CHAPTER THREE: DESCRIPTION OF THE AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This section of the report provides baseline information regarding the affected environment, as well as an overview of the surrounding land use activities. An overview of the associated environmental attributes of the site has been included to aid in the process of identifying project activities that may have potential impacts on the environment, and which have been assessed in the Environmental Impact Assessment (EIA) phase. Additionally, this information highlights potential constraints which the affected environment may place on the proposed development. The following environmental attributes of the approved site, as contemplated in the accepted Scoping Report, have been considered:

- Geographical Context: Site Locality and Surrounding Land-use
- Biological
- Physical
- Heritage and Cultural
- Socio-economic: Social and Economic

The baseline information presented in this chapter was sourced from the following available desktop resources:

- Plans
- Guidelines
- Spatial Tools and Mapping Resources
- Municipal Development Planning Frameworks and Instruments
- Relevant literature and Web-based Information

The respective environmental attributes have, amongst others, informed the identification of alternatives for the proposed development. The assessment of alternatives is contained in Chapter Five of this report. To further inform the description of the affected environment and refine the scope of the assessment, site visits took place on the 11 April 2017 and the 24 July 2017. The information gathered from site observations was supplemented by preliminary specialist input. In addition, the description of the affected environment has been informed by the Environmental Assessment Practitioner's (EAPs) knowledge of the local area, based on several previous environmental assessments of a similar nature which have been undertaken in the Nelson Mandela Bay Municipality (NMBM) and Sundays River Valley Municipality (SRVM), namely:

- New agricultural developments for Habata Boerdery on the following farms:
  - Landdrost Veeplaats, SRVM
  - Oliphantskop, NMBM
  - Portion 18 and 19 Logan Braes, NMBM
  - Portion 16 and 17 Logan Braes, NMBM
  - Falcon Ridge, SRVM
- New agricultural developments for San Miguel Fruits SA (Pty) Ltd:
  - Riverbend Citrus, SRVM
  - Intsomi Citrus, SRVM
- New agricultural development for Venter Boerdery on Hopefield Farm, SRVM
- New agricultural development for Kududu Trust on Portion 5 of Nooitdgedacht, SRVM
- New agricultural development for Hermanus Potgieter Familie Trust on Swanepoels Kraal, SRVM
- New agricultural development for Luthando Farm on Portion 320 of Strathsomers Estate, SRVM

Based on the outcome of the assessment process, specialist studies, technical input and consultation process, the applicant, San Miguel Fruits SA (Pty) Ltd, proposes to expand citrus production at their existing operations on Portion 2 of Farm 92, known as Sylvania, which measures ~243.82ha in extent. Sylvania is an existing, working farm and the area proposed for development is located on the western section of the farm and measures ~65ha. A detailed project description is provided in Chapter Two of this report.

3.2 GEOGRAPHICAL CONTEXT

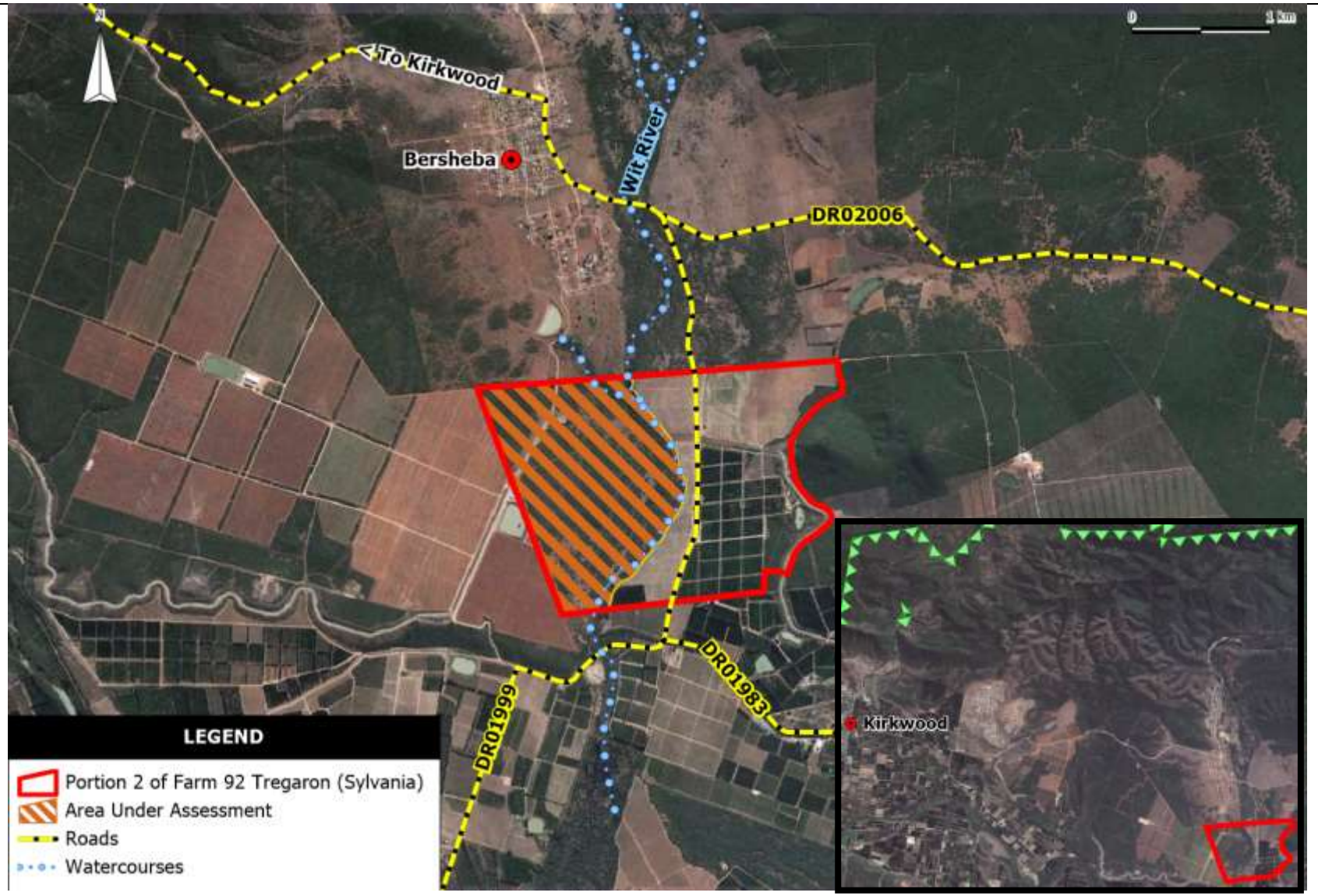
3.2.1 Site Locality and Overview

Sylvania is located ~9.3km south east of Kirkwood, in the SRVM, Eastern Cape, South Africa. The nearest boundary of the Addo Elephant National Park is located ~7.4km north of the site (Map 3.1 and insert). Sylvania is zoned for Agriculture.

Based on the outcome of the assessment process, specialist studies, technical input and consultation process, the project applicant, San Miguel Fruits SA (Pty) Ltd, intends to utilise the agricultural potential of the land for the establishment of citrus orchards. Portion 2 of Farm 92, known as Sylvania, measures ~243.82ha in extent. The area proposed to be transformed within the ~115ha area under assessment, measures ~65ha in extent. Approximately 50ha of citrus is proposed to be established within the development footprint and ~15ha is proposed to be cleared for associated infrastructure (roads, irrigation, dam etc.). Irrigation of the proposed agricultural development requires the construction of a new dam with a capacity to store ~30 000m^3 (~2.1ha footprint) of water, as well as the installation of irrigation pipelines of varying diameters.

The existing buildings on Sylvania are proposed to be used for the storage of vehicles, pesticides and herbicides, as well as to provide administrative support to the development. In addition, the administrative facilities at another farm (known as Mfuleni) owned by the applicant, located ~2km south of Sylvania, are also proposed to be utilised for the expanded agricultural development on Sylvania. Therefore, no additional services infrastructure is necessary to support the proposed agricultural expansion on the farm.

See Chapter Two of the report for a detailed project description.



Map 3.1: The location of the area under assessment which is situated on Portion 2 of Farm 92 Tregaron, known as Sylvania. The map insert is showing Sylvania in relation to the nearest town, Kirkwood, as well as the distance from the Addo Elephant National Park (green border).

3.2.2 Surrounding Land-use

Sylvania is adjacent to six properties (Map 3.2). These properties, with their associated activities, are listed in Table 3.1 below. Untransformed vegetation is largely restricted towards the northern and north-eastern properties adjoining the farm. The majority of properties surrounding the farm are under cultivation, while the northern boundary of the farm is adjacent to the Bersheba settlement and associated communal farming activities. Based on the surrounding land uses mentioned above, the proposed agricultural development on Sylvania is not likely to cause a significant change in character within the surrounding landscape, as the surrounding area is currently predominantly agricultural in nature. As a result, the focus of this EIA has been on the potential of the site for the planting of citrus orchards, as well as areas for conservation, guided by technical and biophysical constraints which have been determined through relevant specialist studies. Additionally, the assessment has considered the proximity of the proposed agricultural development to the Addo Elephant National Park (Map 3.1) and potential impacts thereon, due to the triggering of related listed activities in the NEMA EIA Regulations, 2014 (as amended). See Chapter Four for the full list of activities triggered and Chapters Six to Ten for the various specialist studies conducted.

Table 3.1: Activities on the land adjacent to the area under assessment.

Farm Number	Activities	Boundary
RE/40	Communal farming and untransformed vegetation	North
28/92	Cultivated lands and untransformed vegetation	East
RE/92	Citrus orchards and cultivated lands	South
23/92	Irrigation dam	South
22/92	Rangeland	South
20/84	Cultivated lands and untransformed vegetation	West

Map 3.2: Properties (yellow outline) adjacent to Portion 2 of Farm 92 Tregaron, Sylvania (red outline).

3.3 ENVIRONMENTAL ATTRIBUTES

3.3.1 Biological

The vegetation expected to occur at the site is noted in a number of conservation planning frameworks relevant to the area. The resolution of the planning framework mapping is limited to a landscape level and the vegetation types and distribution on individual farms is subject to confirmation by a vegetation specialist. The section below outlines the findings of the desktop review of the relevant National and Regional conservation planning frameworks and mapping resources applicable to the area.

3.3.1.1 Aquatic Vegetation

National Context

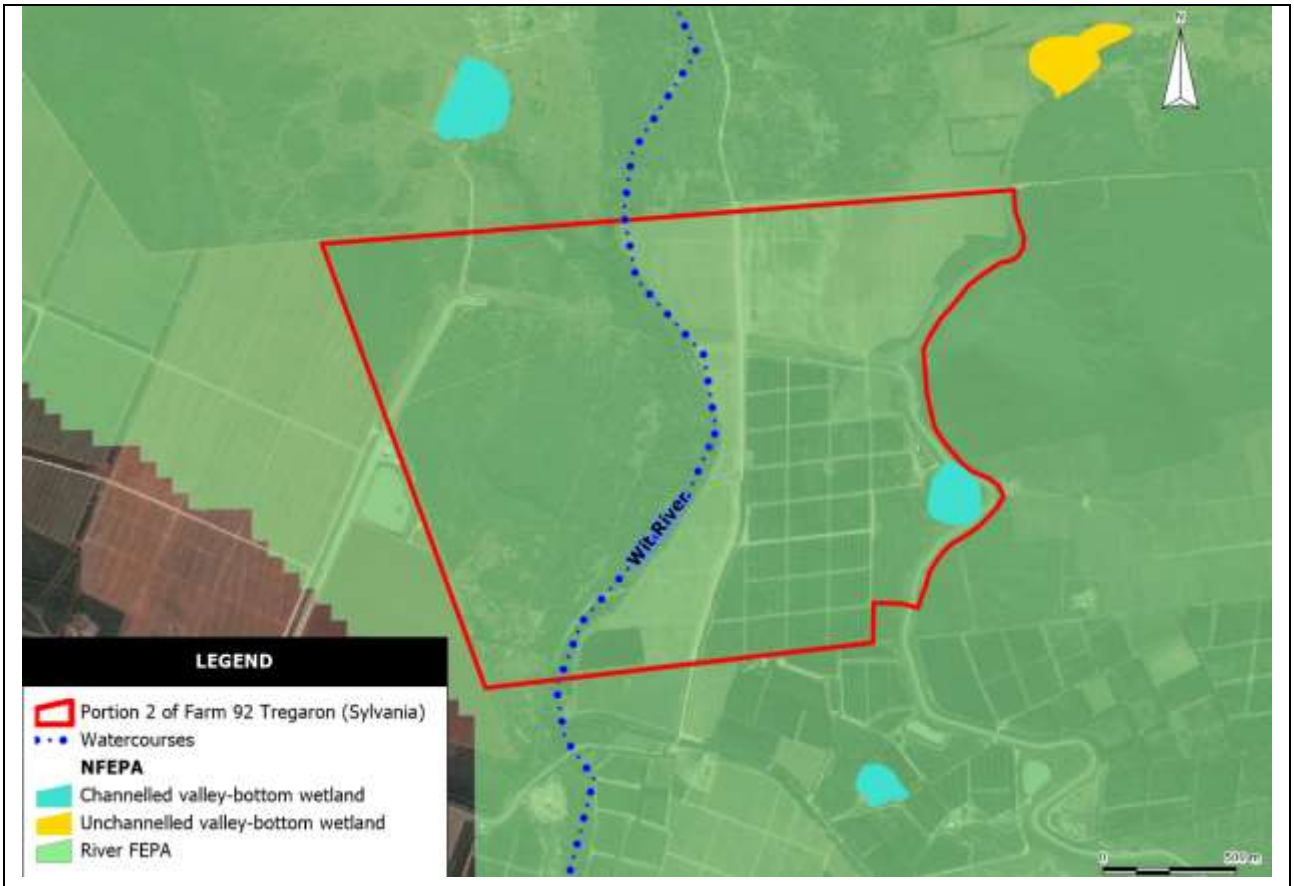
- National Freshwater Ecosystem Priority Areas (NFEPA; Net et al. 2011):

The NFEPA project is a systematic biodiversity planning framework which aims to identify FEPAs to meet national biodiversity goals for freshwater ecosystems, within the context of equitable socio-economic development. Additionally, the project aims to enable the effective implementation measures to ensure the protection of FEPAs, which includes free-flowing rivers.

In terms of the NFEPA map, the majority of Sylvania is classified as a River FEPA. According to the Technical Report for the NFEPA project (2011), river FEPAs aim to achieve biodiversity targets for river ecosystems, threatened/ near-threatened fish species and were identified in rivers that are currently in a good condition (A or B ecological category). FEPA status indicates that the river, in this instance the Wit River, should remain in a good condition in order to contribute to the biodiversity goals of the country. For river FEPAs, the whole sub-quaternary catchment is shown as a FEPA, although FEPA status only applies to the actual river reach of the Wit River (Map 3.3).

The NFEPA Wetlands map has identified three channelled valley-bottom wetlands. Two of these wetlands are located within 500m of the boundary of the site and one is located within the site, along the eastern boundary. Additionally, one unchannelled valley-bottom wetland has been identified within 500m of the boundary of the site (Map 3.3).

The presence of potential and existing wetlands, rivers and drainage lines on Sylvania have been assessed by an aquatic specialist during the EIA phase of this assessment (See Chapter Seven).



Map 3.3: Portion 2 of Farm 92 Tregaron, as described by the National Freshwater Ecosystem Priority Areas (NFEPA) mapping resources, indicating wetland habitat on the site as well as within 500m of the boundary of the site.

Regional Context

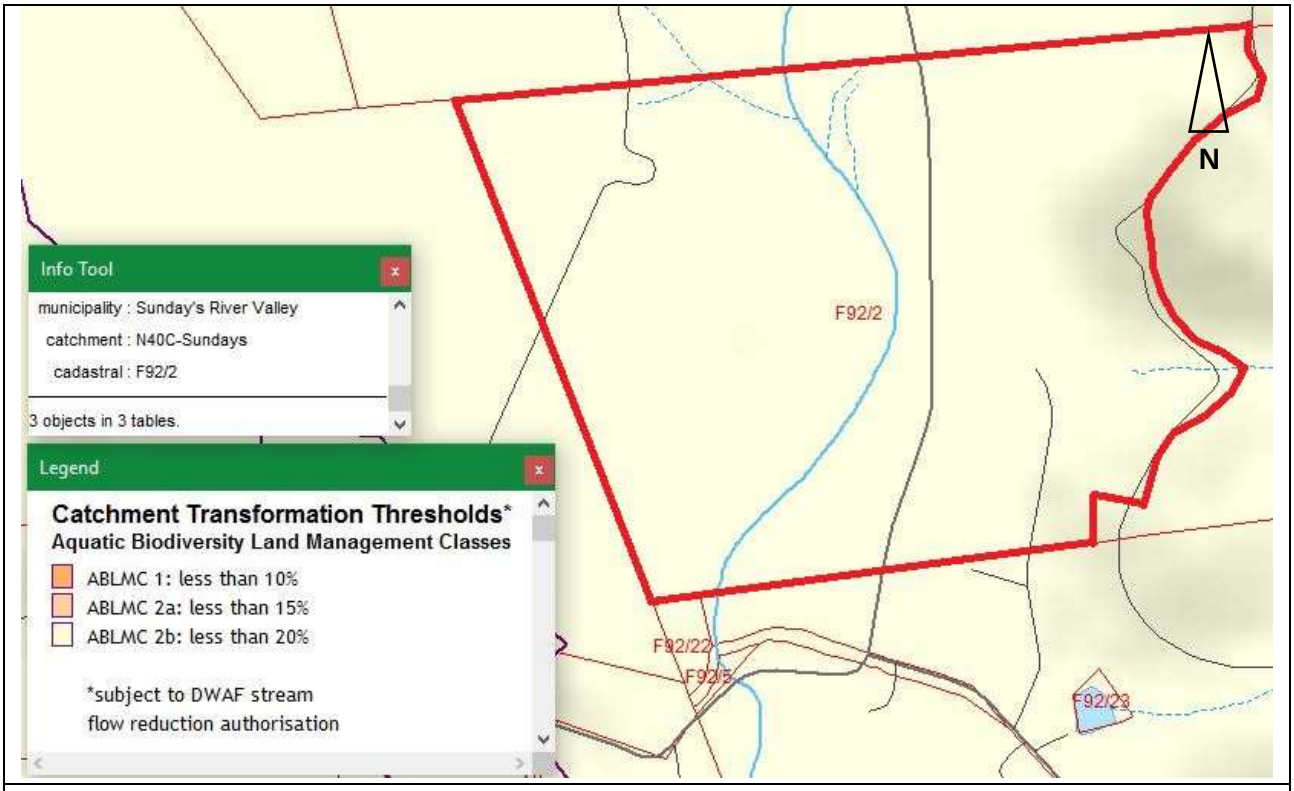
- Eastern Cape Biodiversity Conservation Plan (ECBCP; Berliner & Desmet 2007):

The ECBCP is a broad scale biodiversity plan, utilized to map particular Terrestrial or Aquatic Critical Biodiversity Areas (CBAs) for conservation in the Eastern Cape, as well as to assign appropriate land use categories and guidelines to the existing land.

It is important to note that, although the *Sundays River Valley Municipality Biodiversity Sector Plan* is a more recent document and has been mapped at a finer scale, when determining the listed activities applicable to the proposed development, the ECBCP, rather than the SRVM BSP is consulted, as stipulated by the competent authority.

Sylvania falls within an Aquatic Biodiversity Land Management Class 2b (ABLMC2b) in terms of the ECBCP mapping resources. An ABLMC2b refers to a catchment area of free-flowing rivers that are considered important for fish migration. The farm is identified as an Aquatic CBA because it falls within the N40C-Sundays Catchment. In terms of the ECBCP, catchments which are classified as ABLMC2b have a transformation threshold of less than 20% of the sub-quaternary catchment. (Map 3.4). Currently ~13.9% of N40C-Sundays Catchment, within which the proposed development is located, has been transformed (modified), while 5% has been degraded.

The importance of the aquatic resources on Sylvania in maintaining CBAs and Ecological Processes, have been assessed by an aquatic specialist during the EIA phase of this assessment (See Chapter Seven).



Map 3.4: Portion 2 of Farm 92 Tregaron (red outline) in terms of the ECBCP Aquatic CBA mapping resources.

3.3.1.2 Terrestrial Vegetation

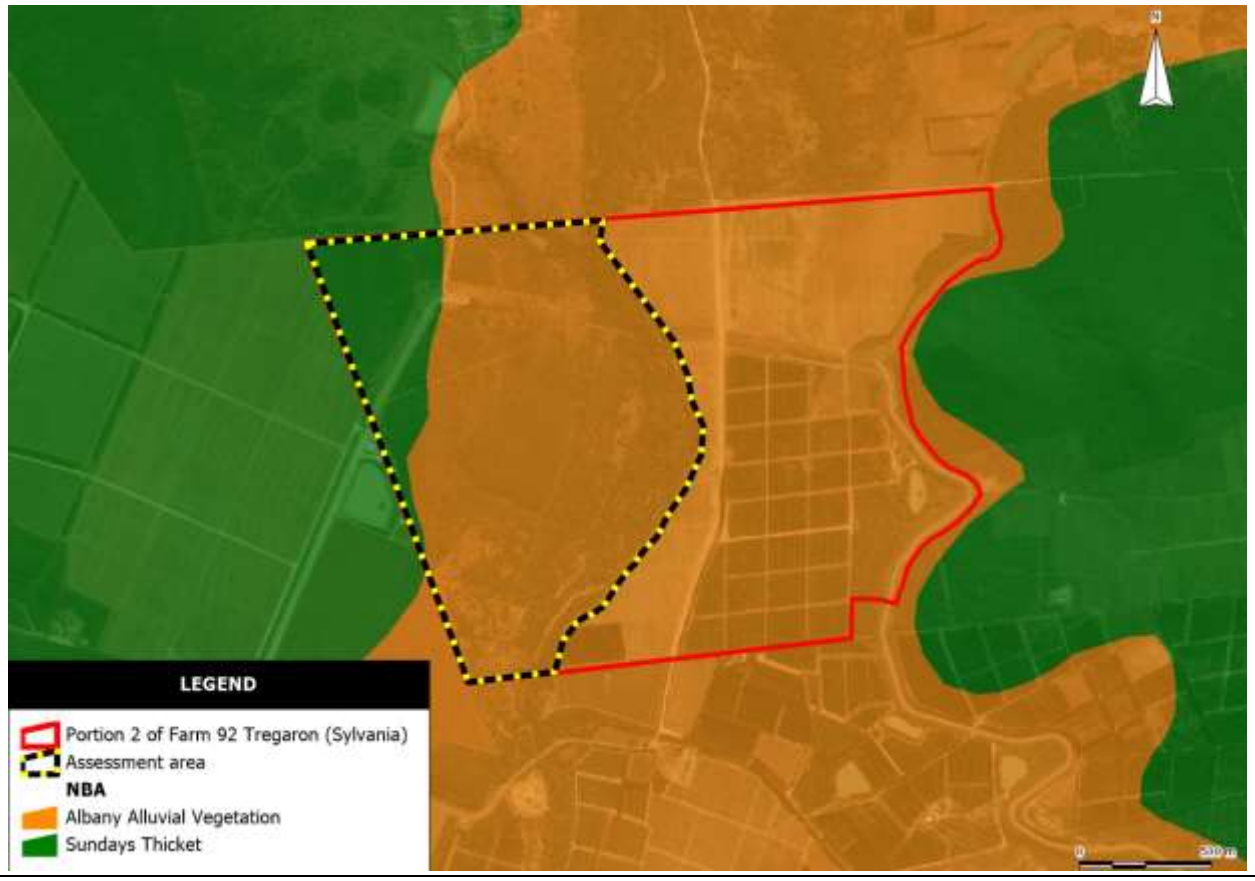
National Context

- National Biodiversity Assessment (NBA 2011):

The NBA aims to identify the threat status and protection levels for ecosystems, in order to map and classify various ecosystem types in South Africa.

The NBA shows the predominant vegetation type on the area under assessment as Albany Alluvial Vegetation. A north-western section of the area under assessment is mapped as Sundays Thicket. Albany Alluvial Vegetation has an ecosystem status of *Endangered* and is listed as *Poorly Protected*. Sundays Thicket has an ecosystem status of *Least Concern* and is similarly listed as *Poorly Protected*. The respective conservation targets proposed for Albany Alluvial Vegetation and Sundays Thicket, in the NBA mapping resources, is 31% and 19% of the original extent (Map 3.5).

The presence and extent of the vegetation types on the area under assessment have been determined by a vegetation specialist during the EIA phase of this assessment (See Chapter Six).



Map 3.5: The area under assessment (yellow and black outline), which is situated on Portion 2 of Farm 92 Tregaron, known as Sylvania, as mapped in the NBA mapping resources, showing the vegetation types on site.

Regional Context

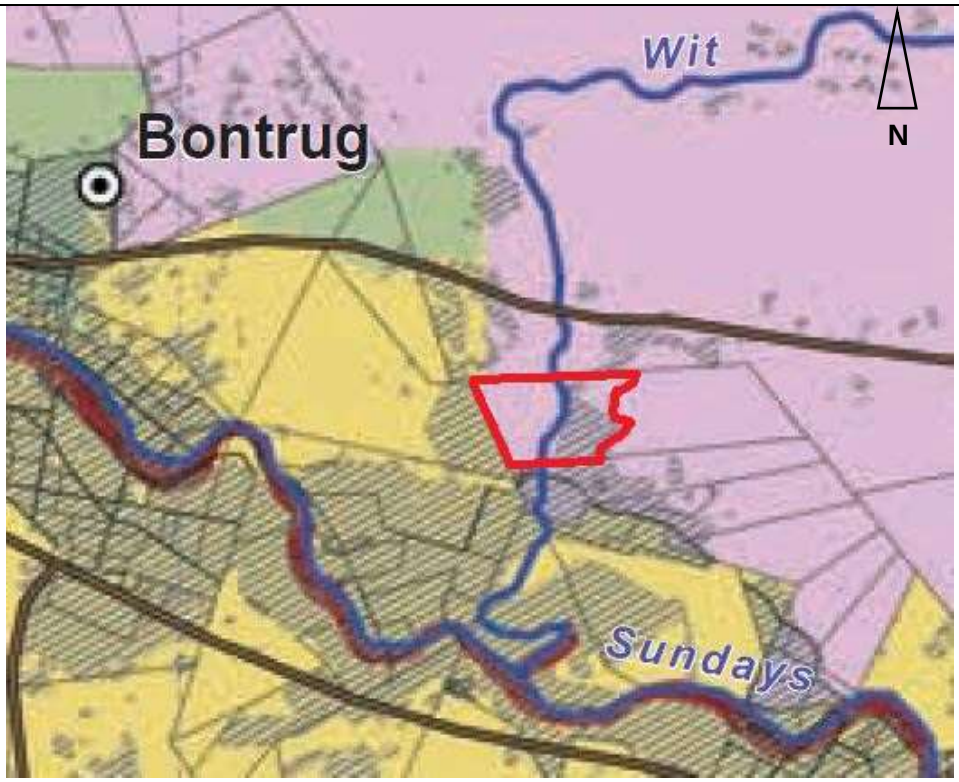
- Subtropical Thicket Ecosystem Programme (STEP; Pierce & Mader 2006):

The STEP mapping resources indicate that the vegetation on the area under assessment is predominantly Sundays Doringveld. A north-western section is mapped as Sundays Spekboom Thicket (Map 3.6). Sundays Doringveld and Sundays Spekboom Thicket are both listed as *Vulnerable*. The conservation targets of the original extent assigned in terms of STEP is 17% for Sundays Doringveld and 18% for Sundays Spekboom Thicket.

According to the STEP mapping resources, Sylvania is situated within a Biodiversity Corridor (purple on Map 3.7) but does not fall within a Protected Area (green on Map 3.7). Regarding Biodiversity Corridors, the STEP Mapbook notes that minimal loss of natural areas and minimal impacts should be allowed. An eastern portion of the site has been mapped as Impacted Area and is currently under cultivation. It is worth noting that the STEP is superseded by the SRVM BSP as it is a more recent document and at mapped at a finer scale.

The presence of the vegetation types on the area under assessment, as well as their extent, have been confirmed by a vegetation specialist during the EIA phase of this assessment (See Chapter Six).

Map 3.6: The area under assessment (yellow and black outline), which is situated on Portion 2 of Farm 92 Tregaron, known as Sylvania, as mapped in the STEP mapping resources, showing the vegetation type present on site.



Map 3.7: Portion 2 of Farm 92 Tregaron (red outline) is situated within a Biodiversity Corridor (purple) but does not fall within a Protected Area (green), as identified in the STEP mapping resources.

- Eastern Cape Biodiversity Conservation Plan (ECBCP; Berliner & Desmet 2007):

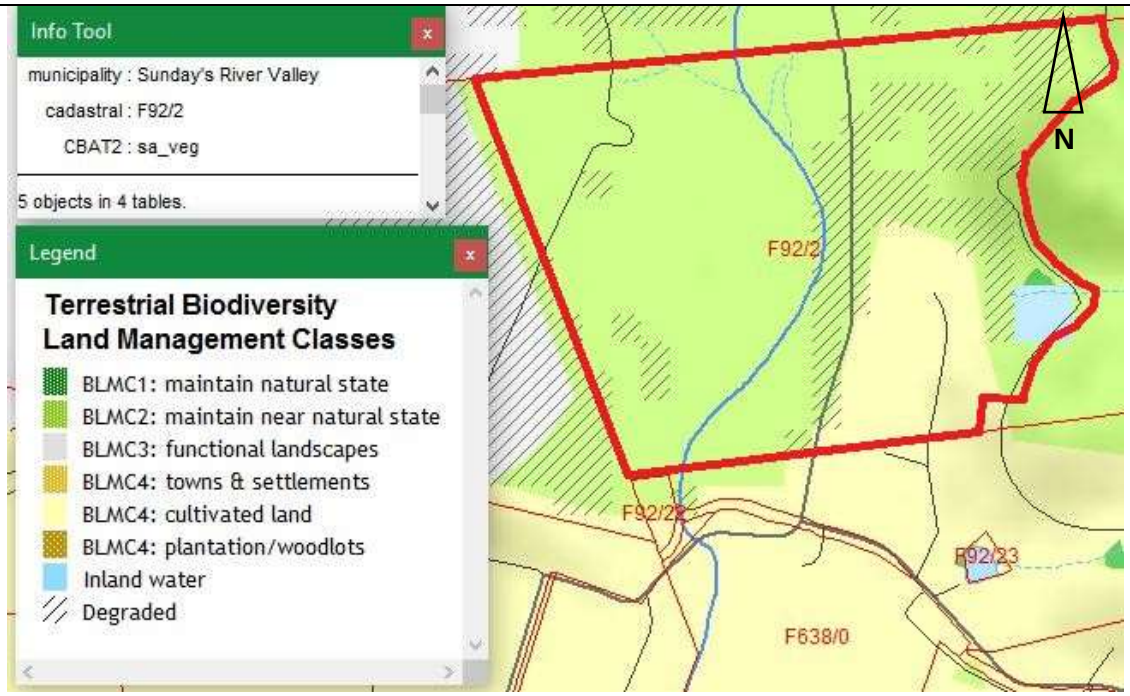
The ECBCP is a broad scale biodiversity plan, utilized to map particular Terrestrial or Aquatic Critical Biodiversity Areas (CBAs) for conservation in the Eastern Cape, as well as to assign appropriate land use categories and provide management guidelines to the existing land.

It is important to note that, although the *Sundays River Valley Municipality Biodiversity Sector Plan* is a more recent document and has been mapped at a finer scale, when determining the listed activities applicable to the proposed development, the ECBCP, rather than the SRVM BSP is consulted, as stipulated by the competent authority.

The ECBCP mapping resources indicates Sylvania as predominantly a Terrestrial Biodiversity Land Management Class 2 (BLMC2 – CBA), with two portions towards the east mapped as a Terrestrial Biodiversity Land Management Class 1 (BLMC1 – CBA) and a Terrestrial Biodiversity Land Management Class 4 (BLMC4 – Cultivated land), respectively. Additionally, Inland water is mapped on the eastern boundary of the site, while scattered sections across the site are shown as degraded.

A BLMC2 refers to a Critical Biodiversity Area that must be maintained in a near natural state. The recommended land use objective for a BLMC2 would be to manage sustainable development practices, with minimum loss in ecosystem integrity and functioning. The acceptable transformation threshold for a BLMC2 is 0%-10%, per land parcel considered. The land uses recommended by the ECBCP for a BLMC2 includes conservation, game farming and communal livestock. No development is proposed on the sections mapped as BLMC1, BLMC4 or Inland water. The land use objective for degraded land is to manage sustainable development (Map 3.8).

The importance of the vegetation on Sylvania in maintaining CBAs and Ecological Processes has been assessed by a botanical specialist during the EIA phase of this assessment (See Chapter Six).



Map 3.8: Portion 2 of Farm 92 Tregaron (red outline) in terms of the ECBCP Terrestrial CBA mapping resources.

- Sundays River Valley Municipality Biodiversity Sector Plan (SRVM BSP; Vromans et al. 2012):

Of the nine local municipalities in the Sarah Baartman district Municipality, the Sundays River Valley Local Municipality is one of the four local municipalities for which Biodiversity Sector Plans have been developed. From a biodiversity perspective, these municipalities comprise 44.7% of South Africa's Albany Thicket Biome. Furthermore, approximately half of the Sundays River Valley Local Municipality occurs in the southwestern Albany-Pondoland-Maputoland Hotspot, a globally recognized hotspot (Mittermeier et al., 2004).

It is important to note that, although the *Sundays River Valley Municipality Biodiversity Sector Plan* is a more recent document and has been mapped at a finer scale, when determining the listed activities applicable to the proposed development, the ECBCP, rather than the SRVM BSP is consulted, as stipulated by the competent authority.

In terms of the SRVM BSP, the majority of the area under assessment is mapped as Critical Biodiversity Area (CBA). Three portions along the north-western, southern and eastern boundaries have been mapped as Ecological Support Area (ESA). The remainder of the area under assessment has been mapped as No Near Natural Area Remaining (NNR) (Map 3.9). The area mapped as CBA reflects the river reach and catchment area of the Wit River, which traverses the site. The ESA is an extension of the mapped CBA area, which represents a functional zone that maintains the natural processes associated with the catchment.

The importance of the vegetation on the area under assessment in maintaining CBAs and ESAs has been assessed by a vegetation, as well as an aquatic specialist during the EIA phase of this assessment (See Chapters Six and Seven).

Map 3.9: The area under assessment (yellow and black outline), which is situated on Portion 2 of Farm 92 Tregaron, known as Sylvania, as mapped in the SRVM Biodiversity Sector Plan mapping resources.

3.3.1.3 Site Observations

The site observations discussed below were informed by the following:

- Site visits undertaken by the EAP on the 11 April 2017 and 24 July 2017; and
- Preliminary input from specialists.

Although portions of Sylvania are under citrus cultivation, there are no agricultural activities taking place on the area under assessment. However, the eastern boundary of the area under assessment is adjacent to existing citrus orchards. A trench, with a depth of ~2m, has been dug along the entire eastern boundary of the area under assessment, in order to keep roaming animals away from the existing citrus orchards on the eastern portion of Sylvania (Photo 3.1). The Wit River runs along the eastern boundary of the area under assessment. An existing low-level crossing, towards the southern boundary, is proposed to be utilised to access the proposed agricultural development (Photo 3.2). At the time of the site visit, no water was flowing in the Wit River in the vicinity of the existing low-level crossing.

In a southern portion of the area under assessment is the remains of a few old houses and a graveyard. In addition, it would appear that some subsistence agriculture has taken place in the surrounding area due to the modification of the landscape in this portion of the site.

Vegetation on site and levels of degradation

The site visit and input from specialists indicated that the condition of the vegetation on Sylvania is a combination of near-natural, degraded, to reversibly and irreversibly modified vegetation cover, which includes a combination of Thicket (Sundays Spekboom Thicket) on the higher contours and Azonal Vegetation (Albany Alluvial Vegetation) on the lower floodplain areas.

The southwestern portion of the area under assessment has been irreversibly modified due to a previous settlement area comprised of early farmhouses and old kraals. The area was most likely historically utilised for subsistence agriculture. Browsing by goats was evident around the settlement area. Additionally, the area surrounding the irrigation canal, including associated vehicle access tracks and paths have resulted in irreversibly modified areas, including where the canal has been installed underground. Livestock grazing was apparent surrounding the irrigation canal, as well as on the floodplain areas, resulting in reversibly modified areas (Photo 3.3). Those areas furthest away from the irreversibly modified areas and on the slopes, were in a better condition, with low degradation levels.

Buildings and structures on site

A settlement area comprising of early farmhouses, numerous modern refuse piles, several dilapidated and ruined cinderblock buildings, some with adjacent reed and daub structures, as well as the remains of many old kraal structures, were noted towards the southwestern boundary of the area under assessment. A single, recent residence, currently occupied by the site caretaker, was sighted in the vicinity. This is the only structure that is not ruined. Additionally, a graveyard ranging from formal, enclosed graves, to informal stone-packed burial mounds, was observed in the area (Photo 3.1, 3.4 and 3.5).

Concluding Remarks

These on-site findings supplement the information obtained from the various conservation and planning frameworks consulted above. These findings have been assessed by the relevant specialists (vegetation, aquatic, heritage) during the EIA phase of the assessment. Suitable

recommendations (e.g. aquatic buffers, biodiversity target areas, heritage buffer areas) have been made for the incorporation of the requirements of the relevant conservation planning frameworks and legislation into the development.

Photo 3.1: Looking towards the western boundary of the area under assessment: the trench that has been dug along the eastern boundary of the area under assessment. Ruined buildings can be seen in the background.

Photo 3.2: Existing low-level crossing of the Wit River proposed to be utilised in order to access the proposed development area.

Photo 3.3: Example of reversibly modified areas by livestock browsing, north of the area where the canal has been installed underground.

Photo 3.4: Example of irreversibly modified areas and ruined buildings associated with the historical settlement area.

Photo 3.5: Portions of the graveyard associated with the settlement area.

3.3.1.4 Fauna

A formal faunal investigation did not take place during the initial site visits. However, no animals were observed on site, during the site visit. It is anticipated that the vegetation on site provides habitat to several small to medium mammal, reptilian and amphibian species. As indicated in Section 3.3.1.3 above, there are indications of livestock grazing and browsing in the vicinity of the settlement area, as well as in the area surrounding the irrigation canal. The site is likely also frequented by a variety of avifaunal species. The Addo Flightless Dung Beetle (*Circellium bacchus*) which is endemic to the region is anticipated to occur on the site.

The Ecological Specialist Assessment (See Chapter Six) forming part of the EIA phase of the assessment, has considered the potential occurrence of Rare and Endangered fauna on the site within the context of the type and extent of faunal habitat on the site.

3.3.2 Physical

3.3.2.1 Climate

The Sundays River Valley is characterised by harsh climate conditions, with summer temperatures rising in excess of 40°C. The monthly distribution of average daily maximum temperatures ranges from 21.9°C (July) to 29.2°C during summer (February). The region is the coldest during July, with average night time temperatures of 5.2°C.

Rainfall for the area is overall low, between 250-500mm annually, and spread throughout the year. Kirkwood, the closest town to Sylvania, receives ~315mm of rain per year. Lowest rainfall occurs during the winter, specifically in July (13mm), and the highest rainfall during autumn, particularly in March (44mm).

3.3.2.2 Geohydrology and Surface Water

The preliminary site visit and review of the relevant aerial imagery, as well as the NFEPA planning framework for the area under assessment, have assisted in the identification of aquatic resources on Sylvania.

A single artificial, bermed dam is located within the area under assessment. An additional six dams, of which one is an irrigation dam and the other a potable water supply dam, were identified, which fell within 500m of the area under assessment. The Wit River, associated riparian floodplain and a tributary, flows through Sylvania, and along the eastern boundary of the potential agricultural development area. Two natural drainage areas or surface water run-off areas, were digitized for this assessment.

The observations and findings have been confirmed by an aquatic specialist during the EIA phase of the assessment (See Chapter Seven).

3.3.2.3 Geology and Topography

Geology

In terms of the Fossil Sensitivity Map compiled by the South African Heritage Resources Agency (http://www.sahra.org.za/map/palaeo Accessed July 2017), the fossil sensitivity on the majority of Sylvania is Moderate (towards the centre) to High (towards the eastern and western boundaries) and largely underlain by the Kirkwood Formation comprising non-marine, fluvial to estuarine mudstone and sandstone sediments of the Early Cretaceous age (Almond 2012, NID 136578)

(Map 3.10). These deposits may contain important examples of Mesozoic land plants (ferns, cycads, conifers etc.) and fossil bones, including large and small dinosaurs, as well as non-marine, and occasional marine, molluscs. There are also isolated patches of Pliocene Kudus Kloof alluvial terrace gravels which, may contain peats, palynomorphs (pollens, spores) and other microfossils, as well as the bones and teeth of mammals and other fauna (Almond 2016, NID 374576).

Despite this potentially high fossil sensitivity, local conditions and previous assessments suggest a low probability of fossil finds. The Kudu's Kloof Formation in this region would appear not to yield significant fossil material (Almond 2016, NID 374576). Furthermore, the nature of the proposed agricultural development is unlikely to result in deep excavations into bedrock.

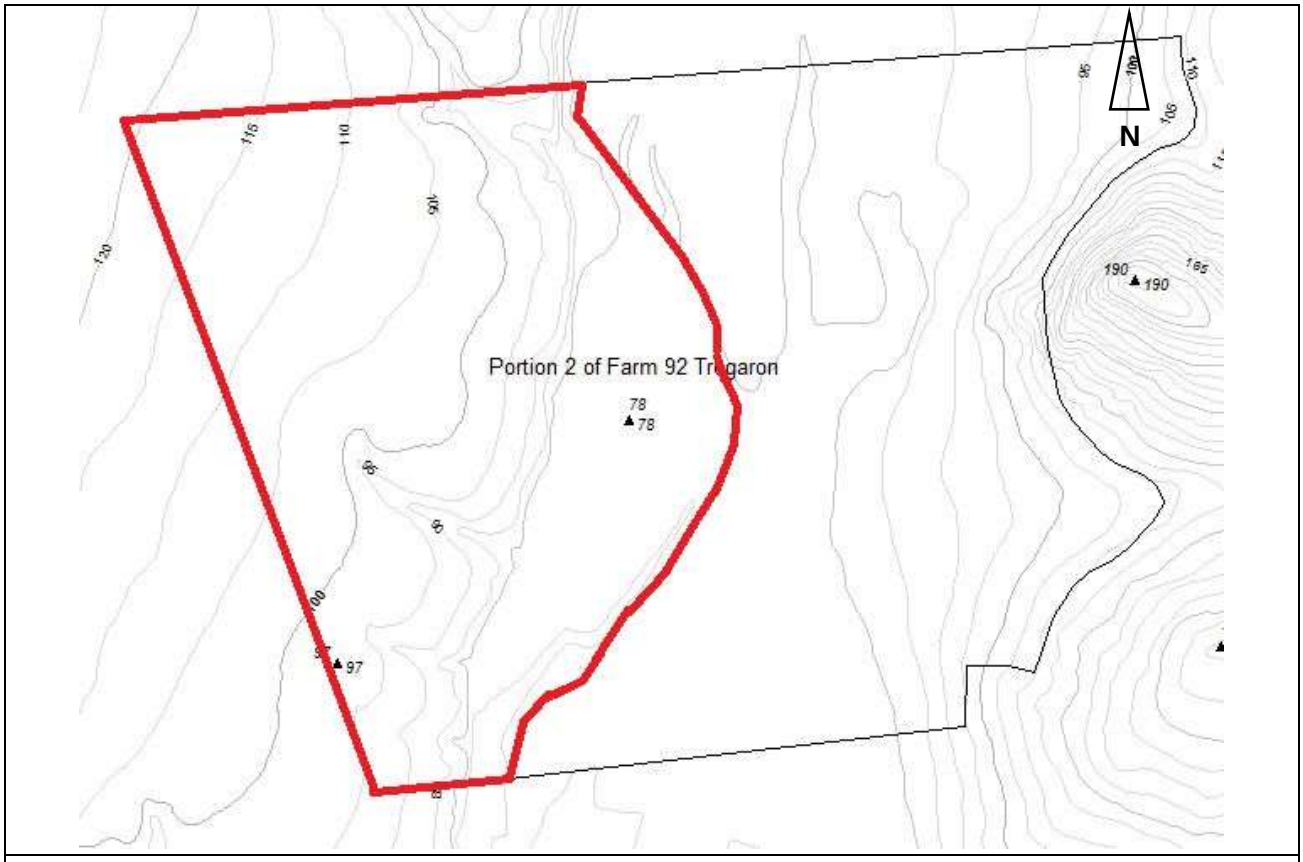
A paleontological specialist has determined the likelihood of the occurrence of substantial fossil deposits on Sylvania, as well as the potential impacts of the proposed agricultural development on such deposits, during the EIA phase of this assessment (See Chapter 10).

Map 3.10: Fossil Sensitivity of Portion 2 of Farm 92 Tregaron, as given by the SAHRA mapping software.

Colour	Sensitivity	Required Action
RED/PINK	VERY HIGH	field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	desktop study is required
BLUE	LOW	no palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	no palaeontological studies are required
WHITE/CLEAR	UNKNOWN	these areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

Topography

The topography of the area under assessment gently grades from the higher lying plateaus (120m – 100m) towards the Wit River floodplain, where very steep inclines (85m – 80m) occur in places (Map 3.11).



Map 3.11: Contour map (5m contour intervals) showing topography of Portion 2 of Farm 92 Tregaron and the area under assessment (red outline).

3.3.2.4 Agricultural Potential

The Agricultural Geo-Referenced Information System (AGIS, accessed from www.agis.agric.za July 2017) mapping resources were used to obtain information on the Land Capability of Sylvania and the area under assessment. The area under assessment is divided between Land Capability Class II (Order A: Arable land) and VII (Order C: Grazing and forestry land) (Map 3.12). Land Capability Classification takes into consideration the terrain, soil conditions and climate in the area.

Land in Class II is classed as high potential land with some limitations (based on desktop level data), that may reduce the choice of plants or require moderate conservation practices. It is considered suitable for moderate to intensive crop cultivation. Limitations are few and include gentle slopes, moderate susceptibility to wind and water erosion, less than ideal soil depth, and occasional damaging flooding.

Land in Class VII is classed as grazing and forestry land with severe limitations that makes it unsuited to cultivation and that restrict its use largely to grazing, woodland or wildlife (based on desktop level data). Some restrictions include steep slopes, erosion hazard, shallow or wet soils, and salts or sodicity of soils. Physical conditions may not be conducive to improvement by seeding, liming and fertilizing. In unusual instances, some occurrences may be used for special crops under unusual management practices.

Given that the Land Capability Mapping was done on a landscape scale, the suitability of the soils for cultivation has been verified by an actual soil analysis. The EIA phase of the assessment includes a Reconnaissance Soil Survey which has assessed the agricultural potential of the soils on the area under assessment for the establishment of citrus (See Chapter Nine of this report).

Map 3.12: The area under assessment (yellow and black outline), which is situated on Portion 2 of Farm 92 Tregaron, known as Sylvania, showing the Agricultural Land Capability of the site (AGIS, 2007, www.agis.agric.za).

3.3.3 Heritage and Cultural

Certain cultural and heritage resources are protected under the National Heritage Resources Act, No 25 of 1999. These may include structures older than 60 years; archaeological and palaeontological sites and materials, and meteorites; certain burial grounds and graves; declared heritage objects; and declared heritage sites.

Associated with the settlement area previously mentioned under Section 3.3.1.3, was a graveyard with recent gravestones (~10 years old; Photo 3.5). Preliminary specialist input has recommended a no-go buffer area around the graveyard. Additionally, the remaining structures associated with the settlement area are deemed to be of low archaeological sensitivity and cultural significance. However, during the EIA phase of the assessment, these areas should be surveyed for the presence of any material which might be of archaeological importance (Phase 1 Archaeological Assessment), or which may have potential impacts on the development.

A Heritage Screening Assessment undertaken for the site, assessed the palaeontological sensitivity of the rock formations anticipated to occur on the site and has determined a desktop study of the palaeontological sensitivity of the site is sufficient for the EIA Phase of the assessment. A Phase 1 Palaeontological Impact Assessment is not required (See Chapter 10).

3.3.4 Socio-economic (Social and Economic)

The nearest town to Sylvania is Kirkwood, in the Sundays River Valley Local Municipality (SRVM). However, local labour is sourced from both the SRVM, as well as the Nelson Mandela Bay Municipality (NMBM), therefore, socio-economic data for both municipalities has been considered here.

The Final Integrated Development Plan (IDP 2015/ 2016) for the SRVM indicates that the current unemployment rate in the municipal area is as high as 38.54%. The Agricultural Sector, being one of the top five employment sectors in the SRVM, provides room for growth in terms of employment opportunities, as it currently represents ~11% of the employment for the SRVM area. (Final SRVM IDP 2015/2016; Figure 3.1).

The NMBM Integrated Development Plan 2011-2016 (14th Edition, 2015/ 2016 Financial Year) highlights some of the key socio-economic challenges in the NMBM and lists unemployment and poverty among them. Some of the reasons cited in the NMBM IDP (2015/ 2016) for the low economic growth experienced in the NMBM (3% per annum) are the high unemployment and dependency ratios (unemployment rate 36.3%). However, as with the rest of South Africa, the NMBM is undergoing a youth bulge, with ~35% of the population between the ages of 10-29 years. A positive outcome of such a youth bulge is demographic dividends, which, given gainful employment, can be used for poverty reduction and economic growth.

The nearby communities associated with the town Kirkwood in the SRVM, as well as the greater NMBM area, represent an important labour force in close proximity to the proposed agricultural development. It is anticipated that the proposed agricultural development will result in a number of new permanent and seasonal employment opportunities for the local community.

No specialist socio-economic assessment is proposed for the EIA phase of the assessment.

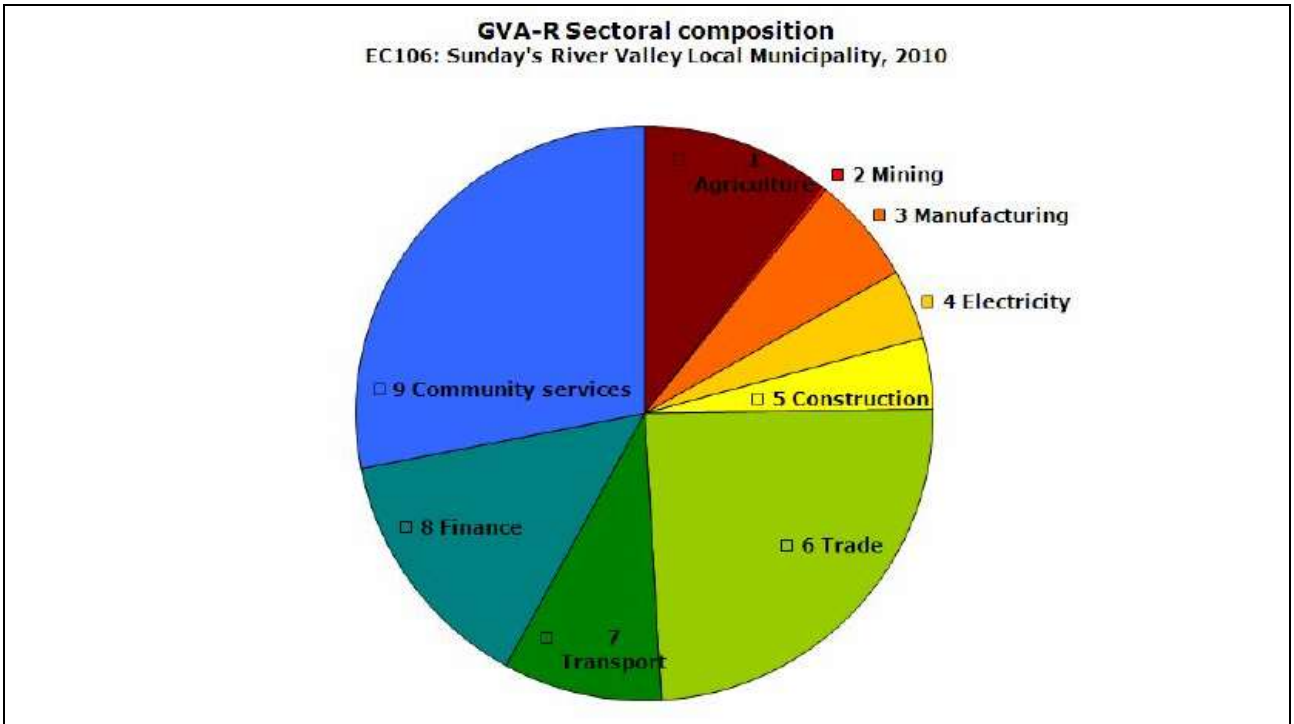


Figure 3.1: Breakdown of the Employment Sector for the Sundays River Valley Municipality (Final SRVM IDP 2015/2016).

3.4 CONCLUSIONS AND RECOMMENDATIONS

Key issues identified which have required specialist assessment in the EIA phase of the assessment, are:

- Biophysical (Biological and Physical) site assessment including:
  - Potential project related impacts on natural vegetation and faunal habitat associated with the area under assessment;
  - The consideration of any potential impacts on the Addo Elephant National Park;
  - An aquatic survey to identify and map wetlands and watercourses associated with the area under assessment;
  - Assigning suitable buffers for aquatic resources identified on the area under assessment;
  - Providing comment on the potential impact of the proposed development on Aquatic and Terrestrial CBAs, as identified in the ECBCP;
  - The determination of suitable buffers associated with meeting biodiversity conservation targets specific to the vegetation types associated with the area under assessment, and in line with those targets indicated by the relevant planning frameworks for the area.
- A Heritage Screener was conducted in order to establish the need for further heritage assessments (archaeological and paleontological impact assessments) to be undertaken for the area under assessment.
  - The Heritage Screener did not identify the need for a Phase 1 Palaeontological Impact Assessment to be undertaken, and thus the Heritage Screener is considered a sufficient Desktop Paleontological Impact Assessment;
  - A Phase 1 Archaeological Impact Assessment was undertaken;
  - Recommendations with regards to a suitable buffer, no-go area, around the grave yard on the site.
- A Traffic Impact Assessment was undertaken.
- A Soil Suitability Assessment in the form of a Reconnaissance Soil Survey has been conducted to determine the suitability of the soil for the establishment of citrus orchards.