geranium bronze	Least Concern (SABCA 2013)	2013/11/23
LYCAENIDAE	Chilades trochylus	Grass jewel	Least Concern (SABCA 2013)	2006/01/14
LYCAENIDAE	Chrysoritis lycegenes	Moorivier opal	Least Concern (SABCA 2013)	1956/01/02
LYCAENIDAE	Eicochrysops messapus mahallakoena	Cupreous blue	Least Concern (SABCA 2013)	2006/01/15
LYCAENIDAE	Lampides boeticus	Pea blue	Least Concern (SABCA 2013)	1998/01/29
LYCAENIDAE	Leptotes sp.			2013/11/01
LYCAENIDAE	Lycaena clarki	Eastern sorrel copper	Least Concern (SABCA 2013)	2013/11/01
LYCAENIDAE	Zizeeria knysna knysna	African grass blue	Least Concern (SABCA 2013)	1998/01/29
NYMPHALIDAE	Acraea acara acara	Acara acraea	Least Concern (SABCA 2013)	2006/01/14
NYMPHALIDAE	Acraea horta	Garden acraea	Least Concern (SABCA 2013)	1998/01/26
NYMPHALIDAE	Aeropetes tulbaghia	Table mountain beauty	Least Concern (SABCA 2013)	1998/01/29

NYMPHALIDAE	Danaus chrysippus orientis	African monarch, Plain tiger	Least Concern (SABCA 2013)	1998/01/29
NYMPHALIDAE	Junonia hierta cebrene	Yellow pansy	Least Concern (SABCA 2013)	2013/11/23
NYMPHALIDAE	Precis archesia archesia	Garden commodore	Least Concern (SABCA 2013)	1998/01/29
NYMPHALIDAE	Precis ceryne ceryne	Marsh commodore	Least Concern (SABCA 2013)	2006/01/14
NYMPHALIDAE	Precis octavia sesamus	Gaudy Commodore	Least Concern (SABCA 2013)	1998/01/29
NYMPHALIDAE	Pseudonympha magoides	False silver-bottom brown	Least Concern (SABCA 2013)	1998/01/29
NYMPHALIDAE	Vanessa cardui	Painted lady	Least Concern (SABCA 2013)	2013/11/01
NYMPHALIDAE	Ypthima sp.			2013/11/23
PIERIDAE	Belenois aurota	Brown-veined white	Least Concern (SABCA 2013)	1998/01/29
PIERIDAE	Colias electo electo	African clouded yellow	Least Concern (SABCA 2013)	2013/11/01
PIERIDAE	Eurema brigitta brigitta	Broad-bordered grass yellow	Least Concern (SABCA 2013)	2009/11/08
PIERIDAE	Pontia helice helice	Common meadow white	Least Concern (SABCA 2013)	2013/10/29

No Red Data scorpions or spiders are known to occur in the region (IAO, 2019).

12.7.5 Potential Impact

Potential impacts to fauna during the removal of vegetation and soil preparation phase include the following:

- Loss of habitat (e.g. removal of trees);
- Temporary or Permanent emigration of animals away from the area;
- Poaching and wilful harming of animals by workers;

12.7.6 Specialist Triggered/ Further Investigations

A terrestrial Impact Assessment study will be undertaken in an EIR phase and the aim of the study will be to identify habitats of critical importance and significant faunal species to be affected by the development. Recommendations and mitigations measures will be provided and they will form part of the EMPr

The compatibility of the project with the Amajuba Biodiversity Sector Plan (2015) and other environmental management and planning tools will be considered further during the EIA phase.

12.8 Amajuba Biodiversity Sector Plan

According to the Amajuba Biodiversity Sector Plan, the following terminologies describe features on the Biodiversity Plan. These definitions were adapted from the Document describing the Conservation Planning Terms for the EKZNW Spatial Planning Product (EKZNW, 2014).

➤ Critical Biodiversity Areas: Irreplaceable

Areas considered critical for meeting biodiversity targets and thresholds, and which are required to ensure the persistence of viable populations of species and the functionality of ecosystems.

➤ Critical Biodiversity Areas: Optimal

Areas that represent an optimized solution to meet the required biodiversity conservation targets while avoiding areas where the risk of biodiversity loss is high Category driven primarily by the process but is also informed by expert input.

➤ Ecological Support Areas (ESAs)

Functional but not necessarily entirely natural areas that are required to ensure the persistence and maintenance of biodiversity patterns and ecological processes within the critical biodiversity areas. The area also contributes significantly to the maintenance of ecological infrastructure.

➤ Ecological Support Areas: Species Specific

Terrestrial modified areas that provide a support function to a threatened or protected species, for example, agricultural land.

➤ **Ecological Infrastructure (EI)**

Areas of ecosystem service priority

➤ **Other Natural Areas**

Are natural, near-natural vegetation and functional habitats or landscapes not yet classified as one of the above categories (i.e. CBAs, ESAs, or EI)

A map showing the Amajuba Biodiversity Sector Plan in relation to the project area is provided in Figure 9. According to this map, the project footprint falls within the CBA Optimal and ESA

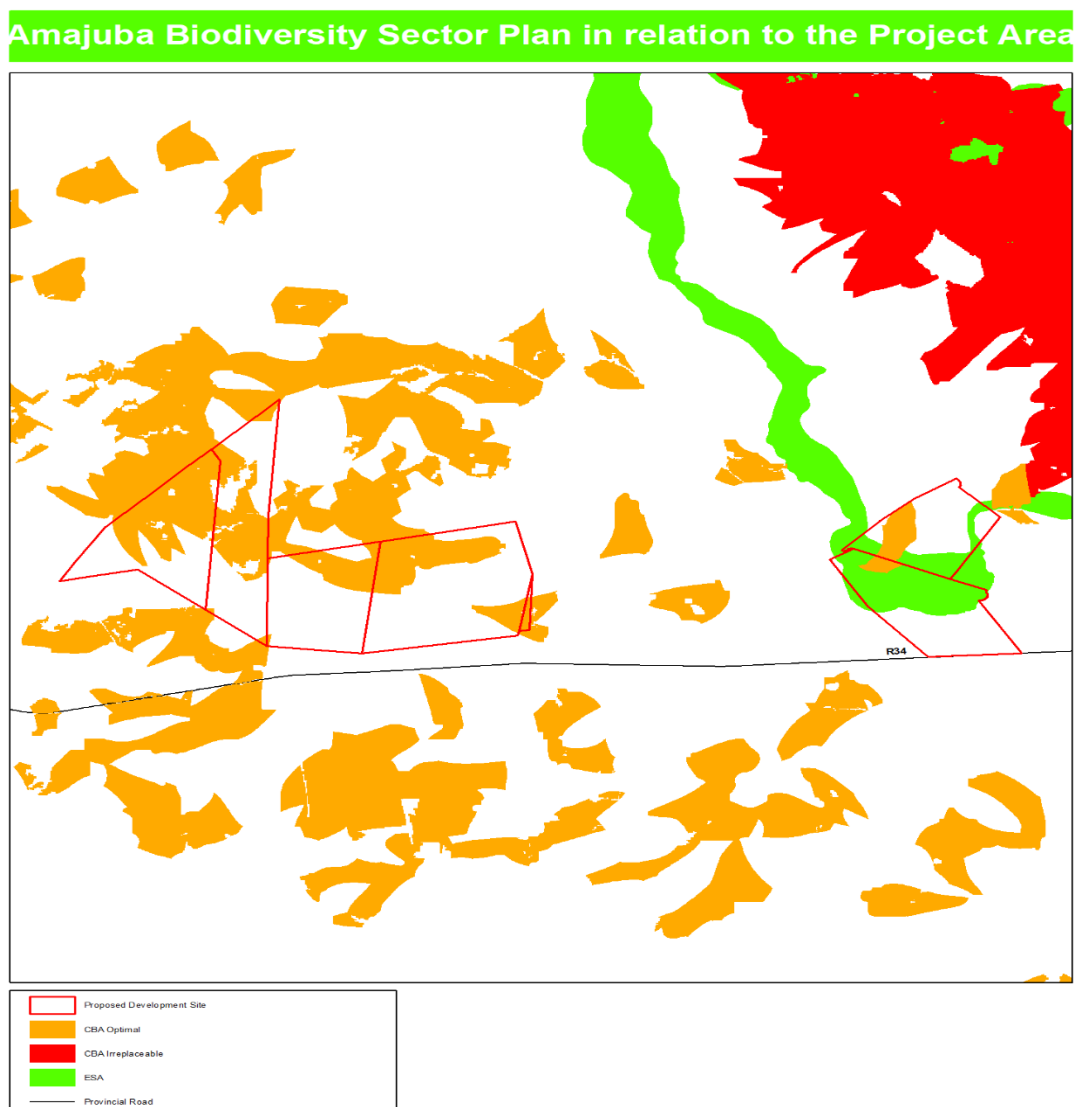


Figure 11: CBA and ESA in relation to the project location

12.9 Aesthetic qualities and Land Use

The general sense of the immediate visual environment is that the area is rural with residential units within farms. The site is characterized by an intermix of indigenous grassland and wetland landscape, as such few trees are found with the area. People living in the area use the land for residential purposes, grazing of livestock mostly subsistence farming and somewhat large-scale agricultural cultivation. Refer to Appendix C for more on case images.



12.9.1 Potential Impact

Potential visual impacts during the soil preparation phase include;

- Clearing of vegetation
- Moving tractors
- Inadequate waste management and housekeeping by workers
- Loss of sense of place
- High visibility of Pomegranate trees

12.9.2 Specialist Triggered/Further investigation

The potential impacts on aesthetics as a result of the proposed project activities will be assessed further during the EIA phase. The EMPr will further include measures to manage visual impacts

12.10 Historical and Cultural Features

At the municipal level, the area is rich in historical and cultural resources. The municipality forms part Battlefields of heritage tourism sites. The Blood River is of historical significance and runs on the southern portion of the municipality.

Within the project area or footprint, about three families live on the farm and during a public meeting held on the 15th of May 2019, it was discovered that there are graves on site, which the farm dwellers themselves know nothing about.

12.10.1 Potential Impact

Ancestral graves and potential archaeological sites could be affected by inundation by the works associated with this project and amongst others includes;

- Complete destruction and loss of graves,
- Removal or destruction of buildings, structures, places, and equipment of cultural importance.

12.10.2 Specialist Triggered/ Further Investigations

For thorough identification of abandoned homesteads and the locations of ancestral graves at abandoned would be ascertained by the Heritage Impact Assessment Study.

The EMPr will also include recommendations from a specialist.

12.11. Social and Economic Environment

12.11.1 Population Distribution

The EMadlangeni Municipality is one of three municipalities within Amajuba district, with a total population size of 34 442, which accounts for only 6% of the district population (Stat SA,2016). Majority of residents within the municipality reside in rural areas only 26% of the population live in the urban towns of Utrecht, Berouw, Waterval, and Kingstown. The municipality comprises of predominately young population, with the approximation of 74.38% below 35 years of age. The table below presents the age groups which were last recorded in 2016.

Table 12.7: Population Group by Age

0-14(children)	15-43(youth)	34-64(adults)	65+(elderly)
14228	13197	7142	2303

In 2016 the Municipality was demarcated into six wards, and the population size by each ward is presented on the table below

Table 12.8: Population Distribution by Wards

Ward 1	Ward 2	Ward 3	Ward 4	Ward 5	Ward 6
7701	4941	6030	6005	5554	4211

12.11.2 Water and Sanitation

With regards to water and sanitation, about 18 percent of the population still relies on rivers, streams, and dams as a source of water (Table 13). From the entire population, only 28,50% is connected to the municipal sewer system and the majority of the population (48.68%) relies on pit latrines (Table 14). Refer to the tables below;

Table 12.9: Sources of Water Within the Municipality (Stat SA, 2016)

Source of water	Percentage
Regional/Local water scheme (operated by municipality or other water services provider)	29,30%
Borehole	21,20%
Spring	7,70%
Rainwater tank	1,40%
Dam/Pool/Stagnant water	4,50%
River/Stream	18%
Water vendor	1,20%
Water tanker	14,50%
Other	2,20%

Table 12.10: Toilet Facilities (Stat SA, 2016)

Toilet Facility	Percentage
None	15,30%
Flush toilet (connected to sewerage system)	28,50%
Flush toilet (with septic tank)	4,60%
Chemical toilet	12,10%
Pit toilet with ventilation	2,20%
Pit toilet without ventilation	32,20%
Bucket toilet	0,60%
Other	4,40%

12.11.3 Energy Source

Approximately 48.50% of the household relies on electricity for lighting and the remaining population (48.30%) uses candles for lighting. In addition, the majority of households relies on wood for cooking (45,10%) as compared to approximately 40,20% that relies on electricity.

Table 12.11: Sources of Energy (Stat SA, 2016)

Energy Source	Cooking	Heating	Lighting
Electricity	40,20%	32%	48,50%
Gas	3,80%	2%	0,40%
Paraffin	3,70%	1,80%	0,80%
Solar	0%	0,10%	1,30%
Candles	0%	0%	48,30%
Wood	45,10%	48,50%	0%
Coal	3,50%	5,70%	0%
Animal Dung	3,40%	4,30%	0%
Other	0,10%	0,10%	0%

None	0,20%	5,50%	0,70%
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Table 12.12: Level of education (Stat SA, 2016)

Group	Percentage
No Schooling	2,60%
Some Primary	49,10%
Completed Primary	6,80%
Some Secondary	30,10%
Completed Secondary	9%
Higher Education	0,60%
Not Applicable	1,90%

Table 12.13: Employment Status (Stat SA, 2016)

Employment Status	Number
Employed	5818
Unemployed	3506
Discouraged Work Seeker	2175
Not Economically Active	8847

Table 12.14: Average Household Income (Stat SA, 2016)

Income	Percentage
None income	11,60%
R1 - R4,800	3,60%
R4,801 - R9,600	10,10%
R9,601 - R19,600	20,80%
R19,601 - R38,200	25%
R38,201 - R76,4000	14%

R76,401 - R153,800	7,60%
R153,801 - R307,600	4,10%
R307,601 - R614,400	2,50%
R614,001 - R1,228,800	0,30%
R1,228,801 - R2,457,600	0,30%
R2,457,601+	0,10%

12.11.4 Potential Impact

Possible impacts on the socio-economic environment during the project life-cycle include;

- Change in demographics due to the influx of employment seekers;
- The influx of people seeking employment and associated impacts
- Nuisance from dust and noise;
- Consideration of local labourers and suppliers in the area – stimulation of the local economy (positive impact);
- Transfer of skills (positive impact);

12.11.5 Triggered Specialist Study/Further investigation

The socio-economic impact will be further investigated in an EIA phase and also will be addressed in an EMPr.

13. PUBLIC PARTICIPATION

13.1 Background

Public participation is part of the EIA process which is governed under the principles of NEMA as well the EIA regulations. It is defined as the process by which an organization consults with all interested or affected parties (I&APs) which include organizations, government entities, community, NGOs, etc., before making a decision. It is a two-way communication and collaborative problem solving with the goal of achieving better and more acceptable decisions. Public Participation Process provides all stakeholders including the community with a platform to raise their concerns before the Competent Authority can make a final decision about the environmental authorization. This prevents and minimizes disputes before they become unsolvable.

Chapter 6 of the EIA regulations emphasize that the information related to the proposed project must be made available to I&APs, prior to a final decision. Therefore, this process will allow I&APs to have access to the information relating to the proposed development. The public participation process (PPP) for the proposed construction was conducted according to Chapter 6 of the December 2014 EIA regulations

13.2 Objectives of Public Participation

- To inform and involve the community and stakeholders about the proposed development.
- To identify and address the community and stakeholder's concerns regarding this development.
- To provide opportunities for the community, relevant government departments, farmers, political parties and other stakeholders to raise their concerns, suggest solutions and identify priorities.

13.3 Notification of the Interested and Affected Parties (I&APs)

Section 41 of Chapter 6 of the EIA regulations have listed the following options, to be used when notifying the interested and affected parties (I&APs):

Table 13.1: Public Participation Processes

<i>All the Interested and Affected parties were notified of the application by-</i>		
Fixing a notice board at the place conspicuous to and accessible by the public at the boundary, on the fence, or along the corridor of any alternative sites.	YES	NO
Any alternative site also mentioned in the application	YES	NO
<i>Has a written notice been given to-</i>		
Landowner or person in control if the applicant is not in control of the land	YES	NO
The municipal councillor of the Ward in which the site and alternative site of the proposed activity.	YES	NO
The municipality which has jurisdiction in the area and other organs of state	YES	NO
<i>Placing an advertisement in-</i>		
One local newspaper	YES	NO
Any official Gazette that is published specifically for providing public notice of applications	YES	NO

One* provincial newspaper, any official Gazette that is published with the purpose of providing public notice of applications.	YES	NO
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13.4 Comments from the Registered Interested and Affected Parties (I&APs)

Section 43 of Chapter 6 indicates that all interested and affected parties are entitled to comment in writing on all reports produced by the applicant during the EIA process. This will bring the concerns raised to the attention of the applicant.

The Public Meeting was held on the 15th May 2019, at Jele's homestead. All comments received were acknowledged and have been addressed in Table 17 below and are indicated by means of communication. Public Meeting Pictures are attached in Appendix E.

NO	NAME OF I&AP	MEANS OF COMMUNICATION	COMMENT	RESPONSE BY EAP
1.	Mbongiseni Msibi	Public Meeting	I would like to know, of the 2909.11, how many hectares will be set aside for pastures because we have livestock.	The overall size of the proposed site boundary is approximately 3063.5127. After having subtracted approximately 149 hectares which were for water resources (Pan, dam rivers and 50 meters around them) approximately 5.4 hectares were subtracted for homesteads. Within 5.4 hectares left out for homesteads, hectares for pastures are also included
2.	Nelisiwe Ndlovu	Public Meeting	I would like to know whether the pomegranate trees will have any negative impact on our livelihood as well our natural environment, given that you said they are not indigenous to South Africa.	The Environmental Impact Assessment with the associated specialist studies such as Wetland and Terrestrial Assessment will identify the level of impact on the surrounding environment.
3.	Thokozani Ndlovu	Public Meeting	Of the 2909.11 hectares that Asiz has bought how many is he planning to cultivate.	The overall size of the proposed site boundary is approximately 3063.5127. After having subtracted approximately 149 hectares which were for water resources (Pan, dam rivers and 50 meters around them) approximately 5.4 hectares were subtracted for homesteads. Within 5.4 hectares left out for homesteads, hectares for pastures are also included

NO	NAME OF I&AP	MEANS OF COMMUNICATION	COMMENT	RESPONSE BY EAP
4.	Jabulani Jele	Public Meeting	<p>Thank you for giving us an opportunity to comment on the proposed development. previously other farmers did not offer us such an opportunity. I have heard all that has been said about the number of people that the project will uplift/hire. However, I would like to emphasize that the people that already reside on the farm should take first priority. the farmer must consider the livelihood and well-being of the farm residents and ensure that their needs are satisfied before hiring other people. secondly, we have family graveyards within the farm and also some of the people that used to stay at this farm have left, leaving behinds some graves. unfortunately, we do not know the relatives of some of the people buried on the farm. Thirdly, we would like the farmer to note that the farm residents have a lot of livestock (goats, cattle and horses) and we hope that the development will not have a negative impact on our livestock.</p> <p>We want the farmer to build better roads, provide us with clean water and he should build new houses for the Jele, Ndlovu and Msibi families.</p> <p>If Saisy Farming can attend to our requests and needs, we will not have a problem with this development</p>	<p>With regards to the issue of graves, a Heritage Impact Specialist will be appointed and will provide further clarity on such issues. Nonetheless, the applicant has emphasized that no graves will be touched or removed. A Heritage Impact Assessment study will provide recommendations on how to protect graves.</p> <p>With regards to service delivery, the matter will be further forwarded to the developer.</p>

NO	NAME OF I&AP	MEANS OF COMMUNICATION	COMMENT
5.	Ntombifuthi Jele	Public Meeting	<p>One of the challenges that this community is faced with is the lack of education. many individuals have studied up to matric but have not been able to further their studies due to financial constraints. Could Sady Farming kindly create some learnerships opportunities for the local people in his farm/business</p> <p>The EAP acknowledged the comment and will further communicate the raise issues with the applicant.</p>

Table 13.2: Comments received from a Public Meeting

14. ENVIRONMENTAL ISSUES

This section seeks to provide an overview of environmental issues to be further investigated or prioritized during and EIA phase and methodology to be used when assessing those impact. This allows for a more efficient and focused impact assessment in the EIA phase, where the analysis is largely limited to significant issues and reasonable alternatives.

14.1 Approach

The environmental issues associated with the proposed development were identified by making reference to the following;

- Activities associated with the project life cycle
- Activities relating to soil preparation
- Nature and profile of the receiving environment and potential sensitive environmental features and attributes (see Section 11), which included a desktop evaluation (via literature review, specialist input, GIS, topographical maps and aerial photography) and site investigations;
- Direct and Indirect impact related to the proposed development
- Input from Public Participation
- Legal and Policy Context

Not only does section 10 provide a detailed description of the receiving environment, but the section also outlines the possible impact associated with the proposed activity. The significant environmental issues were distilled from this information and are summarised in Table 18. Cumulative impacts are briefly explained in Section 14.

14.2 Mitigation Measures

The EIA report will provide a detailed analysis of the impact and their significance to the receiving environment, using the above methodology as well as the input from the project team specialists' studies, comments from Interested and Affected Parties.

Suitable and practical mitigation measure will be developed to minimize the impact of the proposed activity on the receiving environment. The mitigation measures will seek to achieve the following;

- Initial efforts will strive to prevent the occurrence of the impact

- If the above is not achievable, mitigation will include measures that reduce or minimize the significance of the impact to an acceptable level;
- Remediation and rehabilitation will take place if measures cannot suitably prevent or reduce the impacts, or to address the residual impacts; and
- As a last measure, compensation will be employed as a form of mitigating the impacts associated with a project.

The mitigation measure will be included in the EMPr, which will form part of the EIA report. Together with the Environmental Authorization the EMPr is binding on the Applicant, all contractors and sub-contractors and visitors to the site.

Table 14.1: Direct and Indirect Impacts

Environmental factors	Potential issues and impacts	Further investigation/ EIA Provisions
Prior to Establishment (Soil Preparation Phase)		
Indigenous Vegetation	<ul style="list-style-type: none"> • several hectares of indigenous plant species will be removed. • Loss of habitat 	<ul style="list-style-type: none"> • Ecological impact assessment • EIR and EMPr
Invasive species	<ul style="list-style-type: none"> • Increase in weeds and pest due to cleared vegetation 	<ul style="list-style-type: none"> • EIR and EMPr
Fauna	<ul style="list-style-type: none"> • Habitat fragmentation • Disruption of the food web/food chain. • Loss of faunal species of conservation significance. • Human-wildlife conflict (Hunting, the killing of snakes, birds feeding on the fruits, etc) 	<ul style="list-style-type: none"> • Ecological impact assessment • EIR and EMPr.
Surface Water	<ul style="list-style-type: none"> • Wetland infilling • Fertilizes could pollute the nearby watercourses and cause algae to bloom and kill aquatic life • Increase in sediments due to the soil erosion from the farm. 	<ul style="list-style-type: none"> • EIR and EMPr • Wetland impact assessment

	<ul style="list-style-type: none"> • Destruction of wetlands and their associated functions 	
Soil	<ul style="list-style-type: none"> • Depletion of soil nutrients 	<ul style="list-style-type: none"> • RIR and EMPr
Environmental factors	Potential issues and impacts	Further investigation/EIA Provisions
Prior to Establishment (Soil Preparation Phase)		
Bio-Physical Impacts		
Surface Water	<ul style="list-style-type: none"> • Spillage of harmful substances on nearby water sources (pan, dam, and rivers) 	<ul style="list-style-type: none"> • EIR and EMPr
Underground water	<ul style="list-style-type: none"> • Leaching of fertilizers to groundwater • Accidental oil spills from tractors could contaminate groundwater 	<ul style="list-style-type: none"> • EIR and EMPr
Soil	<ul style="list-style-type: none"> • Soil erosion as a result of exposure • Modification of soil form, structure • Disturbance of soil and land use (soil compaction) • Physical and chemical degradation of the soils by construction vehicles (spills) 	<ul style="list-style-type: none"> • EIR and EMPr
Noise Pollution	<ul style="list-style-type: none"> • Noise generated by tractors will affect birdlife and other fauna 	<ul style="list-style-type: none"> • EIR and EMPr
Air quality	<ul style="list-style-type: none"> • Dust will be generated 	<ul style="list-style-type: none"> • EIR and EMPr
Visual impact	<ul style="list-style-type: none"> • Potential visual impacts on residents of farmstead and motorist in close proximity due to dust 	<ul style="list-style-type: none"> • EIR and EMPr
Carbon footprint	<ul style="list-style-type: none"> • Emission from tractors 	<ul style="list-style-type: none"> • EIR and EMPr
Socio-economic aspects		
Livelihoods	<ul style="list-style-type: none"> • Reduction and fragmentation of rangeland for livestock 	<ul style="list-style-type: none"> • EIR and EMPr

Environmental factors	Potential issues and impacts	Further investigation/EIA Provisions
Phase Prior to Establishment (Soil Preparation Phase)		
Historical and cultural features		
Heritage and cultural features	<ul style="list-style-type: none"> • There may be grave on the site and other important heritage resources • Removal or destruction of archaeological and/or paleontological sites • Removal or destruction of buildings, structures, places, and equipment of cultural importance 	<ul style="list-style-type: none"> • Heritage impact assessment • EIR and EMPr
Conflict	<ul style="list-style-type: none"> • The conflict could arise as a result of livestock (e.g. goat) damaging or eating plant trees 	<ul style="list-style-type: none"> • EIR and EMPr
Planting and Harvesting Phase		
Socio-Economic Impacts	<ul style="list-style-type: none"> • Local communities will receive employment opportunities • Skills development 	N/A
General waste management	<ul style="list-style-type: none"> • General waste will be generated from domestic activities and Mismanagement of waste could lead to negative visual and environmental impacts. 	<ul style="list-style-type: none"> • EIR and EMPr
Air quality	<ul style="list-style-type: none"> • Trees help to remove (sequestering) CO₂ (Carbon dioxide) from the atmosphere, thus improving the air quality with the areas 	<ul style="list-style-type: none"> • N/A
Visual impact	<ul style="list-style-type: none"> • Potential visual impacts on residents of farmstead and motorist in close proximity due to dust 	<ul style="list-style-type: none"> • EIR and EMPr

Surface Water	<ul style="list-style-type: none"> • Spraying of fertilizers could potentially reach the nearby water sources 	<ul style="list-style-type: none"> • Wetland Assessment • EIR and EMPr
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15. CUMULATIVE IMPACTS

Cumulative impacts associated with the proposed development include:

15.1 Biodiversity

Continuous agricultural expansion on the local area will have a significant cumulative impact on populations of different flora and fauna species. The transformation of natural sites which are identified to meet biodiversity patterns and process thresholds will disintegrate the network of these natural habitats.

15.2 Impact on farms residence lifestyle

The reduced size of grazing lands could in a long run affect the well-being/lifestyle of farms residence, considering the fact livestock play an important role within African cultures. In addition, with the reduced size of grazing lands, and possible depletion of grass within the allocated hectares, they might be forced to look for pastures in other areas which may be far away from their households, this could mean possibly having to hire someone to look after their livestock.

15.3 Regional Economic Development

With more people getting hired and subsequently improving the economic development with the regions.

16. Environmental Impact Assessment Methodology

Each impact identified is assessed in terms of probability (Likelihood of occurring), scale (spatial scale), magnitude (severity) and duration (temporal scale). To effectively implement the adopted scientific approach in determining the significance of the environmental impact, a numerical value was linked to each rating scale.

The following criteria will be applied to the impact assessment for the EIA:

Occurrence

- ✚ Probability- The probability of the impact describes the likelihood of the impact actually occurring.
- ✚ Impact Duration- the Duration of the impact describes the period of time during which an environmental system or component is changed by the impact.

Severity

- ✚ Magnitude –refers to the ‘Degree of Disturbance’ to biophysical systems and components expresses the change in the health, functioning and/or role of the system or component as a result of an activity
- ✚ Scale/extent - The Extent of the impact generally expresses the spatial influence of the effects produced by a disturbance to an environmental system or component

The following ranking scales were used:

<i>Probability: =P</i>	<i>Duration: =D</i>
5 – Definite (More than 80 % chance of occurrence)	5 – Permanent- The only class of impact that will be non-transitory (Indefinite)
4 – Probable (Between 60-80% chance of occurrence)	4 - Long-term-: The impact and its effects will continue or last for the entire operational life of the development (15- 50years)
3 – Possible (Between 40-60% chance of occurrence)	3 - Medium-term-: The impact and its effects will continue or last for some time after the construction phase (5-15 years)
2 – Fairly Unlikely (Between 20-40% chance of occurrence)	2 – Medium-short- The impact and its effects will continue or last for the period of a relatively long construction period and/or limited recovery time after this construction period (2-5 years)
1 – Unlikely (Less than 20% chance of occurrence)	1 – Short Term- Likely to disappear with mitigation measures or through natural processes span shorter than construction phase (0-2 years)

<i>Scale: =S</i>	<i>Magnitude: =M</i>
5 – International (beyond 200km)	10 - High
4 – Regional (50-200km radius)	8 – Medium High
3 – Local (2-50km radius)	6 – Medium
2 – Surrounding Area (within 2km)	4 – Medium Low
1 – Site (within100m)	2 – Low

Status of Impact

+ Positive / -Negative or 0-Neutral

The overall impact significance score/points (**SP**) for each identified impact is calculated by multiplying magnitude, duration, and scale by the probability of all this happening

The range of possible significance scores are classified into seven rating classes as shown in Table 1 below.

$$\text{SP} = (\text{Magnitude} + \text{Duration} + \text{Scale}) \times \text{Probability}$$

The impacts status can either be positive, negative or neutral as depicted in table 1.1

Table 15.1 Impact significance Ratings

Significance	Environmental Significance Points	Colour Code
High (+)	Greater than (>) 60	H
Medium (+)	Greater than 30(>) less the 60(<)	M
Low (+)	Less than (<)30	L
Neutral	0	N
Low (-)	Greater than (>) -30	L
Medium (-)	-30 to -60	M
High (-)	< -60 (max 100)	H

17. PLAN OF STUDY

In accordance with Appendix 2 of GN No.326 (7 April 2017), a plan of study has been drafted, to outline an approach within which the EIA phase of the proposed development will be undertaken.

The main aim of the scoping report is to qualitatively identify and predict environmental issues which need to be prioritized or considered during the EIA phase. During an EIA phase, an in-

depth quantitative impact assessment is carried, with input from specialist studies and through the implementation of the impact assessment methodology as outlined in section 16 above. Appropriate mitigation measures will be identified to manage (i.e. prevent, reduce, rehabilitate and/or compensate) the environmental impacts, and will be incorporated into an EMPr.

The environmental issues which will be further investigated in the EIA phase are listed in table 18 above.

17.1 Specialist studies

The required specialist studies triggered by the findings of the Scoping process, aimed at addressing the key issues and compliance with legal obligations, include:

- Wetland Impact Assessment
- Terrestrial Ecological Impact Assessment
- Heritage Impact Assessment
- Agricultural Feasibility Study

Prior to any work, both general and specific, the Terms of reference were determined for each specialist study. In determining general Terms of reference for specialist studies, the following guideline was used.

- Guideline for determining the scope of specialist involvement in EIA processes (Münster, 2005)

The subsequent guidelines were also employed in determining the specific terms of reference for respective specialist studies (where appropriate);

- Guideline for involving biodiversity specialists in EIA processes (Brownlie, 2005);
- Guideline for involving heritage specialists in EIA processes (Winter & Baumann, 2005);

In addition to the above guidelines, the relevant specialists need to satisfy specific requirements stipulated by the following key environmental authorities:

- Economic Development Tourism and Environmental Affairs;
- Department of Water and Sanitation;
- Amafa;
- Department of Agriculture and Rural Development (DARD); and
- DAFF

For the incorporation of the findings of the specialist studies into the EIA report, the following guideline will be used:

- Guideline for the review of specialist input in EIA processes (Keatimilwe & Ashton, 2005).

Key considerations will include:

- Ensuring that the specialists have adequately addressed IAPs' issues and specific requirements prescribed by environmental authorities;
- Ensuring that the specialists' input is relevant, appropriate and unambiguous; and
- Verifying that information regarding the receiving ecological, social and economic environment has been accurately reflected and considered.

17.1.1 Terms of Reference – General

The following general Terms of Reference apply to all the EIA specialist studies to be undertaken for the proposed project:

- Address all triggers for the specialist studies contained in the subsequent specific Terms of Reference.
- Address issues raised by IAPs, as contained in the Comments and Response Report, and conduct an assessment of all potentially significant impacts. Additional issues that have not been identified during Scoping should also be highlighted to the EAP for further investigations.
- Ensure that the requirements of the environmental authorities that have specific jurisdiction over the various disciplines and environmental features are satisfied.
- Approach to include desktop study and site visits, as deemed necessary, to understand the affected environment and to adequately investigate and evaluate salient issues. Indigenous knowledge (i.e. targeted consultation) should also be regarded as a potential information resource.
- Assess the impacts (direct, indirect and cumulative) in terms of their significance (using suitable evaluation criteria) and suggest suitable mitigation measures. In accordance with the mitigation hierarchy, negative impacts should be avoided, minimized, rehabilitated (or reinstated) or compensated for (i.e. offsets), whereas positive impacts should be enhanced. A risk-averse and cautious approach should be adopted under conditions of uncertainty.
- Consider time boundaries, including short to long-term implications of impacts for project lifecycle (i.e. pre-construction, construction, operation and decommissioning).
- Consider spatial boundaries, including:

- (a) The broad context of the proposed project (i.e. beyond the boundaries of the specific site);
 - (b) Off-site impacts; and
 - (c) Local, regional, national or global context.
- The provision of a statement of impact significance for each issue, which specifies whether or not a pre-determined threshold of significance (i.e. changes in effects to the environment which would change a significance rating) has been exceeded, and whether or not the impact presents a potentially fatal flaw or not. This statement of significance should be provided for anticipated project impacts both before and after the application of impact management actions.
 - Recommend a monitoring programme to implement mitigation measures and measure performance. List indicators to be used during monitoring.
 - Appraisal of alternatives (including the No-Go option) by identifying the BPEO with suitable justification.
 - Advise on the need for additional specialists to investigate specific components and the scope and extent of the information required from such studies.
 - Engage with other specialists whose studies may have bearing on your specific investigation.
 - Present findings and participate in public meetings, as necessary.
 - Information provided to the EAP needs to be signed off.
 - Review and sign off on the EIA report prior to submission to DEA to ensure that specialist information has been interpreted and integrated correctly into the report.
 - Sign a declaration stating independence.
 - The appointed specialists must take into account the policy framework and legislation relevant to their particular studies.
 - All specialist reports must adhere to Appendix 6 of GN No. 326 (7 April 2017).

17.1.2 Terms of Reference – Specific

Wetland Impact Assessment

17.1.2 (a) Summary of Key Issues & Triggers Identified During Scoping

Impacts posed by the project development to surface water, in terms of:

- Soil preparation prior to planting
- Planting of trees on wetlands; and

17.1.2(b) Approach

- Undertake desktop study (literature review, topographical maps, and aerial photographs) and baseline aquatic survey and describe affected aquatic environments/watercourses within the project footprint.
- Determine the ecological status of the receiving aquatic environment, including the identification of endangered or protected species.
- Delineate riparian habitat and all wetlands in accordance with the guideline: *A practical field procedure for identification and delineation of wetlands and riparian areas* (DWAF, 2005) (or any prevailing guidelines prescribed by DWS). This includes assessing terrain, soil form, soil wetness, and vegetation unit indicators to delineate permanent, seasonal and temporary zones of the wetlands. Allocate conservation buffers from the outer edge of the temporary zones of the wetlands (provincial-specific).
- Provide a concise description of the importance of the affected aquatic environments/watercourses in terms of pattern and process, ecosystem goods and services, as appropriate.
- Assess the impacts of the proposed project on aquatic environments/watercourses.
- Provide suitable mitigation measures to protect the aquatic ecosystems during project life-cycle.

Nominated Specialist	
Organization	
Name	
Qualifications	
Years of Experience	
Affiliation (if applicable)	

17.1.3 Terrestrial Ecological Impact Assessment

17.1.3 (a) Summary of Key Issues & Triggers Identified During Scoping

- The potential loss of significant flora and fauna species.
- Impacts to sensitive terrestrial ecological features.
- Management actions for controlling exotic vegetation.

17.1.3 (b) Approach

- Undertake baseline survey and describe the affected environment within the project footprint from a biodiversity perspective.
- Take into consideration the provincial conservation goals and targets.
- Assess the current ecological status and the conservation priority within the project footprint and adjacent area (as deemed necessary). Provide a concise description of the importance of the affected area to biodiversity in terms of pattern and process, ecosystem goods and services, as appropriate.
- Undertake sensitivity study to identify protected and conservation-worthy species. Prepare a biodiversity sensitivity map with the use of GIS, based on the findings of the study.
- Assess impacts on fauna and flora, associated with the project. Consider cause-effect impact pathways for assessing impacts on biodiversity-related to the project.
- Identify potential fatal flaws associated with the project and its alternatives from a biodiversity perspective.
- Comply with specific requirements and guidelines of EDTEA
- Consider the Amajuba District Biodiversity Plan (2014) and other relevant policies, strategies, plans, and programmes.

Nominated Specialist	
Organization	
Name	
Qualifications	
Years of Experience	
Affiliation (if applicable)	

17.1.4 Heritage Impact Assessment

17.1.4 (a) Summary of Key Issues & Triggers Identified During Scoping

The potential occurrence of heritage resources, graves, and structures older than 60years within the project footprint.

17.1.4 9 (b) Approach

- Undertake a Heritage Impact Assessment in accordance with the South African Heritage Resources Act (No. 25 of 1999).

- The identification and mapping of all heritage resources in the area affected, as defined in Section 2 of the National Heritage Resources Act, 1999, including archaeological and palaeontological sites on or close (within 100 m) of the proposed developments.
- Undertake a desktop palaeontological assessment (evaluate a site in terms of SAHRIS).
- The assessment of the significance of such resources in terms of the heritage assessment criteria as set out in the regulations.
- An assessment of the impact of development on such heritage resources.
- An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.
- Prepare a heritage sensitivity map (GIS-based), based on the findings of the study.
- Identify heritage resources to be monitored.
- Comply with specific requirements and guidelines of KZNHRA.

Nominated Specialist	
Organization	
Name	
Qualifications	
Years of Experience	
Affiliation (if applicable)	

17.1.5 Agricultural Feasibility Study

17.1.5 (a) Approach

- Determine agricultural potential in the project footprint.
- Determine the impacts of a project from an agricultural perspective.
- Suggest suitable mitigation measures to address the identified impacts.

Nominated Specialist	
Organization	
Name	
Qualifications	
Years of Experience	

Affiliation (if applicable)	
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17.2 Public Participation-EIA Phase

17.2.1 Updating of IAP Database

The IAP database/spreadsheet will be updated and reviewed as and when necessary during the execution of the EIA.

17.3 Review of Draft EIA Report

The draft scoping report will be circulated for 30 days and copies of the document will be lodged for public review at the following venues:

Copy	Location	Address	Tel No.
1			
2			

Copies of the Draft EIA Report will be provided to the regulatory and commenting authorities listed in Appendix D

All parties on the I&Ap's spreadsheet will be given an opportunity to comment on the draft report in the following

- An email containing draft report will be forwarded to all stakeholders, except to those who have clearly indicated that they only receive hard copies.
- All parties on the IAPs database will be notified via email, fax or post of the opportunity to review the Draft EIA Report at the abovementioned locations.

17.4 Comments and Responses Report

A Comments and Responses Report will be compiled and included in the EIA Report, which will record the date that issues were raised, a summary of each issue, and the response of the team to address the issue.

In addition, any unattended comments from the Scoping Phase or where the status of the previous responses has changed will also be addressed in the Comments and Responses Report for the EIA phase.

17.5 Notification of DEA Decision

Within 10 days of receipt of the final decision on the application. All stakeholders will be notified via an email. The notification will include the appeal procedure to the decision.

17.5 EIA Report

The report will provide enough evidence or information for EDTEA to make a final decision. At minimum, the report will contain the following information which is in accordance with Appendix 3 of GN No. 326 (7 April 2017).

The following critical components of the EIA Report are highlighted;

- A description of the policy and legislative context;
- A detailed description of the proposed development (full scope of activities);
- A detailed description of the proposed development site, which will include a plan that locates the proposed activities applied for as well as the associated structures and infrastructure;
- A description of the environment that may be affected by the activity and the manner in which physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed development;
- The methodology of the stakeholder engagement process;
- The Comments and Responses Report and IAPs Database will be provided as an appendix to the EIA Report;
- A description of the need and desirability of the proposed development and the identified potential alternatives to the proposed activity;
- A summary of the methodology used in determining the significance of potential impacts;
- A description and comparative assessment of the project alternatives;
- A summary of the findings of the specialist studies;
- A detailed assessment of all identified potential impacts;
- A list of the assumptions, uncertainties, and gaps in knowledge;
- An environmental impact statement;
- Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorization;
- A reasoned opinion as to whether the proposed activity should or should not be authorized, and if the opinion is that it should be authorized, any conditions that should be made in respect of that authorization;
- An opinion by the consultant as to whether the development is suitable for approval within the proposed site;

- An EMPr that complies with Appendix 4 of GN No. 326 (7 April 2017);
- Copies of all specialist reports appended to the EIA report; and
- Any further information that will assist in decision making by the authorities.

17.6 Authority Consultation

Once the Scoping report and the Plan of Study have been approved by EDTEA the EIA will commence. If relevant, the necessary revisions will be made to the aforementioned documents if requested by this Department.

In addition, copies of the Draft EIA Report will be provided to the following key regulatory and commenting authorities.

- EMadlangeni Local Municipality
- Department of Water and Sanitation
- Department of Economic Development, Tourism, and Environmental Affairs
- Department of Agriculture, Land Reform and Rural Development (DALRRD)
- Amafa /KZN Heritage
- Amajuba District Municipality

The final EIA report will be submitted to EDTEA. Any requested amendments will be discussed with the Department to ensure that their queries are adequately and timeously attended to.

For the remainder of the Scoping process and EIA the interaction with EDTEA will be as follows:

- Submission of the Final Scoping Report;
- Address comments on Scoping Report;
- Arrange authorities meeting during the EIA stage;
- Submit EIA Report;
- Address comments on EIA Report; and
- Obtain a decision.

17.7 Time Frames

The table to follow presents the proposed timeframes for the EIA process. Note that these dates are subject to change.

Table 17.2 EIA Timeframes (dates may change during the course of the EIA)

Scoping Phase	Start	Finish
Submit Draft Scoping Report	29/07/2019	29/07/2019
Submit the Application Form		
Review of the Draft Scoping Report by authorities & IAPs	29/07/2019	04/09/2019
EDTEA Review and Decision	09/09/2019	30/10/2019
Review of Draft EIA Report by authorities & IAPs	09/11/2019	14/12/2019
Submit Final EIA Report & EMPr to EDTEA	07/01/2020	07/01/2020
EDTEA Review and Decision	08/01/2020	28/05/2020
IAP Notification Period	29/05/2020	30/05/2020

18. CONCLUSION

The scope of an environmental assessment is defined by the range of issues and alternatives it considers, the nature of the receiving environment, and the approach towards the assessment. Key outcomes of the Scoping phase for the proposed Planting of Pomegranate trees are as follows:

- Stakeholders were effectively identified and were afforded adequate opportunity to participate in the scoping process;
- Alternatives for achieving the objectives of the proposed activity were duly considered.
- Significant issues pertaining specifically to the pre-construction (soil preparation phase), construction and operational (Planting and Harvesting) phases of the project were identified;
- Sensitive elements of the environment to be affected by the project were identified;
- A Plan of Study was developed to explain the approach to executing the EIA phase, which also includes the Terms of Reference for the identified specialist studies; and
- The scoping exercise set the priorities for the ensuing EIA phase.
- No fatal flaws were identified in terms of the proposed activities and the receiving environment that would prevent the environmental assessment from proceeding beyond the Scoping phase. It is the opinion of the EIA team that Scoping was executed in an

objective manner and that the process and report conform to the requirements of Regulation 21 and Appendix 2 of GN No. 326 (7 April 2017), respectively. It is also believed that the Plan of Study for EIA is comprehensive and will be adequate to address the significant issues identified during Scoping and to ultimately allow for informed decision-making.

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