Clearing of natural vegetation for cultivation on Doornrivier, Portion 47 of Farm 369, Worcester

Draft Environmental Scoping Report

Draft Environmental Scoping Report

DEA&DP Ref. No. 16/3/3/2/B2/32/1005/18
Date: February 2018

The clearing of natural vegetation for cultivation on Doornrivier, Portion 47 of Farm 369, Worcester

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DEA&DP Ref: 16/3/3/2/B2/32/1005/18
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**GLOSSARY**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>BBBEE</td>
<td>Broad Based Black Economic Empowerment</td>
</tr>
<tr>
<td>CAPE</td>
<td>Cape Action for People and the Environment</td>
</tr>
<tr>
<td>CARA</td>
<td>Conservation of Agricultural Resources Act</td>
</tr>
<tr>
<td>DEA</td>
<td>Department of Environmental Affairs</td>
</tr>
<tr>
<td>DEA&amp;DP</td>
<td>Department of Environmental Affairs and Development Planning</td>
</tr>
<tr>
<td>EIA</td>
<td>Environmental Impact Assessment</td>
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<tr>
<td>EIR</td>
<td>Environmental Impact Report</td>
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<tr>
<td>HWC</td>
<td>Heritage Western Cape</td>
</tr>
<tr>
<td>I&amp;APs</td>
<td>Interested and Affected Parties</td>
</tr>
<tr>
<td>NEMA</td>
<td>National Environmental Management Act</td>
</tr>
<tr>
<td>NEMBA</td>
<td>National Environmental Management: Biodiversity Act</td>
</tr>
<tr>
<td>NHRA</td>
<td>National Heritage Resources Act</td>
</tr>
<tr>
<td>NSBA</td>
<td>National Spatial Biodiversity Assessment</td>
</tr>
<tr>
<td>NWA</td>
<td>National Water Act</td>
</tr>
<tr>
<td>SAHRA</td>
<td>South African Heritage Resources Agency</td>
</tr>
<tr>
<td>SR</td>
<td>Scoping Report</td>
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</tbody>
</table>

**Project details**

**Title:** Clearing of natural vegetation for agricultural practises on Portion 47 of Farm 369

**Process:** Full Scoping/EIA Process

**Report:** Draft Scoping Report, including Plan of Study for EIA

**Report date:** February 2018

**Applicant:** A.J. van Zyl

**Appointed EAP:** BolandEnviro Consultants

**DEA&DP Ref:** 16/3/3/2/B2/32/1005/18
Clearing of natural vegetation for cultivation on Doornrivier, Portion 47 of Farm 369, Worcester

1. INTRODUCTION
AJ van Zyl hereafter referred to as the Applicant, proposes to develop approximately 75 ha of land for cultivation on farm Doornrivier, Farm No. 369, Portion 47, Worcester, hereafter referred to as the Property. It is the Applicants intention to cultivate pecan nut trees, olive trees and fig trees.

The entire property is 199.8 ha in extent of which about 120 ha is currently developed, including vineyards, farm dams, farm homestead and workers housing. The target development area is the only remaining area available on the property for agricultural expansion. No new facilities will be constructed.

The proposed development is located 15 km from Worcester (Figure 1).

Figure 1: Location of Doornrivier, Portion 47 of Farm 47, Worcester and surrounding (sourced from 1:250 000 Government topo-cadastral map 3319).

The Environmental Impact Assessment (EIA) Regulations 2014 as amended, promulgated in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), specifies activities that require authorization from the relevant authorities, based on the findings of an environmental assessment, before such activities commence (Government Notice (GN) No. R. 327 and 325 of 2017 as amended). The proposed Agricultural development constitutes activities listed in Schedules 1 and 2 of the EIA Regulations 2014. A full Scoping and EIA Process is therefore required before environmental authorization can be considered.
Clearing of natural vegetation for cultivation on Doornrivier, Portion 47 of Farm 369, Worcester

1.1 LEGISLATION AND ACTIVITIES APPLIED FOR

The legislation relevant to this study is briefly outlined below. These environmental requirements are not intended to be definitive or exhaustive but serve to highlight key environmental legislation and responsibilities only.

1.1.1 The Constitution of South Africa

The Constitution of the Republic of South Africa states that everyone has a right:

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


The National Environmental Management Act (Act 107 of 1998) (NEMA) makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorization from the relevant authorities based on the findings of an environmental assessment. NEMA is a national act, which is enforced by the Department of Environmental Affairs (DEA). These powers are delegated in the Western Cape to the Department of Environmental Affairs and Development Planning (DEA&DP).

According to NEMA EIA Regulations 2014, authorisation is required for the following for the proposed development of Farm Doornrivier, 47/369, Worcester.

Table 1: Applicable Listing Notices

<table>
<thead>
<tr>
<th>Activity No(s):</th>
<th>Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 1 (GN No. R327 of 7 April 2017 as amended.)</th>
<th>Describe the portion of the proposed project to which the applicable listed activity relates.</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>The clearance of an area of 1 ha or more, but less than 20 hectares of indigenous vegetation for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan</td>
<td>All together ±75 ha of vegetation would be cleared for cultivation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity No(s):</th>
<th>Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 3 (GN No. R. 985)</th>
<th>Describe the portion of the proposed project to which the applicable listed activity relates.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Applicable</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity No(s):</th>
<th>Provide the relevant Scoping and EIR Activity(ies) as set out in Listing Notice 2 (GN No. R325 of 7 April 2017 as amended)</th>
<th>Describe the portion of the proposed project to which the applicable listed activity relates.</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>The physical alteration of virgin soil to agriculture, or afforestation for the purposes of commercial tree, timber or The proposed development entails the clearing of ±75 ha of vegetation for cultivation.</td>
<td></td>
</tr>
</tbody>
</table>
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| 15 | The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan | An area of ±75 ha is proposed for clearing of natural vegetation. The cleared areas will be used for agricultural purposes (cultivation of pecan nut trees, olive trees and fig trees). |

1.1.3 Conservation of Agricultural Resources Act
The purpose of the Conservation of Agricultural Resources Act (CARA) (Act 43 of 1983) is to provide for control over the utilization of the natural agricultural resources in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants.

1.1.4 National Environmental Management: Biodiversity Act
The National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004) (NEMBA) is part of a suite of legislation falling under NEMA, which includes the Protected Areas Act, the Air Quality Bill and the Coastal Zone Bill.

Chapter 4 of NEMBA deals with threatened and protected ecosystems and species and related threatened processes and restricted activities. The need to protect listed ecosystems is addressed (Section 54). Section 73 deals with Duty of Care relating to invasive species, while Section 76(2) calls for development of invasive species monitoring, control and eradication plans by all organs of state in all spheres of government, as part of environmental management plans required in terms of Section 11 of NEMA.

1.1.5 National Heritage Resources Act
The protection and management of South Africa’s heritage resources are controlled by the National Heritage Resources Act (Act No. 25 of 1999). South African National Heritage Resources Agency (SAHRA) is the enforcing authority and in the Western Cape, SAHRA have, in most cases, delegated this authority to Heritage Western Cape (HWC).

In terms of Section 38 of the National Heritage Resources Act, SAHRA and/or HWC will require a Heritage Impact Assessment (HIA) where certain categories of development are proposed. Section 38(8) also makes provision for the assessment of heritage impacts as part of an EIA process and indicates that if such an assessment is found to be adequate, a separate HIA is not required.

The National Heritage Resources Act requires relevant authorities to be notified regarding this proposed development, as the following activity is relevant:
• any development or other activity which will change the character of a site exceeding 5,000 m² in extent;

1.1.6 National Water Act
The National Water Act (NWA), Act 36 of 1998 has the purpose to ensure that South Africa’s water resources are protected, used, developed, conserved, managed and controlled in ways which inter alia (b) promotes equitable access to water, (c) redress for past racial discrimination, (e) facilitates social and economic development, (g) protects aquatic and associated ecosystems and their biological diversity, (h) reduces and prevents pollution and degradation of water resources and (k) manages floods and droughts.

Chapter 4 of the NWA describes the entitlement to water use, (2) whereby a person may continue with an existing lawful water use, (3) a person may use water in terms of a general authorisation or license (4).

In terms of section 21, the water uses that are recognised for purposes of the National Water Act include the following:
(a) taking water from a water resource;
(b) storing water;
(c) impeding or diverting the flow of water in a watercourse;
(d) engaging in a stream flow reduction activity contemplated in section 36;
(e) engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1);
(f) discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;
(g) disposing of waste in a manner which may detrimentally impact on a water resource;
(h) disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process;
(i) altering the bed, banks, course or characteristics of a watercourse;
(j) removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and
(k) using water for recreational purposes.

1.1.7 Guideline Documents

There are a number of guideline documents and conservation plans that must inform the work of both the environmental practitioner and the various specialists. The principles contained in these documents will be incorporated into the various aspects of the study.
Clearing of natural vegetation for cultivation on Doornrivier, Portion 47 of Farm 369, Worcester

Here is a list of some of the DEA&DP’s EIA Guideline and Information Document Series relevant to this application:

- Guidelines for EIA Requirements
- Guidelines for Public Participation
- Guideline on Alternatives
- Guideline on Need and Desirability
- Guideline for Involving Biodiversity Specialists in EIA Processes
- Guideline for Environmental Management Plans
- DEA&DP Circular EADP 2014: One Environmental Management System

1.2 SCOPE OF THE WORK TO BE UNDERTAKEN

Boland Enviro Consultants were appointed to conduct the EIA Process and facilitate Public Participation as required in terms of NEMA. An application form to undertake a Scoping and EIA process has been submitted to the Department of Environmental Affairs and Development Planning (DEA&DP) which is the identified Competent Authority for this application.

The proposed project requires an assessment of all impacts in compliance with the EIA Regulations 2014 as amended, read with Section 24 (5) of NEMA. The scope of the study is determined with reference to the requirements of the relevant legislation and undertaken in terms of the Guideline Series on Requirements with respect to the EIA Process (various publication dates up to April 2017), issued by the DEA&DP.

The required environmental assessment process is undertaken in two phases:

- Phase 1 – Scoping Phase
- Phase 2 – EIA Phase

The environmental scoping and EIA processes are being undertaken in distinct phases, refer to Figure 2. This Report forms part of the Scoping Phase.

1.3 SCOPING PHASE

The Scoping Phase involves a description of the proposed activity, the property and the receiving environment, the identification of potential significant positive and negative impacts, the identification of opportunities and constraints, alternatives and mitigation measures which are evaluated and investigated during the EIA Phase.

A detailed Public Participation process is conducted to involve all Interested and Affected Parties (I&APs) in the EIA process and to identify any additional issues for inclusion in the assessment. All issues and concerns identified during the Scoping Phase are adequately documented in the final Scoping Report and Plan of Study for EIA submitted to the Competent Authority (DEA&DP).
1.4 EIA PHASE

All issues that are considered to be of significance will be further investigated and assessed during the EIA Phase of this project. The EIA will involve various specialist studies (Botanical Assessment) and should provide an overall assessment of the biophysical, social and economic environment affected by the proposed development. A detailed assessment will be undertaken in terms of environmental criteria and the rating of significant impacts of all alternative options identified in the scoping phase. Appropriate mitigation measures will be identified and recommended for all significant impacts. These measures will be included in an Environmental Management Programme (EMP) submitted together with the Environmental Impact Report (EIR) to the DEA&DP.

The EIA Phase will include a detailed Public Participation Process to ensure that all comments, issues and concerns raised by state departments and registered I&APs will be adequately documented and addressed in the EIA process.

Figure 2: The Scoping and EIA process.
1.5 RISKS AND ASSUMPTIONS

- The assumption is made that the information on which the report is based (baseline studies and project information, as well as existing information as provided by the Applicant) are true and correct. The baseline information provided is preliminary and may need to more detailed investigation, which will form part of the subsequent stages of the Scoping-EIA process.
- Figures related to the socio-economic aspects of the Worcester receiving community are derived from the most recent (2011) Census count.
- It is assumed that the botanical study will reveal specialised habitats that are likely to support rare or endangered animals. Should special habitats be likely to be impacted by the proposed development, a faunal specialist will be appointed to conduct a detailed faunal study of the site.

2 DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER

Boland Environmental Consultants CC (BolandEnviro) has been appointed as the independent Environmental Assessment Practitioner (EAP) by A.J. van Zyl to undertake the environmental process for the proposed farming development.

BOLAND ENVIRONMENTAL CONSULTANTS - COMPANY PROFILE

BolandEnviro CC was established in 2005, and operates from Worcester in the Western Cape, with a focus on the rural Boland, Cape Winelands and West Coast areas. Our multidisciplinary team focuses their expertise toward practical solutions to complex environmental applications. Our staff's in-depth industry expertise ensures the highest quality and technical defensibility of all services and products.

BolandEnviro has successfully applied knowledge and experience to solve various environmental challenges including housing developments, agri-industrial packing sheds, wine cellar expansion, cultivation of virgin land / clearing of natural vegetation, construction of roads, renewable energy plants, industrial developments, upgrading of facilities, chicken broiler houses etc.

Vision and mission

BolandEnviro places a strong emphasis on professional and ethical services in environmental management. As independent environmental practitioners, we are passionate about the environment and the rural communities we serve. Our job is to safeguard the environment for future generations, and we do this through open, honest assessment of the risks and impacts of proposed development activities. We strive to advice and guide our clients to ensure that the outcome of any application is not just of benefit to them, but also to the environment and society in general.

Staff and personnel

Clearing of natural vegetation for cultivation on Doornrivier, Portion 47 of Farm 369, Worcester

Env.Sci.), Charl de Villiers (BA, M. Phil Env. Man.) and Wayne Marnewil (B. Sc. Honours Environmental and Water Science). BolandEnviro also maintains working relationships with other professionally qualified specialists, and can provide a wide range of specialist services for Integrated Environmental Management.

Services

BolandEnviro combines experience and integrity, specialising in the field of environmental management. BolandEnviro offers pre-application consultations, full Scoping and Environmental Impact Assessments, Basic Environmental Assessments, Specialist Studies, Environmental Management Planning and Compliance and Control Monitoring. BolandEnviro, with its association with Informage CC, has access to qualified GIS operators using ArcGIS, networked with scanners and colour plotters and printers, for the production of high quality reports, maps and plans. A full list of the services offered by BolandEnviro is available at www.BolandEnviro.co.za.

Location and area of operation

BolandEnviro is based in Worcester, but is active throughout the Boland area. In the past we have run impact assessments and other projects in Worcester, Robertson, Rawsonville, De Doorns, Touws River, Montagu, Tulbagh, Saldanha Bay and Beaufort West. This rural focus means that BolandEnviro has an in-depth knowledge of environmental conditions in this area, and are experienced in dealing with the unique challenges typical to rural areas.

Contact details

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Skype: Boland.Enviro
Email: info@BolandEnviro.co.za
Website: www.BolandEnviro.co.za

3 PROJECT DESCRIPTION

3.1 OVERVIEW

The Applicant (A.J van Zyl) proposes to clear approximately an area of ± 75 ha for the cultivation of pecan nut, fig trees and olives on the Farm Doornrivier No. 369, Portion 47, Worcester, hereafter referred to as the Property. The entire property is 199.8 ha in extent of which about 120 ha is currently developed, including vineyards, farm dams, farm homestead and workers housing.

The development area is the only remaining area available on the property for agricultural expansion. There is an existing access road to the farm, so no additional access roads or tracks are required. Existing farm tracks will be utilized where possible however irrigation water pipes will be laid where necessary.

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The proposed development will be divided into four blocks:

A. Block 1 (red polygon) measures roughly 17 ha in size
B. Block 2 (blue polygon) measures roughly 18 ha in size
C. Block 3 (orange polygon) measures roughly 19 ha in size
D. Block 4 (green polygon) measures roughly 20 ha in size

Figure 3: Aerial image of the proposed development area and development blocks.

### 3.2 LOCATION AND SITE DESCRIPTION

The property is located adjacent the Aan De-Doorns and Overhex road, approximately 15 km north-west of Worcester in the Breede Valley Municipal Area (see Appendix A). The Property is currently undeveloped and consists entirely of Breede Alluvium Renosterveld. Features that are present on the site include, farm houses, two farm dams and existing farm tracks that traverse the Property. The vacant land in its current state is of low economic value to the Applicant.
3.3 SERVICE PROVISION

3.3.1 Water

The proposed development entails the expansion of an existing agricultural operation. The Applicant is currently applying for the clearing of approximately 75 ha indigenous vegetation for cultivation.

The property has existing water usage rights. Water allocated from the Central Breede River Water Users Association for Portion 47 of Farm 369 (57 ha @ 7450 m³/ha/year) is from the Breede River. Water allocated from the Worcester East Water Users Association for Portion 47 of Farm 369 (32 ha @ 7450 m³/ha/year) is from the Breede River and Hex River. A total amount of 106 110 m³/ha/year is also available for winter season storage in dams.

3.3.2 Power

There is an existing power supply point on the farm and power is already supplied to the property by the Municipality.

3.3.3 Solid waste

A limited amount of solid waste typical of farming operation may be produced. No form of hazardous waste or effluent will be produced on site.
Clearing of natural vegetation for cultivation on Doornrivier, Portion 47 of Farm 369, Worcester

Any solid waste that might be produced will be disposed of on site or transported to the Municipal Landfill site to the Applicants own cost.

3.3.4 Effluent
Apart from agricultural return flows (irrigation), the proposed development is not expected to produce any effluent.

3.4 INFRASTRUCTURE

3.4.1 Buildings
The proposed development does not entail the construction of any buildings on the Property.

3.4.2 Roads
Existing access and internal roads will be utilised by the proposed development. There is a main farm track along the western portion of the site and another crossing into a north-eastern direction through the site.

3.5 SITE ACCESS
The proposed development will be accessed from the Aan de Doorns road (road between Worcester and Overhex). Existing access and internal roads will be utilised by the proposed development. There is a main farm track along the western portion of the site and another crossing into a north-eastern direction through the site.

4 RECEIVING ENVIRONMENT

4.1 LAND USE
The Property is currently zoned for agricultural use (Agriculture I). The proposed development will significantly improve the agricultural potential of the Property and the surrounding area. Surrounding land use consists mainly of extensive agriculture.

4.2 LANDSCAPE, HYDROLOGY AND GEOLOGY

4.2.1 Landscape
The Property is located within an open valley, surrounded by a natural koppie NE of the site and two koppiess directly north of the site bordering the Nuy River. Approximately 30 Ha, located within the southern portion of the site, was previously brush-cut for the sowing of oats seeds for the cattle on the farm. Currently this area is in a relatively poor condition, due to the reduced vegetation cover but natural habitat remains intact and is currently recovering. A portion within the centre of the brush-cut site is currently degraded and subjected to trampling and dumping of farm rubble and old tree stumps. Low vegetation cover is evident within the brush-cut area but the soil surface is not disturbed and there is evidence of recovery within this site.

4.2.2 Hydrology
The Nuy River is located approximately 1 km north-west of the site, while another smaller tributary (also aquatic CBA) is evident 200-300m NW of the site. The Breede River is located...
Clearing of natural vegetation for cultivation on Doornrivier, Portion 47 of Farm 369, Worcester approximately 3.7 km south-west of the Property. There are no wetland areas, drainage lines, or other important ecological process areas evident on site.

Figure 4: Aerial photograph showing the property boundary (yellow) and target development area (red) in relation to CBAs and corridors in the broader context.
Clearing of natural vegetation for cultivation on Doornrivier, Portion 47 of Farm 369, Worcester

Figure 5: Extract from the WC Biodiversity Spatial Plan (2017) Map for the Breede Valley Municipality showing CBAs and ESAs in the area.

4.2.3 Geology and Soils
The geology of the Property consists of Karoo Supergroup Sediments. In the Breede River Valley, alluvial deposits are generally associated with the larger tributaries and watercourses. In places, old alluvium-filled channels which were cut at times when drainage base levels were lower than at present, are buried beneath more recent deposits.

Loam and sandy loam soil parent materials probably date back to Tertiary times, and formed by weathering of fine grained shale or phyllitic bedrock, notably from the Malmesbury, Bokkeveld, Dwyka and Enon groups. Where Table Mountain sandstone predominates in the source area the alluvium consists mainly of quartzitic sand, whereas alluvial deposits derived from Malmesbury, Bokkeveld and Karoo sedimentary rocks tend to be silty.

Renosterveld is found on fine grained substrates that are more nutrient rich. These substrates may be alluvial in origin but generally they are derived from shale, granite, silcrete or exceptionally, limestone. Alluvium may grade almost imperceptibly into terrace or pediment (concave erosion surfaces on flanks of hills) gravel, of which the pebbles and cobbles mostly consist of angular to rounded vein quartz and quartzite. East of Worcester the alluvium is gravelly. Where present, the thickness of boulder deposits tends to increase with height above the tributary. To the west of Worcester the remains of a gravel terrace, about 15 m above present river level, grades into the younger gravels of the Hex River fan which lies to the south and east of the town. These deposits mostly consist of well-rounded boulders and cobbles of weathering-resistant rocks such as sandstone and quartzite. Older gravels are locally cemented into a matrix that may be calcareous, iron-rich or siliceous. (Wooldridge, 2005).

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Figure 6: Extract from the 1:250 000 Geological Series map 3319 showing the dominant geological formation found on the Property (red polygon). Pt: dark-grey to grey-black shale, mudstone and siltstone.
4.3 CLIMATE

Worcester experiences more extremes of temperature than neighbouring Cape Town, as oceanic influences are blocked by the Du Toitskloof and Slanghoek mountain ranges to the west.

Maximum precipitation occurs in August with another slight precipitation peak in June. Mean annual precipitation (MAP) is 125–350 mm, with most of the region receiving about 300 mm. The low precipitation of this region is ascribed to the rain-shadow effect due to the high surrounding mountain ranges. Mean annual temperature (MAT) is above 16 °C. Summer temperatures are high in January and vary from 30–40 °C. Occasional north-western berg winds may intensify the heat. Winter nights might experience light frost – 7 days a year on average (Mucina & Rutherford, 2006).

Summer is generally dry with the rare late summer thunderstorm, whilst spring and autumn are shoulder seasons of pleasant temperatures ranging from an average 10 °C minimum to 25 °C maximum, with the occasional rain shower. Winters are generally very windy and often cool to cold with snow being common on the higher lying ground above 1500m. Daytime maximums range from 10 °C-17 °C, with minimums hovering at or just above freezing.

Figure 7: The mean annual rainfall for the area of the proposed development.
Clearing of natural vegetation for cultivation on Doornrivier, Portion 47 of Farm 369, Worcester

**Mean Annual Temperature**

Legend

- Farm Portions
- < 10
- 10 - 11
- 11 - 12
- 12 - 13
- 13 - 14
- 14 - 15
- 15 - 16
- 16 - 17
- 17 - 18
- 18 - 19
- 19 - 20
- 20 - 21
- 21 - 22
- > 22

Wetlands (NFESA)

- Artificial
- Estuaries
- Natural

Scale: 1:18 056
Date created: January 26, 2018

**Figure 8:** The mean annual temperature for the area of the proposed development.

**4.4 BIODIVERSITY**

**4.4.1 Flora**

According to the SA Vegetation Map (Mucina and Rutherford 2006) the target area comprises Breede Alluvium Renosterveld vegetation (Figure 9). Breede Alluvium Renosterveld is listed as a Vulnerable (VU) ecosystem, under the criterion A1 (habitat loss), in the National List of Threatened Ecosystems (DEA 2011). The more recent Western Cape Biodiversity Spatial Plan - Ecosystem Threat Status (Cape Nature 2016) (not yet gazetted) indicates that Breede Alluvium Renosterveld is currently Endangered based on significant habitat loss.

The site connects natural habitat within and adjacent to the Nuy river with larger natural areas in the south-east.

It is noteworthy to show that the area directly east of the property is mapped as Robertson Karoo (Figure 9). Robertson Karoo is Least threatened. This same area, east of the property, including the target development site on the farm itself, is locally and at a finer scale recognised as Worcester Renosterveld Karoo in the CAPE Fine-Scale Integrated Vegetation Map (Helme 2007) (Figure 10).
Clearing of natural vegetation for cultivation on Doornrivier, Portion 47 of Farm 369, Worcester

Figure 9: Extract from the National Vegetation Map (Mucina and Rutherford 2006) showing the available development area (green polygon) and original extent of vegetation types, prior to any disturbances.

Figure 10: Extract from the locally described CAPE Fine Scale Project: Integrated Vegetation Map showing the available development area (yellow polygon).
4.4.2 Fauna
The proposed development entails the clearing of an extensive area of natural habitat and may impact on localised animal species.

The target areas comprise open valleys and koppies, which are normally seen as special faunal habitat. The site does however connect natural habitat within and adjacent to the Nuy river. Large areas of natural habitat will still be available to fauna in the immediate surrounding areas.

Mammals on site that may include amongst others, Small Grey Mongoose (Galerella pulverulenta), Scrub Hare (Lepus saxatilis), Cape Porcupine (Hystrix ariicaeaustralis), Cape Grysbok (Raphicerus melanotis) and Caracal (Felis caracal). Notable reptiles may include Angulate Tortoise/Ploegskaarskilpad (Chersina angulata), Leopard Tortoise (Stigmochelys pardalis) and Parrot Beaked Padloper (Homopus areolatus).

4.5 HISTORICAL AND CULTURAL ASPECTS
There are no buildings currently located on the proposed development area and no buildings of cultural significance within the immediate surrounding area. Agriculture is standard practice within the area and therefore little impact will be caused to people’s health and wellbeing (in terms of noise, odours, visual character and sense of place) as a result of this activity.

No new buildings will be constructed on the Property. The proposed agricultural development will change the character of the Property and a NID will be submitted to Heritage Western Cape in terms of Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999).

4.6 SOCIO-ECONOMIC CHARACTERISTICS
The farm Doornrivier (Portion 47, No 369, Worcester) forms part of the Breede Valley Municipality. The Breede Valley Municipality encompasses an area of 3833 km². Worcester is the closest urban settlement to the development site (8 km), and constitutes the receiving environment.

The following figures are derived from the (2011) Census for the Worcester receiving environment. It is assumed that trends have remained reasonably constant.

According to 2011 Census data, the Worcester community consisted of 78 906 people in 2011-representing 47.29% of the total population of the Breede Valley Municipal Area.

According Census 2011, Breede Valley Local Municipality has a total population of 166 825 people, of which 63, 3% are coloured, 24, 3% are black African, 10, 7% are white, with the other population groups making up the remaining 1, 7%.
5 NEED AND DESIRABILITY

5.1 NEED
Agriculture is key to food security in many parts of the world. Making agriculture work must be a central component of policy approaches to food insecurity reduction and increasing economic growth. Increased investment in agriculture will help redress the current inequalities.

The property, Farm 369/47, Worcester, is 200 ha in extent of which 120 ha is currently developed and 80 ha undeveloped. In order to increase the economic value of this property, there is a need to improve the agricultural potential. The proposed cultivation will significantly increase the agricultural potential.

5.2 DESIRABILITY

5.2.1 Western Cape Provincial Spatial Development Framework
The proposed development is consistent with the Western Cape PSDF. The Western Cape PSDF recognizes the agricultural sector as the backbone of the province's economy, creating 11% of all jobs in the province and contributing 6% to the Western Cape province's GGP (Gross Geographic Product). The PSDF further recognizes that the province's agricultural activity provides food security for the country, supports rural livelihoods and draws income into the province. In addition, intensively cultivated agricultural land (vineyards etc.) is recognized in the PSDF as contributing to the unique character of the province.

The WC PSDF Rural Land Use Planning & Management Guideline further indicates that two of the key objectives for agriculture within the province are:
• To protect agriculture as a dominant land use in rural areas
• To improve the economic viability of farmland through intensification, diversification and value adding.

At a district level, the PSDF indicates that controlled development needs to be encouraged in the Cape Winelands District.

The proposed development entails the cultivation of on land zoned for Agriculture. The proposed development will improve the economic value and viability of the farm, and will contribute to the economic development and agricultural character of the area. The proposed development is therefore aligned with the objectives of the PSDF and does not compromise any of the objectives of the PSDF.

5.2.2 Breede Valley Integrated Development Plan (2017-2022)
The site for the proposed development falls within the Breede Valley Municipality area, and the current Breede Valley IDP (2017-2022) therefore relevant.

The Breede Valley Municipality, through the Built Environment Support Programme (BESP) of the Department of Human Settlement (DoHS); and Department of Environmental Affairs and Development Planning (DEADP) of the Western Cape Provincial Government (WCPG), has launched the review of its Spatial Development Framework (SDF) and the Human Settlement Plan (HSP).
Clearing of natural vegetation for cultivation on Doornrivier, Portion 47 of Farm 369, Worcester

The spatial planning comprises two components: The Spatial Development Framework (SDF) and the Land Use Management System (LUMS). The intent of the SDF is to show desired patterns of land use, directions for future growth, indicate the alignment of urban edges, and depict other special development areas. The impact of SDFs is limited to providing policy to guide and informing land development and management. They do not change or confer real rights on land.

The second component is the Land Use Management System (LUMS). This is similar to a town planning or zoning scheme. In contrast to SDFs, LUMS has a binding effect on the development rights attributed to land and confer real rights on properties. SDFs therefore play an important role in guiding appropriate future change and helping to guide motivations as to the need and desirability, or not, of proposed land use changes.

The proposed development will contribute to the economic development of the Breede Valley area, by increasing the economic value (and viability) of the farm, and by creating additional local employment opportunities. The proposed development is therefore in line with the local IDP and SDF, and will not compromise any of the strategic objectives, goals or mission statements of the IDP or SDF.

5.2.3 Land Use
The proposed development area for land clearing are currently not utilized for agricultural or any purpose by the Applicant. The entire property is approximately 200 ha in extent of which about 120 ha is currently developed, including vineyards, farm dams, farm homestead and workers housing.

The development will contribute to local economic development and will provide additional employment opportunities.

5.2.4 Surrounding Landuse
The proposed development is in line with the surrounding land use and will not detract from the areas sense of place. The proposed development will not generate significant noise, odours or waste. No storage or processing activities will take place on the Property. The proposed development is desirable as it will unlock future development within the area.
6 PUBLIC PARTICIPATION PROCESS

The Public Participation Process (PPP) during the Scoping Phase of this environmental process was conducted in order to inform Interested and Affected Parties (I&APs) of the proposed project and to identify issues, comments and concerns as raised by I&APs.

The PPP aims to promote open channels of communication between the project team and I&APs. All views and concerns are documented and considered during the evaluation of potential impacts and risks associated with the project.

Public Participation Process to date:
- The addresses of all neighbouring properties of Portion 47 of Farm 369, Worcester were obtained and entered into an I&APs database.
- An advert describing the proposed development, expected activities to be triggered, the public participation process and including an invitation to register and comment, was placed in English and Afrikaans in the local newspaper, Worcester Standard, on the 15 February 2018.
- An A1 sized site notice, in English and Afrikaans, describing the proposed development, expected activities to be triggered, public participation process, and inviting comment was erected at the proposed site on 15 February 2018.
- Notices describing the proposed development, expected activities to be triggered, the public participation process and including an invitation to comment, were sent to the neighbouring properties of Farm 369/47, Worcester and potential I&APs on the 15 February 2018.
- Registered letters and copies (digital or hard copy) of the draft Scoping Report were sent to the following commenting authorities:
  - Breede Valley Municipality
  - Cape Winelands District Municipality
  - Department of Agriculture Western Cape
  - CapeNature
  - Heritage Western Cape
  - Breede Gouritz Catchment Management Agency (BGCMA)
  - Central Breede River Water Users Association
  - Worcester-East Water Users Association
- Copies of the draft Scoping Report was available for public view at the Worcester Library, the BolandEnviro offices in Worcester and on the website www.BolandEnviro.co.za/project documents for the duration of the commenting period.
- The comment period (30 days) commenced on the 15 February 2018 until 16 March 2018.
- All written comments and responses received from the public and authorities during the review of the draft Scoping Report will be considered and included into the Final Scoping Report and Plan of Study which will be circulated for a further 30 days before submission to DEA&DP.
- Once the Final Scoping Report and Study Plan have been approved, the EIA phase will proceed. All documents in relation with the EIA Phase (draft EIA Report, Specialist Reports, etc.) will be submitted for review to commenting authorities and registered I&APs.
6.1 RELEVANT STATE DEPARTMENTS AND ORGANS OF STATE

- Department of Agriculture - Western Cape
- Department of Water Affairs - BGCMA
- Cape Nature
- Heritage Western Cape
- Cape Winelands Municipality
- Breede Valley Municipality

7 ENVIRONMENTAL ISSUES

7.1 VEGETATION

According to the SA Vegetation Map (Mucina and Rutherford 2006) the target area comprises Breede Alluvium Renosterveld vegetation (Figure 9). Breede Alluvium Renosterveld is listed as a Vulnerable (VU) ecosystem, under the criterion A1 (habitat loss), in the National List of Threatened Ecosystems (DEA 2011). The more recent Western Cape Biodiversity Spatial Plan - Ecosystem Threat Status (Cape Nature 2016) (not yet gazetted) indicates that Breede Alluvium Renosterveld is currently Endangered based on significant habitat loss.

The site connects natural habitat within and adjacent to the Nuy river with larger natural areas in the south-east.

It is noteworthy to show that the area directly east of the property is mapped as Robertson Karoo (Figure 9). Robertson Karoo is Least Threatened. This same area, east of the property, including the target development site on the farm itself, is locally and at a finer scale recognised as Worcester Renosterveld Karoo in the CAPE Fine-Scale Integrated Vegetation Map (Helme 2007) (Figure 10).

The proposed development entails the clearing of an extensive area of natural habitat and may impact on localised plant species. Approximately 30 Ha, located within the southern portion of the site, was previously brush-cut for the sowing of oats seeds for the cattle on the farm.

A botanical impact assessment will be conducted to determine if there is any other sensitive or endangered vegetation on the proposed development area.

7.2 FAUNA

The proposed development entails the clearing of an extensive area of natural habitat and may impacts on localised animal species.

The development area comprises open valley and natural koppies which are normally seen as special faunal habitat.

The target areas comprise open valleys, while watercourses, ridges and koppies, which are normally seen as special faunal habitat, will be excluded from the agricultural development. Large areas of natural habitat will still be available to fauna in the immediately surroundings areas.
Clearing of natural vegetation for cultivation on Doornrivier, Portion 47 of Farm 369, Worcester

7.3 ECOLOGICAL PROCESSES/ CONNECTIVITY
The entire site is identified as a terrestrial Critical Biodiversity Area (CBA). A number of CBAs were identified as natural landscape corridors in the broader area. CBAs mapped for the development area and immediate surroundings do not form part of a landscape / ecological CBA corridor. The Nuy River (aquatic CBA) is located 500-700 m NW of the site, while another smaller tributary (also aquatic CBA) is evident 200-300m NW of the site.

The site connects natural habitat within and adjacent to the Nuy river with larger natural areas in the south-east.

The development will therefore result in the reduction of a larger continuous natural corridor that was identified to meet biodiversity thresholds. These corridors are important to ensure habitat connectivity for plant and animal migrations and other interactions between landscape features.

7.4 SOIL EROSION
Cleared areas will be exposed to erosion during soil preparation for cultivation. Adequate erosion measures must be implemented to prevent soil erosion along farm tracks and within the new cultivated areas.

The soil potential study must clarify whether soils are suitable pecan nut farming, fig trees and olive trees, description of soils, recommendations for soil preparation and general recommendations in terms of drainage.

7.5 WATER RESOURCES
The entire site is mapped as a terrestrial CBA. The site connects natural habitat within and adjacent to the Nuy river with larger natural areas in the south-east. There are no wetland areas, drainage lines, or other important ecological process areas evident on site.

7.6 DUST
Dust will be generated during soil preparation. This will reduce air quality over the site, particularly during earthmoving activities. Dust generated by construction activities on site may be carried off-site by wind, thereby causing a nuisance to neighbours.

Agriculture is standard practice within the area and therefore little impact will be caused to people's health and wellbeing (in terms of noise, odours, visual character and sense of place) as a result of this activity. The location of the site also limits the impacts that the activity will have on people as the site is located outside the town of Worcester. Significant amounts of dust may smother surrounding vegetation.

7.7 NOISE
There will not be a significant noise impact as the proposed development will take place within an area that currently comprises undeveloped farmland.

7.8 WASTE
No waste or pollution will be generated by the development. The vegetation that will be removed will either be used for domestic purposes (fire wood) or it will be stockpiled into many heaps which will be burned on days suitable for burning.
7.9 HERITAGE RESOURCES

There are no buildings currently located on the Property and no buildings of cultural significance within the immediate surrounding area.

No new buildings will be constructed on the Property. The development should not significantly impact on the aesthetical appearance (sense of place) of the area. The proposed agricultural development will change the character of the Property and a NID will be submitted to Heritage Western Cape in terms of Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999). The project may impact on archaeological remains.

7.10 SOCIO-ECONOMIC

The Applicant asserts that the proposed development will have an over-all positive socio-economic impact.

In particular it is expected that a significant amount of employment opportunities will be created while unlocking the agricultural potential of the properties. An indirect impact of the proposal is an increase in agricultural produce which is not only beneficial to the local area but to the entire region and possibly the country too. The direct and indirect positive impacts resulting from the proposed activity can be safeguarded through the implementation of best-farming practises and compliance with any recommendations made by the Department of Agriculture.

No negative socio-economic impacts are therefore expected should this proposal be approved. In addition, no significant cultural or heritage impacts will result from the proposed clearing activities. The development area is located on an operational farm located within an agricultural area – the sense of place and history of the area will not be affected by the expansion of agricultural on the farm Doornrivier, Portion 47 of Farm 369.

8 ALTERNATIVES

The objective of an impact assessment is to find the alternative having the least negative environmental impact, and which best benefits society. The assessment and evaluation of potential impacts associated with the development would thus be undertaken in a re-iterative manner, to optimally inform pro-actively the development proposal.

GN R982 of 2014 as amended requires, in part, that the Scoping and EIA Reports include a description of any feasible and reasonable alternatives that have been identified. Regulation 1 of GN R982 of 2014 as amended defines alternatives as follows:

“alternatives”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to –
(a) the property on which or location where it is proposed to undertake the activity (alternative properties as well as alternative sites on the same property);
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity (consideration of such alternatives is to include the option of achieving the same goal by using a different method or process); and
(e) the operational aspects of the activity;
8.1 SITE ALTERNATIVE
Only one location alternative has been assessed for this development. The site measures approximately 75 ha in size. The entire property is 199.8 ha in extent of which about 120 ha is currently developed, including vineyards, farm dams, farm homestead and workers housing. The site is most desirable as it is located on the property of current agricultural cultivation.

8.2 LAYOUT ALTERNATIVES
Two alternative layouts are proposed for the cultivation of virgin soil on farm Doornrivier, Portion 47 of Farm 369, Worcester.

8.2.1 Alternative 1 (Preferred)
The entire area will be cleared of natural vegetation and cultivated for pecan nut trees, fig trees and olive trees.

That is, all areas within the yellow polygon depicted in Figure 11 and Appendix B suitable for cultivation from an agricultural perspective will be cleared. These areas will measure approximately 75 ha in total.

![Figure 11: The proposed Alternative 1 layout (preferred).]

8.2.2 Alternative 2
This alternative, is shown in Figure 12 and Appendix B.

The layout alternative (Figure 11) seeks to develop all the potential areas excluding the eastern portion (approximately 10ha) of the site. This preferred layout alternative is important to ensure habitat connectivity for plant and animal migrations and other interactions between landscape features. The approximate area target for clearing will be 65 ha. Please note that the exact area will be needed to be surveyed, should this application be approved. The sizes are only approximate measurements performed on Google Earth Pro.
Figure 12: The Alternative 2 layout for the proposed development.

8.3 NO-GO ALTERNATIVE
This alternative comprises the “no go” development alternative in terms of which status quo of the area and extent of agricultural landuse would be maintained. Should the proposed activity not proceed, the site will remain unchanged. This implies that no natural vegetation will be cleared and the proposed dam will not be developed. Although this is beneficial for the conservation of the vegetation on the site, there will be no benefits to the local community and no increase in the agricultural production of the development area and surrounding area.

9 PLAN OF STUDY FOR EIA

9.1 TASK TO BE UNDERTAKEN
The following is a list of tasks to be performed as part of the EIA Phase of the Environmental Impact Assessment Process. Should the process be modified significantly, changes will be copied to DEA&DP.
Clearing of natural vegetation for cultivation on Doornrivier, Portion 47 of Farm 369, Worcester

### EIA PROCESS

<table>
<thead>
<tr>
<th>Step</th>
<th>Details</th>
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<tbody>
<tr>
<td>Receive approval for the Scoping Report and the Plan of Study for EIA.</td>
<td></td>
</tr>
<tr>
<td>Compile Draft Environmental Impact Report (EIR) for public comment based on specialist information.</td>
<td></td>
</tr>
<tr>
<td>Submit copies of the Draft EIR to DEA&amp;DP and relevant State Departments and Organs of State and notify them of the commenting period.</td>
<td></td>
</tr>
<tr>
<td>Notify Registered I&amp;APs of the opportunity to comment on the EIR.</td>
<td></td>
</tr>
<tr>
<td>Make the EIR available for a 30-day commenting period.</td>
<td></td>
</tr>
<tr>
<td>Receive comments to the draft EIR.</td>
<td></td>
</tr>
<tr>
<td>Preparation of the EIR for submission to DEA&amp;DP including proof of the Public Participation Process, comments received and our responses to these comments.</td>
<td></td>
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</table>

9.2 METHODOLOGY TO BE FOLLOWED DURING EIA

Full copies of the draft Environmental Impact Report (EIR) will be placed at the Worcester Public Library, kept at the BolandEnviro office in Worcester and on the website www.BolandEnviro.co.za. Interested and affected parties will be notified of the draft EIR by means of advertisements in the Worcester Standard and placed on local community notice boards. In addition to the advertisements, registered I&APs and commenting authorities will be notified and copies of the draft EIR will be posted to them. The draft EIR will be made available for a 30-day comment period.

Correspondence with I&APs will be via registered and normal post, fax, telephone, email and newspaper advertisements. All reports will be in English, with advertisements, notification letters and Executive Summaries.

At the end of the comment period, the EIR will be revised in response to feedback received from I&APs. All comments received and responses to the comments will be incorporated into the final EIR which will be available for a further 30 days commenting period before submission to DEA&DP for a decision.

9.3 CRITERIA FOR SPECIALIST ASSESSMENT OF IMPACTS

Based on the issues raised by I&APs and the project team, specialist studies will be undertaken to provide information to address concerns and assess the impacts of the proposed development on the environment. The specialists are provided with set criteria for undertaking their assessments, to allow for comparative assessment of all issues. The criteria is based on the EIA Regulations, published by the Department of Environmental Affairs and Tourism (April 1998) in terms of the Environmental Conservation Act No. 73 of 1989 and the Department of Environmental Affairs and Development Planning, Guidelines for involving Biodiversity Specialists in EIA Processes, 2005.

Impact criteria should include the following:
Clearing of natural vegetation for cultivation on Doornrivier, Portion 47 of Farm 369, Worcester

**Nature of the impact**

This is an appraisal of the type of effect the construction, operation and maintenance of a development would have on the affected environment. This description should include what is to be affected and how.

**Extent of the impact**

Describe whether the impact will be: local extending only as far as the development site area; or limited to the site and its immediate surroundings; or will have an impact on the region, or will have an impact on a national scale or across international borders.

**Duration of the impact**

The specialist should indicate whether the lifespan of the impact would be short term (0-5 years), medium term (5-15 years), long term (16-30 years) or permanent.

**Intensity**

The specialist should establish whether the impact is destructive or benign and should be qualified as low, medium or high. The specialist study must attempt to quantify the magnitude of the impacts and outline the rationale used.

**Probability of occurrence**

The specialist should describe the probability of the impact actually occurring and should be described as improbable/unlikely (low likelihood), probable (distinct possibility), highly probable (most likely) or definite (impact will occur regardless of any prevention measures).

**Reversibility**

- Completely reversible - the impact can be reversed with the implementation of minor mitigation measures.
- Partly reversible - the impact is reversible but more intense mitigation measures are required.
- Barely reversible - the impact is unlikely to be reversed even with intense mitigation measures.
- Irreversible - the impact is irreversible and no mitigation measures exist.

The impacts should also be assessed in terms of the following aspects:

- **Status of the impact**
  The specialist should determine whether the impacts are negative, positive or neutral (“cost-benefit” analysis). The impacts are to be assessed in terms of their effect on the project and the environment. For example, an impact that is positive for the proposed development may be negative for the environment. It is important that this distinction is made in the analysis.

- **Cumulative impact**
Consideration must be given to the extent of any cumulative impact that may occur due to the proposed development. Such impacts must be evaluated with an assessment of similar developments already in the environment. Such impacts will be either positive or negative, and will be graded as being of negligible, low, medium, or high impact.

- **Degree of confidence in predictions**
  The specialist should state what degree of confidence (low, medium or high) is there in the predictions based on the available information and level of knowledge and expertise.

Based on a synthesis of the information contained in the above-described procedure, the specialist is required to assess the potential impacts in terms of the following significance criteria:

- **No significance**: the impacts do not influence the proposed development and/or environment in any way.
- **Low significance**: the impacts will have a minor influence on the proposed development and/or environment. These impacts require some attention to modification of the project design where possible, or alternative mitigation.
- **Moderate significance**: the impacts will have a moderate influence on the proposed development and/or environment. The impact can be ameliorated by a modification in the project design or implementation of effective mitigation measures.
- **High significance**: the impacts will have a major influence on the proposed development and/or environment.

### 9.4 BRIEFS FOR SPECIALIST STUDIES TO BE UNDERTAKEN AS PART OF THE EIA

#### 9.4.1 Botanical/ Ecological Assessment

A botanical assessment will be conducted by a botanical specialist.

The terms of reference for this will include the following:

- The broad ecological characteristics of the site and its surrounds will be described in terms of any mapped spatial components of ecological processes and/or patchiness, patch size, relative isolation of patches, connectivity, corridors, disturbance regimes, ecotones, buffering, viability, etc.
- In terms of biodiversity pattern, the following will be identified or described:
  - **Community and ecosystem level**
    - The main vegetation type, its aerial extent and interaction with neighbouring types soils or topography.
    - The types of plant communities that occur in the vicinity of the site.
    - Threatened or vulnerable ecosystems.

  - **Species level**
    - Red Data Book (RDB) species.
The viability of, and estimated population size of the RDB species that are present.
The likelihood of other RDB species, or species of conservation concern, occurring in the vicinity.

**Other pattern issues**

- Any significant landscape features or rare or important vegetation associations such as seasonal wetlands, alluvium, seeps, quartz patches in the vicinity.
- The extent of alien plant cover of the site, and whether the infestation is the result of prior soil disturbance such as ploughing or quarrying.
- The condition of the sites in terms of current or previous land uses.

- In terms of biodiversity process, the following will be identified or described:
  - The key ecological “drivers” of ecosystems on the site and in the vicinity.
  - Any mapped spatial component of an ecological process that may occur at the site or in its vicinity.
  - Any possible changes in key processes.

This report will clearly indicate any constraints that would need to be taken into account in considering the development proposals further, as well as indications of important constraints on the Subject Land.

The report will include the following:

- The significance of the potential impact of the proposed project, alternatives and related activities – with and without mitigation – on biodiversity pattern and process at the site, landscape and regional scales.
- The following will be indicated on a topographical map or orthomap:
  - The area that would be impacted by the proposed development.
  - The location of vegetation and spatial components of ecological processes that should not be developed or otherwise transformed.
  - Areas that must remain intact as corridors or ecological “stepping stones” to maintain ecosystem functioning, including fires in fire-prone systems.
- Recommended actions that should be taken to prevent or, if prevention is not feasible, to mitigate impacts and restore disturbed vegetation or ecological processes.
- Limitations and assumptions, particularly in relation to seasonality.
- Biodiversity considerations, which could be used to inform socio-economic aspects of the proposed project.

**9.4.2 Heritage Impact Assessment (Archaeological)**

In terms of the National Heritage Resources Act (Act No. 25 of 1999), a Heritage Impact Assessment (HIA) consisting of a specialist archaeological study and a specialist palaeontological study is required for this proposal.
Clearing of natural vegetation for cultivation on Doornrivier, Portion 47 of Farm 369, Worcester

- An Archaeological Impact Assessment will be conducted and submitted to Heritage Western Cape as part of the EIA.

Proposed Terms of Reference are to:

1) Determine whether there are likely to be any significant archaeological resources that may be impacted by the proposed development;
2) To identify and map archaeological resources that may be impacted by the development;
3) To assess the sensitivity and conservation significance of archaeological resources affected by the proposed development;
4) To assess the significance of any impacts resulting from the proposed development, and
5) To identify measures to protect and maintain any valuable archaeological sites that may impacted by the proposed development.

9.4.3 Soil potential study

A soil potential study will be conducted.

The scope of the soil potential study will include the following:

1) A soil survey
2) Soil map
3) Soil report

The soil report will include the following:

1) Soil map, including soil codes and potential for cultivation.
2) Description of soils and soil potential.
3) List of soil samples.
4) Recommendations for soil preparation and any specific actions that may be required.
5) General recommendations in terms of drainage.
6) Recommendations on suitability on various cultivars.

9.4.4 Faunal Assessment

A faunal study will not be conducted at this stage. The botanical/ecological assessment will follow a habitat based approach. Should any habitats that are likely to support rare or endangered animals be recognized, a faunal specialist will be consulted to investigate the site.

9.5 AUTHORITY CONSULTATION

The relevant authority (DEA&DP) will be consulted during the following stages of the EIA Process:

- Accepting the Plan of Study for EIA
- Submission of Draft EIR
- Submission of Final EIR
- Issuing of the Environmental Authorisation
9.6 LIMITATIONS
This report is based on currently available information and, as a result, the following limitations are implicit:

- A project description based on the final layout will be provided in the EIA Phase; and
- Descriptions of the natural and social environments are based on limited fieldwork and local knowledge as well as available literature.

More information will be provided in the EIA phase based on the outcomes of the specialist studies.

9.7 CONCLUSIONS
This draft Scoping Report, being undertaken in terms of NEMA (Act 107 of 1998), summarises the environmental process undertaken to date, it provides a description of the proposed activity, the property and the receiving environment. It summarises environmental issues related to the proposed development, potential significant positive and negative impacts, the identification alternatives and recommendations which need to be evaluated and investigated during the EIA phase.

As a result of the above, the need for the following specialist studies, were identified:
- Heritage Impact Assessment (Archaeological)
- Botanical/Ecological Assessment
- Soil Survey

The significance of the impacts associated with the alternatives proposed will be assessed in these specialist studies, as part of the EIA. Detail impacts will be determined accordingly and appropriate management and mitigation measures provided. Once the specialist studies have been completed, they will be summarised in an Environmental Impact Report (EIR), which integrates the findings of the assessment phase of the EIA. Mitigation measures will be separated into construction and operational phases. Specific management and monitoring requirements/guidelines will also be provided and these requirements/ guidelines will be used as conditions for the Environmental Decision, (should it be granted), and subsequent Construction and Operational Environmental Management Programmes.

10 APPENDIX

APPENDIX A (LOCALITY MAP)
APPENDIX B (SITE PLAN AND LAYOUTS)
APPENDIX C (PHOTOGRAPHS)
Clearing of natural vegetation for cultivation on Doornrivier, Portion 47 of Farm 369, Worcester