Agri Informatics
Land Capability & Agro-Ecosystem Intelligence

VALSCHRIVIER

ENVIRONMENTAL AUTHORISATION FOR THE CONSTRUCTION OF A DAM AND THE CLEARANCE OF INDIGENOUS VEGETATION FOR CULTIVATION

SITE SENSITIVITY VERIFICATION AND AGRICULTURAL COMPLIANCE STATEMENT

FINAL DRAFT

DATE: 09 July 2026

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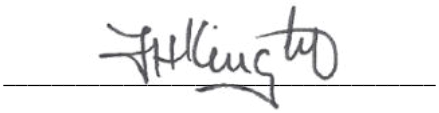
Better Land Decisions. Sustainable Futures.

Reg. No.: 2026/425235/07

Site Sensitivity Verification and Agricultural Compliance Statement for the proposed construction of a dam and the clearance of indigenous vegetation for cultivation on **Portion 3 of farm Aan de Valsch Rivier 186 and farm Horeb 149, Riversdale Regional Division** (in this report also referred to as "Valschrivier" or the "study area") in the Western Cape of South Africa.

Report prepared by: **Agri Informatics (Pty) Ltd**

Francois Knight M.Sc.Agric.
Pr.Sci.Nat.: Soil and Agricultural Science



Date submitted: **09 July 2026**

Indemnity

The information contained in this report and the digital data provided, were compiled using the best available information, knowledge, technology and experience. Great effort was made to ensure the highest levels of accuracy possible. However, Agri Informatics Development Trust or any individual or any other company who have contributed towards the compilation of this information cannot be held responsible for any loss or damage incurred as a direct or indirect result of the use thereof. All recommendations were made in good will, but the risks associated with the implementation thereof, resides with the implementor.

Qualifications and Experience of the Specialist

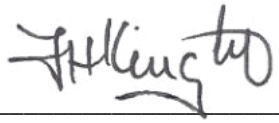
This report was compiled by François H Knight, principal consultant at Agri Informatics. Mr. Knight holds a B.Sc.Agric.Hons. degree in Soil Science from the Free State University, a post graduate diploma in Terrain Evaluation from Potchefstroom University and a M.Sc.Agric. cum laude degree in Soil Science from the University of Stellenbosch. He has more than 36 years' experience in natural agricultural resource assessments, which stems from his work as a senior researcher at the Department of Agriculture and, for the past 24 years, as an independent consultant.

Mr. Knight is the author or co-author of fifteen scientific papers, congress papers or academic reports. A *curriculum vitae* of Mr. Knight is attached in the Appendix.

Declaration of the Specialist

I, François H Knight, as the appointed Specialist hereby declare/affirm that:

- I act as the independent specialist in this application
- I am aware of the procedures and requirements for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the National Environmental Management Act (NEMA), 1998, as amended, when applying for environmental authorisation which were promulgated in Government Notice No. 320 of 20 March 2020 (i.e. "the Protocols") and in Government Notice No. 1150 of 30 October 2020.
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing –
    - any decision to be taken with respect to the application by the competent authority; and;
    - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 48 and is punishable in terms of section 24F of the NEMA Act.



09 July 2026

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This report was prepared according to the assessment protocol and minimum report content requirements for a Site Sensitivity Verification and an Agricultural Compliance Statement (as per Government Notice 320 published in the Government Gazette 43110, dated 20 March 2020). The following Table presents a cross reference to the prescribed reporting protocol.

Site Sensitivity Verification

Requirement	Report Reference
Map of Development Footprint on Agricultural Sensitivity Map from Screening Tool	Figures 4 & 5
Results of Desktop Assessment	Para. 4.3
Results of Site Visit	Para. 4.4
Confirm or dispute the current land use and sensitivity as identified by the Screening Tool	Para. 4.5

Agricultural Compliance Statement

Requirement	Report Reference
Provide a map showing the proposed development footprint (including supporting infrastructure) with a 50 m buffered development envelope, overlaid on the agricultural sensitivity map generated by the screening tool.	Para. 5.1
Confirmation that the development footprint is in line with the allowable development limits contained in Table 1 of the Protocol.	N/A
Confirmation from the specialist that all reasonable measures have been taken through micro-siting to avoid or minimize fragmentation and disturbance of agricultural activities.	N/A
A substantiated statement from the soil scientist or agricultural specialist with regards to agricultural resources on the acceptability, or not, of the proposed development and a recommendation on the approval, or not, of the proposed development.	Para. 5.4.1
Any conditions to which this statement is subjected.	Para. 5.4.2
Where identified, proposed impact management outcomes or any monitoring requirements for inclusion in the Environmental Management Programme (EMPr).	Para. 5.4.3
A description of the assumptions made and any uncertainties or gaps in knowledge or data.	Para. 5.5

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1. Introduction

The owners of two farm portions in the Riversdale district of the Western Cape - **Sion Capital (Pty) Ltd** and **Versnel Konstruksie CC**, proposes the construction of a dam and the expansion of cultivation on these land portions (Figure 1). Both these proposed developments trigger listed activities under NEMA (National Environmental Management Act EIA Regulations 2014 - as amended), while the clearance of indigenous vegetation will also require consent in terms of CARA (The Conservation of Agricultural Resources Act, Act 43 of 1983). The findings of this Site Sensitivity Verification and Agricultural Compliance Statement are presented as part of the Environmental Authorisation (EA) Application, while the application in terms of CARA will be submitted separately.

2. Terms of Reference

The procedure for the study, being a contribution to the environmental authorisation process (NEMA EIA Regulations 2014 - as amended) is guided by the Protocol for the Specialist Assessment and minimum report content requirements for Environmental Impacts on Agricultural Resources, as published in Government Notice No 320 (March 2020).

This Protocol makes use of the web-based Environmental Screening Tool of DFFE, which identifies the general agricultural sensitivity of the study area and then prescribes either an Agricultural Agro-Ecosystem Specialist Assessment (for areas with High or Very High sensitivity) or an Agricultural Compliance Statement for areas with Medium or Low sensitivity, to be conducted by a SACNASP registered soil or agricultural scientist.

The first step is to conduct a Site Sensitivity Verification (SSV) through the use of:

a) a desktop analysis, using satellite imagery;
b) a preliminary on-site inspection; and
c) any other available and relevant information.

The outcome of the Site Sensitivity Verification will:

a) Assess the current/recent use of the land and confirm or dispute the environmental (agricultural) sensitivity as identified by the screening tool;
b) contain a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity; and
c) be submitted together with the relevant assessment report prepared in accordance with the requirements of the Environmental Impact Assessment Regulation

Agri Informatics was requested by PHS Consulting, the lead consultant for the Applicant, to conduct an Agricultural Site Sensitivity Verification of the land and subsequently an Agricultural Compliance Statement.

The assessment had to include:

- An Assessment of the Agricultural Sensitivity of the site, based on a Site Visit and Desktop Study
- Confirmation or Dispute of the Agricultural Sensitivity as presented by the DFFE Screening Tool
- A substantiated statement with regards to the acceptability, or not, of the proposed development
- Description of the conditions to which the statement is subjected
- Monitoring and Mitigation Measures to be incorporated in the EMPr
- Presentation of findings in an Agricultural Compliance Statement Report conforming to the reporting guidelines as per Government Notice 320 published in the Government Gazette 43110, dated 20 March 2020.

3. Study Area

3.1 Locality

The study area is situated approximately 20 km northeast of Riversdale, on the foothills of the Langeberge (**Figure 1**).

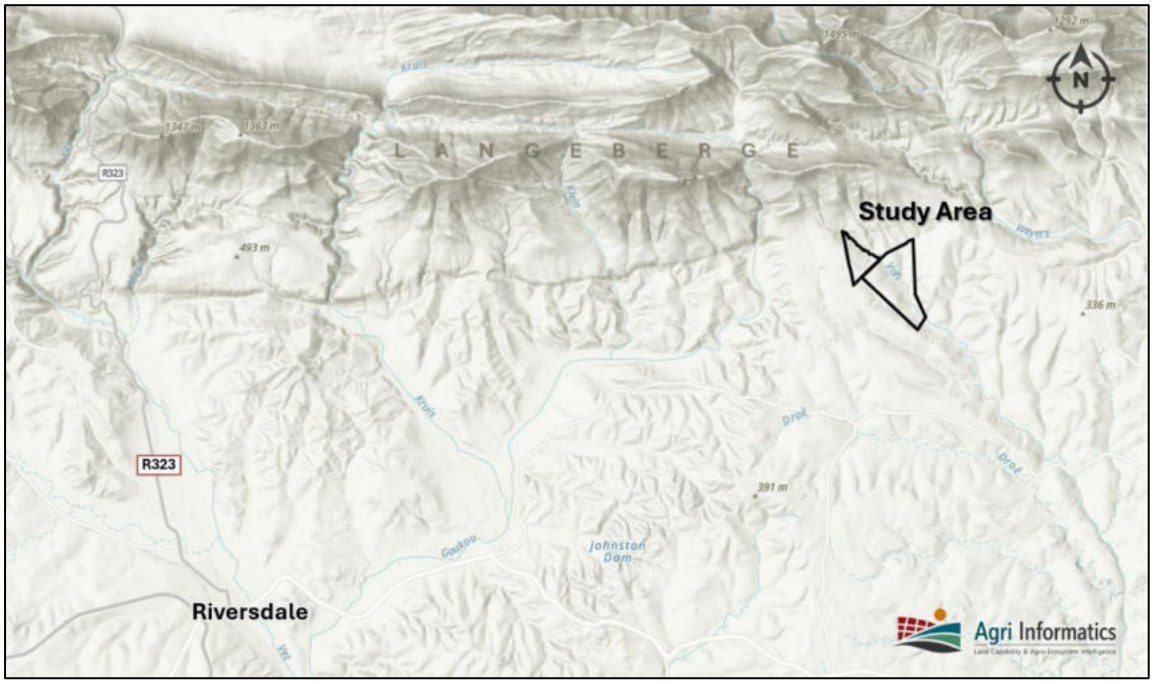

Figure 1: Locality of the study area.

3.2 Land Portions

The study area consists of two farm portions with a combined size of ±244.6 ha, with property details as listed in **Table 1** and shown in **Figure 2**.

Figure 2: The land portions of the study area. (See table 1)

Table 1: Cadastral units (properties) affected by the proposed development (Windeed).

ID	Property Description	Division	Property Ownership	Title Deed	Extent (ha)
1	RE of Farm 149	Riversdale RD	Versnel Konstruksie CC	T39837/2021	66.9651
2	Ptn 3 of Farm 186 Aan de Valsch Rivier	Riversdale RD	Sion Capital Pty Ltd	T14981/2022	177.6847h
TOTAL					**244.6498**

4. Site Sensitivity Verification

The following facts are presented in fulfilment of the minimum reporting requirements for a Site Sensitivity Verification (as per Government Notice 320, published in the Government Gazette 43110, dated 20 March 2020).

4.1 Screening Tool

The web-based Environmental Screening Tool of the Department of Forestry, Fisheries and Environment (DFFE), indicates the agricultural sensitivity for the study area as Very High for Portion 3/186 and varying between Low, Medium or High for RE/149 (**Figure 3**).

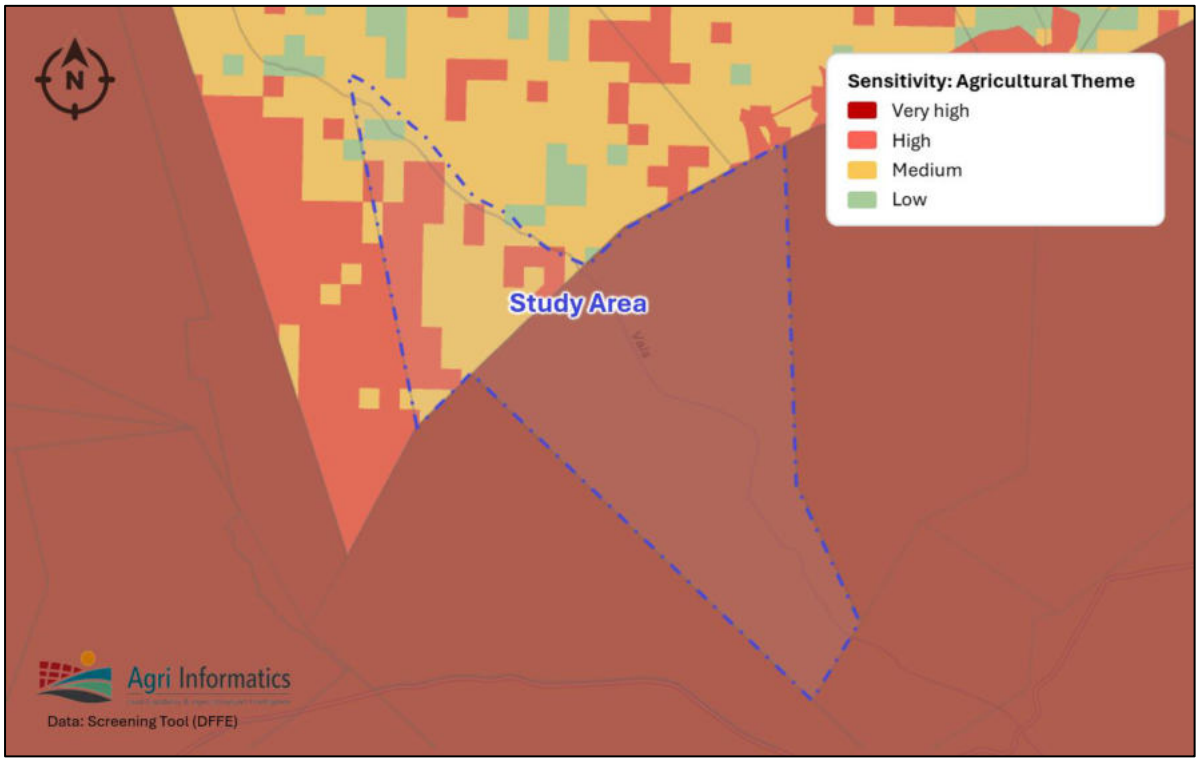

Figure 3: Agricultural Sensitivity as indicated by the Screening Tool of DFFE.

The Very High indicated sensitivity stems from the inclusion of Portion 3/186 in the Herbertsdale-Gouritsmond Protected Agricultural Area, demarcated in terms of the Preservation and Development of Agricultural Land Act (PDALA, Act 39 of 2024).

The purpose of the Screening Tool is to provide a first approximation of the sensitivity of the site and guide the reporting protocol (see paragraph 2). The agricultural sensitivity as per the Screening Tool, relates to the capacity of the receiving environment to accommodate the proposed development, where the development necessitates a change in land use away from agriculture (or forestry). This application however, proposes **expansion and intensification of agricultural land use** and thus the Screening Tool and Reporting Protocol is rather irrelevant. For that reason, the reporting protocol below, loosely follows the protocol as prescribed for a Site Sensitivity Verification and Agricultural Compliance Statement, rather than an Agricultural Agro-Ecosystem Assessment which would have been required for a development which results in a reduction in agricultural activity or resources.

4.2 Proposed Activities

4.2.1 Dam construction

Three possible dam sites have been identified along the relatively flat ridge area on Portion 3 of Farm 186, as shown below. The dam footprints are all below 2 ha.

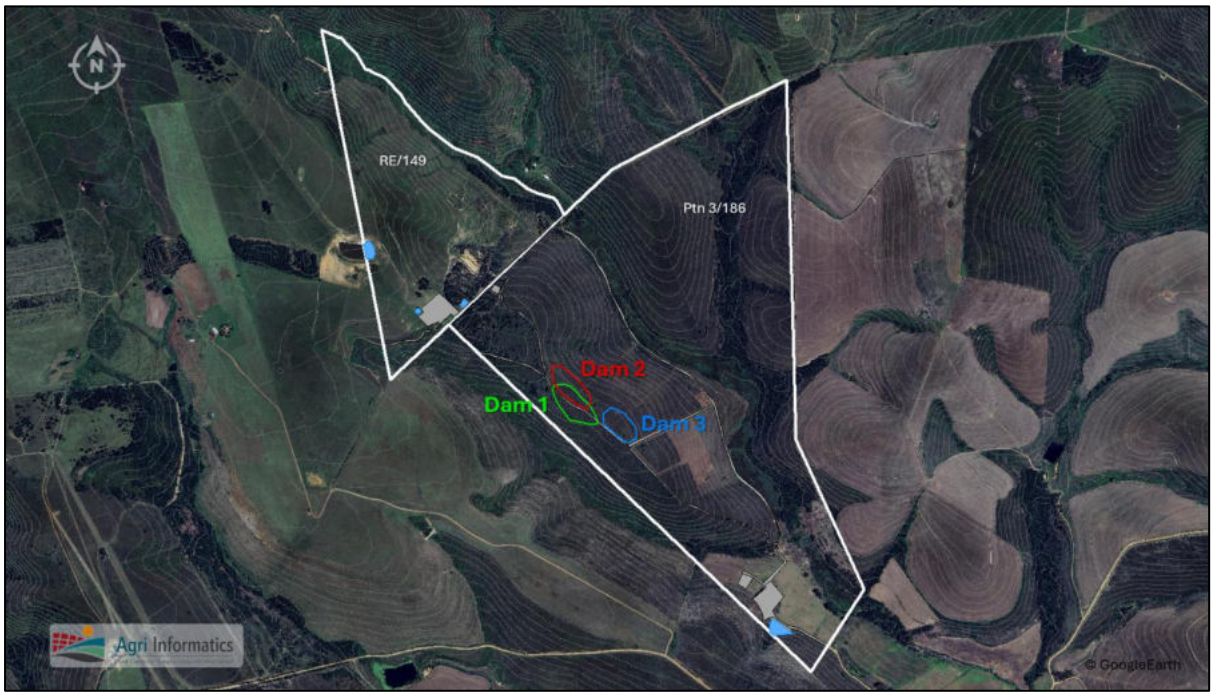

Figure 4: Proposed dam positions on Ptn3/186.

4.2.2 New Fields and Orchards

A total of approximately 52.5 ha of new fields or orchards are proposed. While some a situated on previously cultivated areas, none has been cultivated during the past ten years.

Table 2: Proposed new orchards or fields.

Field Nr	Area (±)	Proposed crops	Irrigated	Current State
1	7.0 ha	Pasture	Dry land	Old pasture
2	8.0 ha	Pasture	Dry land	Old pasture
3	11.5 ha	Avocado	Irrigated	Indigenous vegetation
4	20.0 ha	Avocado or other orchard or cash crop	Irrigated	Indigenous vegetation
5	6.0 ha	Cash crop	Dry land	Old pasture/Aliens

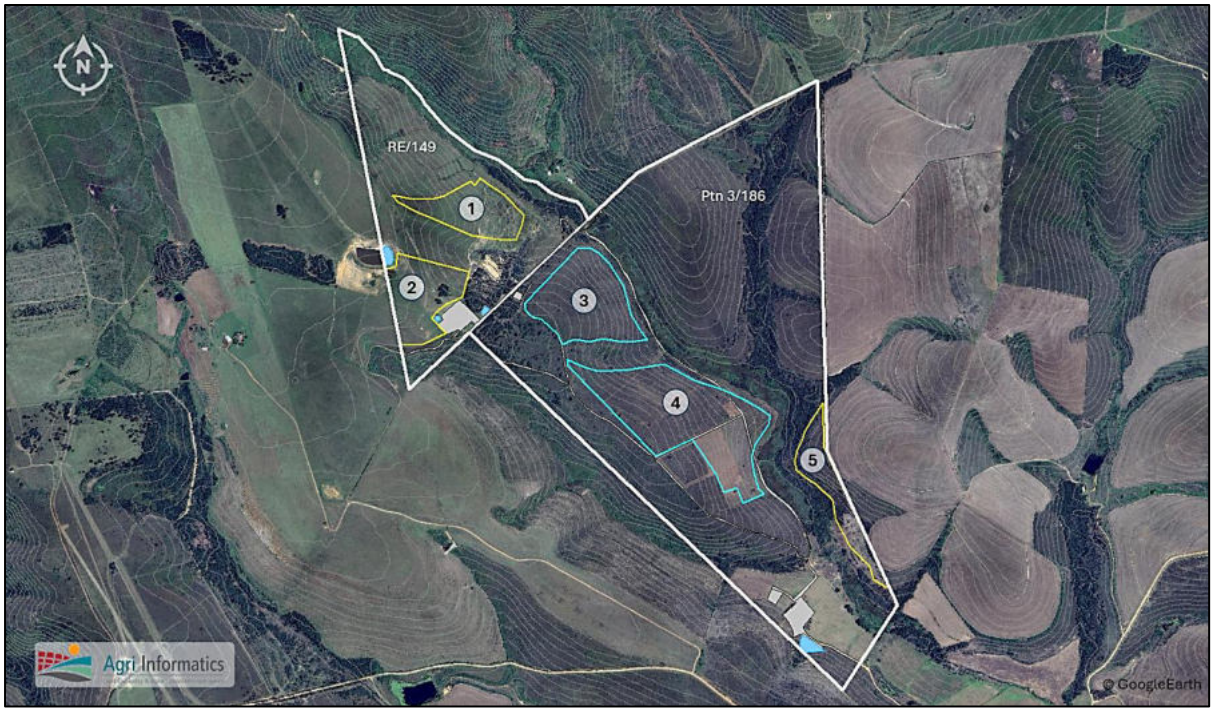

Figure 5: Layout of proposed new fields and orchards.

4.3 Desktop Assessment

4.3.1 Satellite Imagery

A series of satellite imagery, spanning more than two decades, did not confirm any active cultivation (i.e. mechanical disturbance of the soil surface), other than the fields below the homestead near the entrance to Ptn 3 / 186 in the south of the study area. Signs of brush cutting are however visible in all the areas proposed for new fields/orchards.

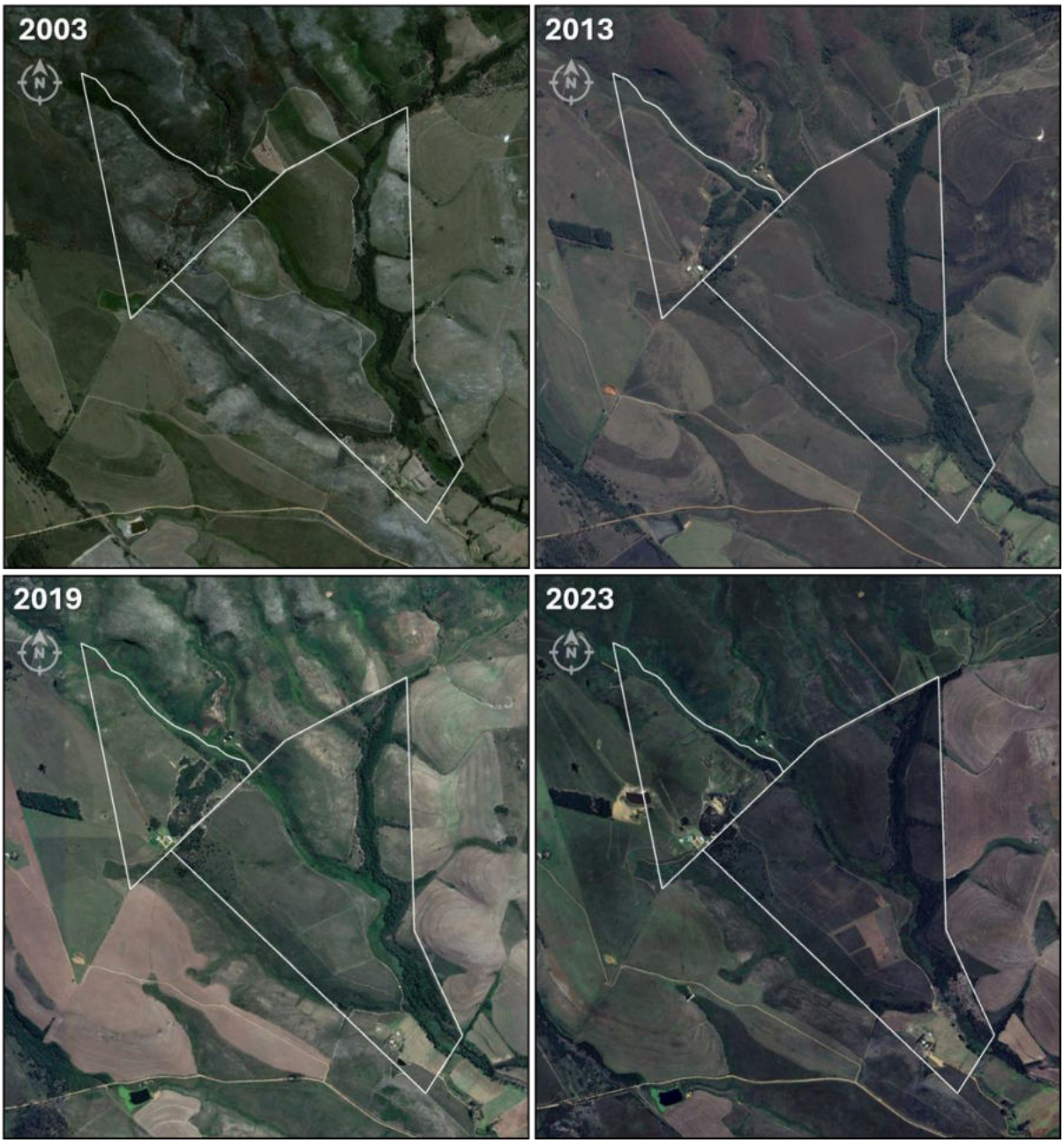

Figure 6: Satellite imagery spanning two decades, since 2003 (GoogleEarth).

4.3.2 Terrain & Hydrology

An elevation model – compiled from Copernicus data – was used to conduct a slope gradient analysis.

The terrain is undulating and contains crests, mid slopes, foot slopes and valley floor terrain units. The Vals River (originally Valschrivier) is a perennial stream originating in the Langeberge, flows from north to south through Ptn 3/186 and forms the eastern boundary

of RE/149. Smaller non-perennial side streams drain the surrounding hills. The incisions of the river and streams are deep in places, resulting in steep side slopes.

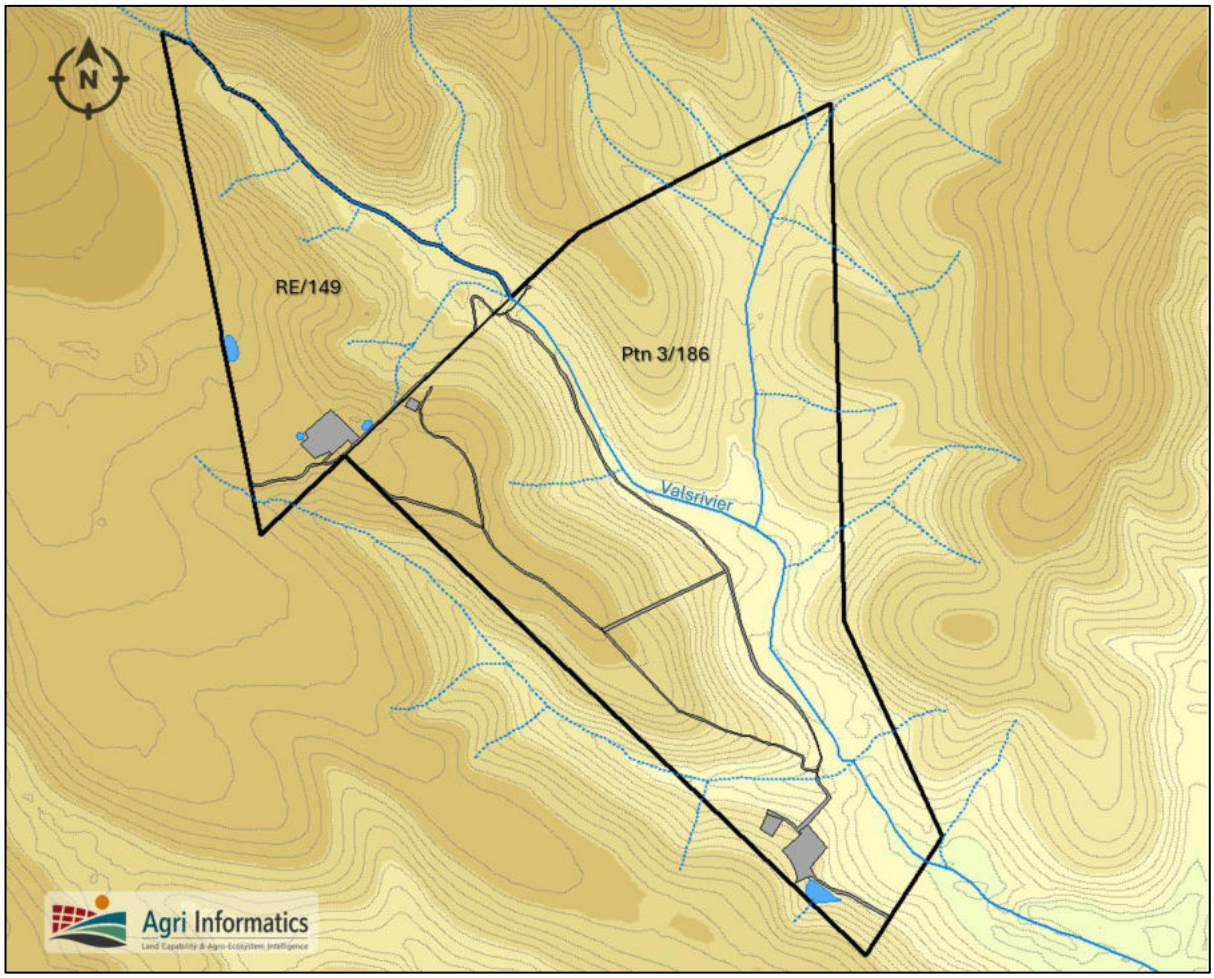

Figure 7: Elevation model, compiled from Copernicus 30 x 30 m gridded data, with generated contours at 5 m intervals.

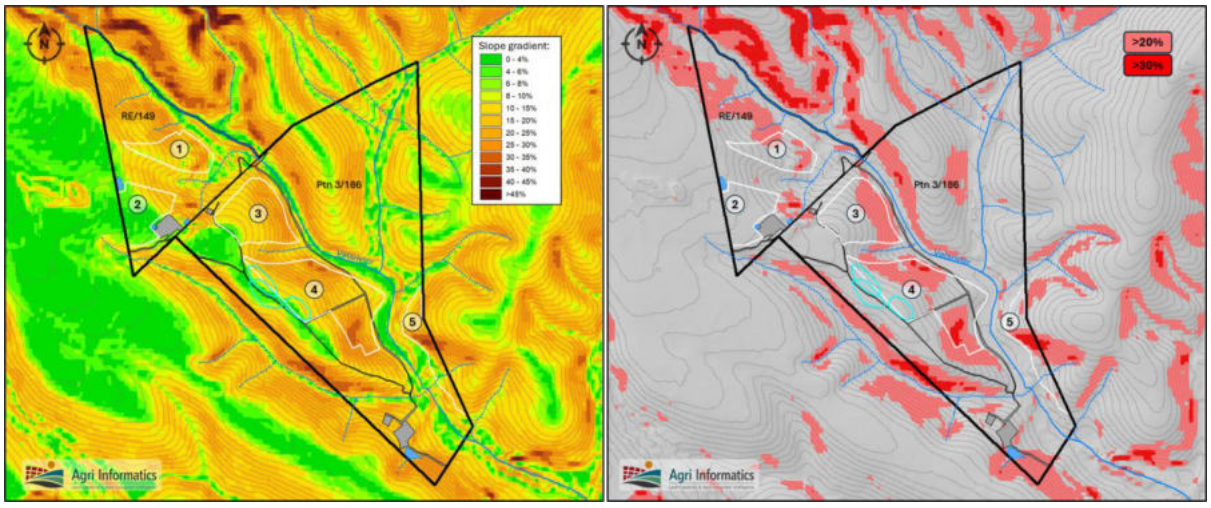

Figure 8: Slope gradient map (left) and steep slopes map (right). Also see map in Appendix.

Slope gradients of more than 20% do occur and coincides with all of the new areas proposed for cultivation, except for Field Nr 2 (see enlarged map in the appendix).

Table 3: Impact of slope gradient on cultivation activities.

Slope gradient	Typical interpretation of suitability for cultivation
0–8%	Generally suitable for cultivation with normal conservation practices
8–12%	Requires carefully designed contours and erosion control
12–20%	Increasingly restrictive; high erosion risk
>20%	Usually considered unsuitable for conventional cultivation unless exceptional conservation measures are implemented
>30%	Normally regarded as very high erosion hazard; cultivation strongly discouraged

4.3.3 Agro-Climatology

Köppen-Geiger

The study area has a Köppen-Geiger climate classification of BSk.

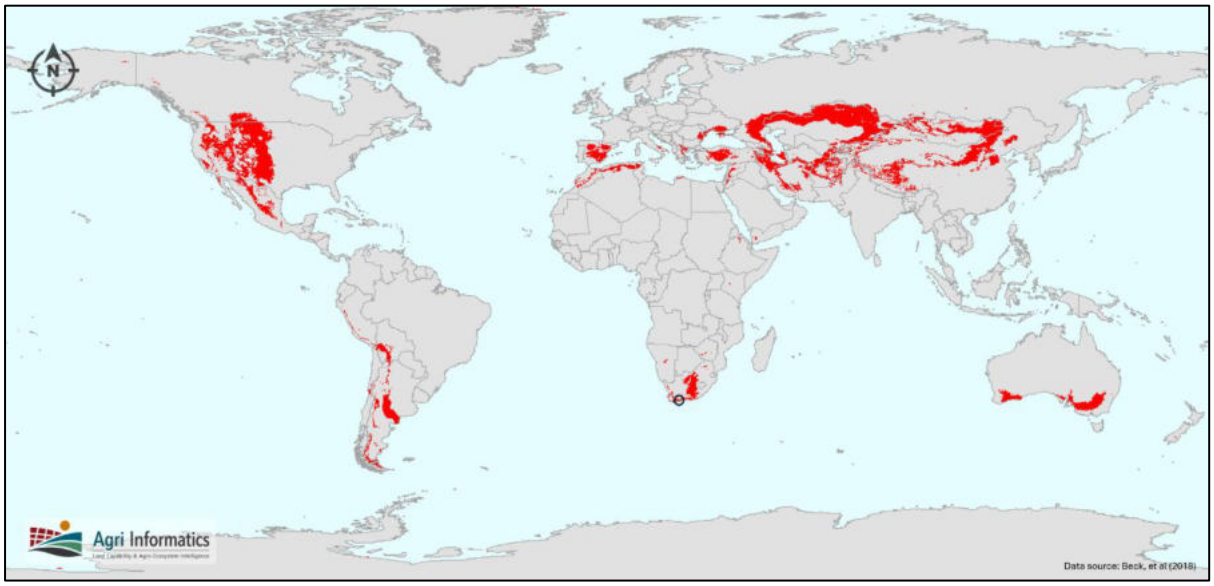

Figure 9: Köppen-Geiger BSk climate zones of the world (Data source: Beck, et al, 2018).

The BSk Climate climate zone is a cold semi-arid (steppe) climate characterized by low to moderate annual rainfall that is insufficient to support forests but generally adequate for natural grasslands and sparse shrub vegetation. Mean annual precipitation is typically greater than that of true deserts (BW climates) but remains lower than the level required to balance potential evapotranspiration. The "B" denotes an arid climate, "S" indicates steppe

(semi-arid) conditions, and "k" signifies that the mean annual temperature is below 18°C, with cool to cold winters often experiencing frost and occasionally snowfall.

Summers are generally warm to hot, while rainfall may occur throughout the year or be concentrated in a particular season depending on regional weather systems. BSk climates are commonly found in the interiors of continents and rain-shadow regions, where moisture availability limits agricultural production. Farming in these areas typically relies on drought-tolerant crops, livestock grazing, conservation of soil moisture, and, where available, supplementary irrigation to mitigate periodic drought conditions.

Climate parameters

Table 4: Summary of key climate parameters of the study area (2001-2021) (NASA POWER Climatologies).

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Rel. Humidity %	61	63	66	67	67	68	69	69	68	66	63	62	**66**
Wind Direction °	168	164	170	211	292	304	302	282	245	183	180	174	**208**
Wind Speed Max m/s	13.4	11.2	13.9	13.6	12.3	14.0	14.3	12.6	13.6	11.9	12.8	12.2	**14.3**
Wind Speed Min m/s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	**0.0**
Wind Speed Ave m/s	3.7	3.5	3.1	2.7	2.6	2.8	2.8	2.9	3.0	3.3	3.5	3.7	**3.1**
Rainfall[1] mm	32	34	49	41	46	31	38	44	38	46	44	19	**462**
Mean Temp. °C	22.3	22.3	20.7	17.8	15.2	12.3	11.6	12.5	14.5	16.9	18.8	20.9	**17.1**
Ave. Max.T °C	29.6	29.6	27.6	24.6	21.6	18.5	18.0	19.1	21.4	23.9	25.9	28.1	**24.0**
Ave. Min.T °C	14.9	15.0	13.7	11.1	8.7	6.1	5.2	5.8	7.5	9.9	11.7	13.7	**10.3**
Highest Max. T. °C	44.7	44.3	43.2	39.4	35.4	32.0	30.4	34.7	41.1	40.2	41.6	44.1	**44.7**
Lowest Min. T. °C	9.1	8.2	7.8	4.0	2.2	0.7	-0.1	0.6	1.2	3.0	5.8	6.4	**-0.1**
Frost Days / month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
PAR MJ/m²/day	1.1	0.9	0.8	0.6	0.4	0.4	0.4	0.5	0.7	0.8	1.0	1.1	**0.7**
ET_0[1] mm/month	168	138	123	88	68	54	58	74	95	123	146	169	**1304**

At a median elevation of ±300 m amsl and 80 km from the Indian Ocean coastline, the climate is continental, i.e. mean temperature difference between hottest and coldest month is >10°C, at 10.7°C. Rainfall data indicates an average annual rainfall of 462 mm, of which 224 mm (48%) can be expected during the summer months (Oct – Mar). The average monthly rainfall never exceeds 50 mm/month.

During the warmest months maximum temperatures can reach >40.0°C. The coldest month is July with an average minimum temperature of 5.2°C and the coldest recorded

[1] Data as reported by Schulze & Maharaj, 1997.

temperature of -0.1C. Despite this sub-zero recorded temperature, the site is generally considered to be frost free. The mean annual wind speed is 3.1 m/s (NASA Power, 2022).

Due to the mild winter temperatures the positive chill units, calculated by the Linsey-Noakes model (10°C base temperature) are moderately low at 450 degree-hours (Schulze, 2009).

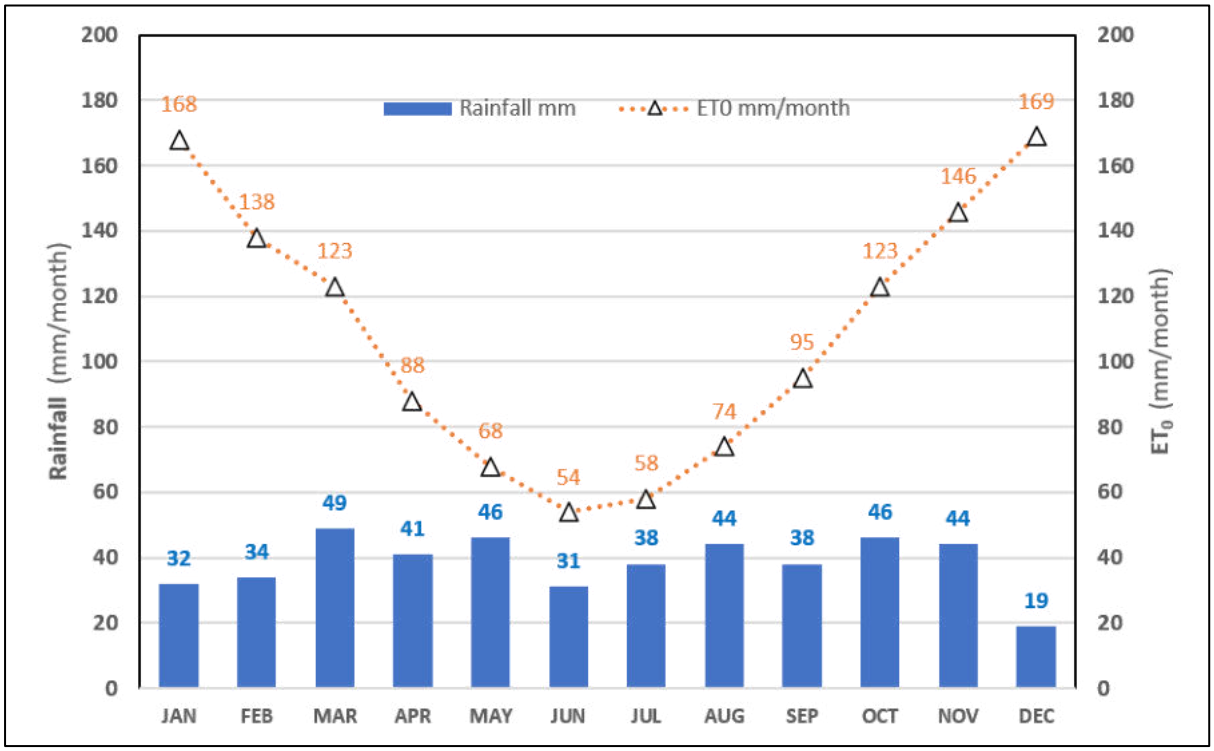

Figure 10: Relationship between monthly rainfall and ET_0 at the study area.

4.3.4 Soils Information

As the Terms of Reference did not include a soil survey of the areas proposed for development, the Land Type data is the best indication of the soil properties that can be expected. Two Land Types occur in the study area, namely Gb21 on the crest areas and Db21 on the mid and foot slopes and valley floor (**Figure 11**). The memoirs of these land types are attached in the Appendix.

Land Type Gb21

Proposed Field 2 and the upper parts of Fields 1, 3 and 4 do occur in this Land Type. The Land Type is characterised by the presence soils with a diagnostic ferrihumic horizon.

The geology is indicated as Tertiary terrace gravel mainly overlying shale of the Bokkeveld Group. The dominant soils on the crest areas of this Land Type is deep (>1100 mm) fine to medium sandy loam soils of the Houwhoek soil from. Subdominant area deep (>900 mm)

fine to medium sandy loam soils of the Clovelley soil from or less deep (<500 mm) fine sandy loam soils of the Sterkspruit soil from. Coarse deposits and rock also do occur.

Land Type Gb21

Proposed Field 5 and the lower parts of Fields 1, 3 and 4 do occur on the mid slopes of this Land Type.

The geology is indicated as shale and siltstone of the Bokkeveld and Witteberg Groups, occasionally overlain by Tertiary silcrete and terrace gravel. The dominant soils on the mid slopes of this Land Type are shallow (<350 mm) clay soils of the Swartland soil from, shallow (<450 mm) fine to medium sandy loam soils of the Glenrosa soil form or medium deep (300 – 600 mm) clay (>60%) soils of the Sterkspruit soil form.

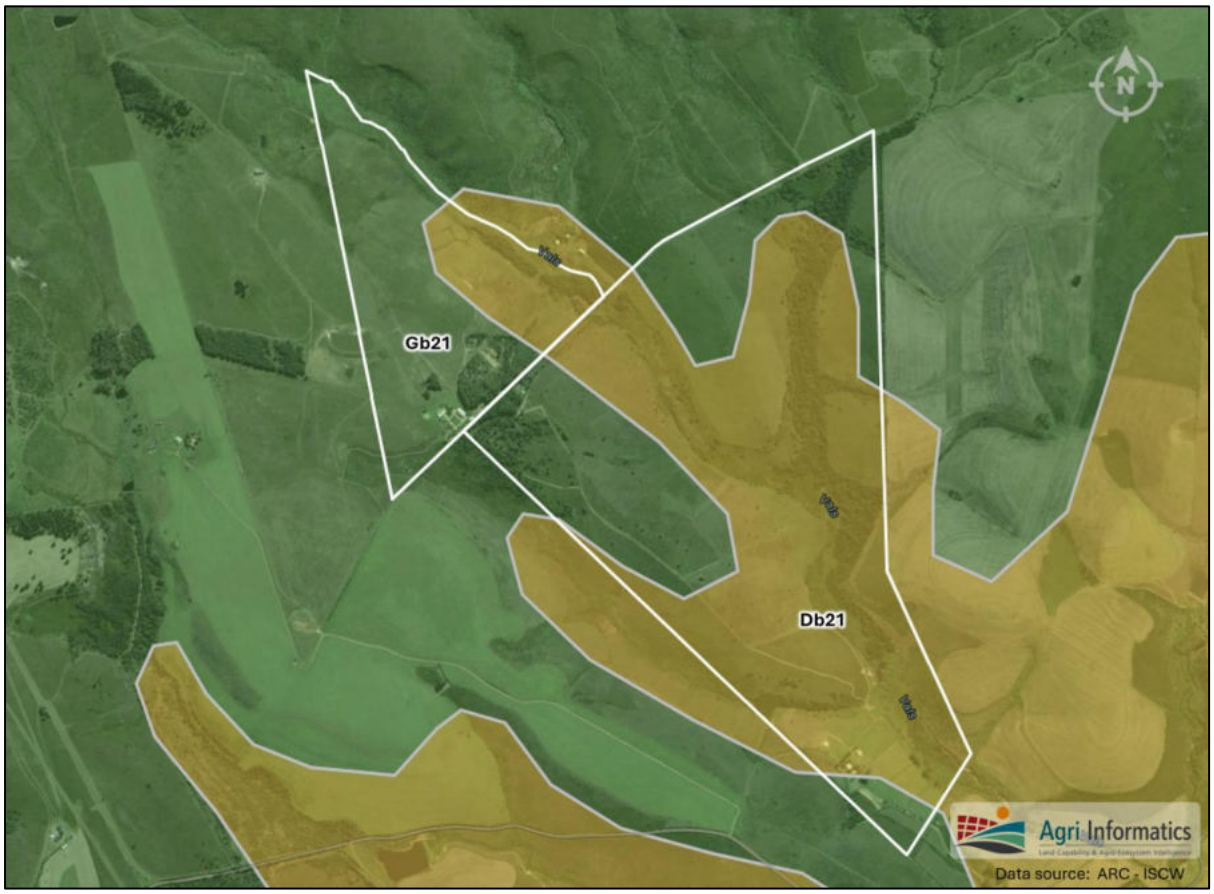

Figure 11: Land Types of the study area (ARC: ISCW).

This information suggests that effective soil depth could be limiting, especially for the lower parts of proposed Fields 3 and 4, where orchard establishment of perennial crops is proposed. Deep soil preparation and ridging, or possibly terracing may be required to ensure sufficient effective soil depth for perennial tree crops.

4.3.5 Land Capability

The term "land capability" refers to the suitability of land for agricultural activities. Various independent but similar Land Capability classification systems have been developed or used internationally to classify land. Most systems put strong emphasis on soil properties, but other factors such as climate and topography can also play a role. In an attempt to provide more detailed input to the Preservation and Development of Agricultural Land Bill (PDALB), the former National Department of Agriculture, Forestry and Fisheries (DAFF), expanded the earlier 8-class Land Capability classification of the RSA, to a 15-class Land Capability Map, based on national datasets on Soil, Climate and Terrain capability, with a weighted reference of:

Soil capability = 30%; Climate capability = 40% and Terrain capability = 30%.

The dataset was subsequently incorporated in the national web-based Environmental Screening Tool which re-classified and interpreted the Land Capability Map as follows:

Table 4: Land Capability interpretation as used in the Environmental Screening Tool. (Text indicated in green refers to renewable energy projects and is therefore not relevant in this case.)

Land Capability		**Sensitivity Group** (Allowance for RE generation[1])		**Associated Land Use Types**
Value	**Class**	**Within Fields**	**Outside Fields**	
01	Very low	High (0.30 ha/MW)	Low (2.50 ha/MW)	Natural veld with low grazing capacity; marginal dryland cultivated areas
02	Very low			
03	Low-Very low			
04	Low-Very low			
05	Low			
06	Low-Moderate	High (0.25 ha/MW)	Low (2.50 ha/MW)	Some extensive dryland cultivated areas; natural veld with high grazing capacity
07	Low-Moderate			
08	Moderate	High (0.20 ha/MW)	Medium (0.35 ha/MW)	All productive cultivated areas including sugarcane; high value agricultural areas with a priority rating C or D
09	Moderate-High			
10	Moderate-High			
11	High	Very High (0 ha/MW)	Very High (0 ha/MW)	Irrigation, horticulture/viticulture, shade net; high value agricultural areas with priority rating A or B
12	High-Very high			
13	High-Very high			
14	Very high			
15	Very high			

The Land Capability for the proposed development areas is indicated as **Low** (5) to **Low-Moderate** (07) for all Fields except Field 2 which includes an area with **Moderate** (08) Land Capability, as shown in Figure 13.

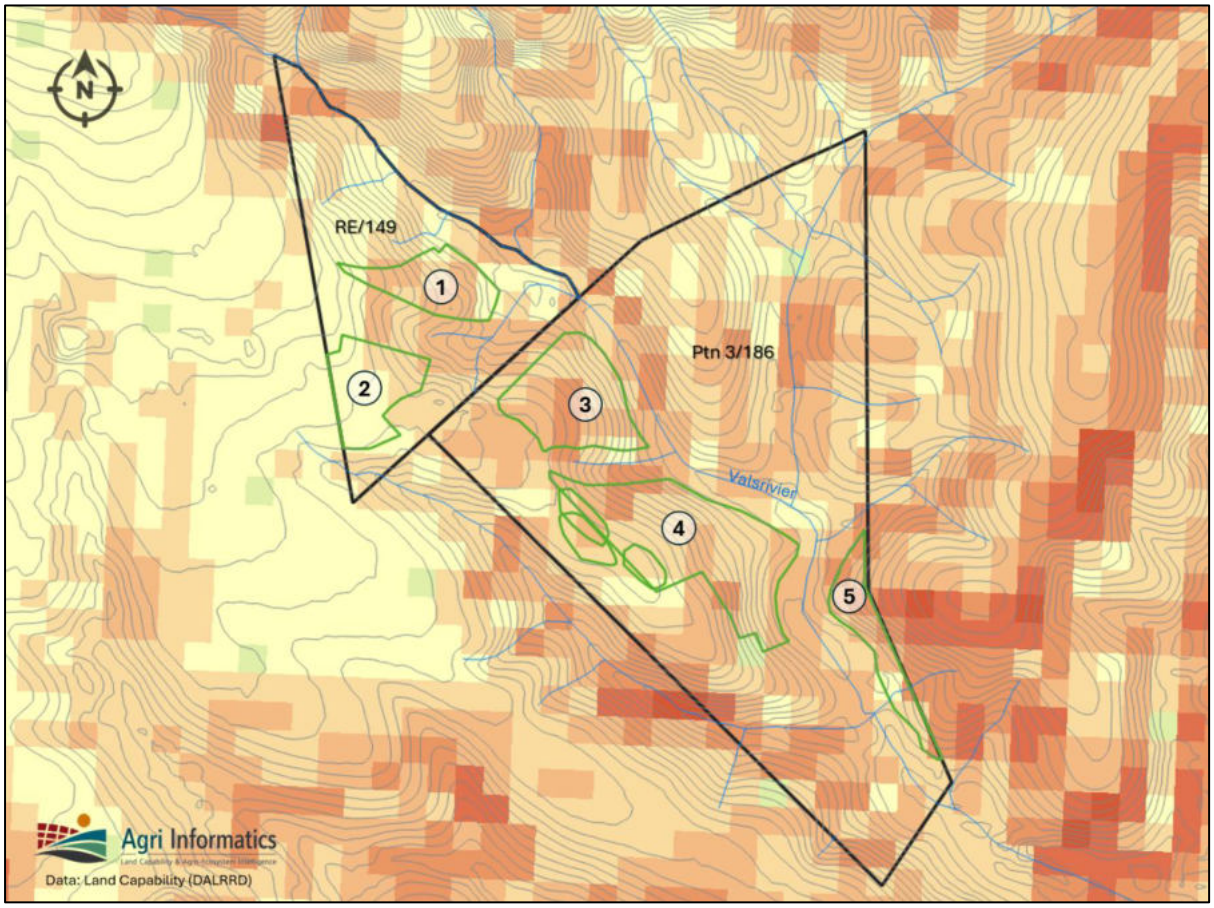

Figure 12: Land Capability map of the study area (DALRRD).

The relatively low Land Capability is combination of mostly Low-Moderate Soil Capability in combination with limitations induced by the Terrain Capability, as indicated above (para. 4.3.2). The other component of Land Capability, namely Climate Capability is Moderate-High. This emphasises the importance to consider the impact of the steep slopes on cultivation carefully, while also confirming the suitability of the soils with a soil survey.

4.3.6 Irrigation

While both properties of the study area have access to irrigation water from the Vals River and side streams, the lawful use needs to be confirmed, while the future crop water demand of the proposed expansion of the irrigation activities needs to be balanced with the lawful allocations for taking of surface water.

4.4 Site Visit

A site visit was conducted on 25 May 2026. The main findings were:

- The terrain is undulating with some very steep slopes in parts of the areas proposed for future orchards.
- Both farms appear to have access to ample irrigation water, but the observation was made after good rains.
- Wind damage appears to be the most important constraint for the young avocado orchards.
- A significant in alien clearing is underway on Ptn 3/186 along the banks of the Vals River.
- Pastures are being irrigated in the flood plain of the river.

The following photographs provide an overview of the terrain, agricultural activities, orchards, fields and dams.

Farmyard and avocado orchards on Ptn 3/186, looking towards the southeast.

Avocado orchards on land sloping towards the Vals River.

Irrigated pastures on the bank of the Vals River (Ptn 3/186)

View towards the east from top of proposed Field 1 (RE/149)

View towards the north from bottom of proposed Field 1 starting behind tree line (RE/149)

View towards the north over proposed Field 2 (RE/149)

View towards the south over proposed Field 2 (RE/149)

View from the Vals River over proposed avocado orchard - Field 3 – behind fence (Ptn 3/186)

Indication of slope gradient of proposed avocado orchard - Field 3 – behind fence (Ptn 3/186)

View towards the west over proposed orchard - Field 4 (Ptn 3/186)

Indication of slope gradient of proposed orchard - Field 4 – left of fence (Ptn 3/186)

View towards the east. Proposed Field 5 on slopes behind river line (Ptn 3/186)

View towards the north over proposed dam sites (Ptn 3/186)

Dense stand of alien trees on Ptn 3/186.

Exposed soil profile at quarry site near proposed Field 4 (Ptn 3/186)

Earth dam on eastern boundary of RE/149

Earth dam on eastern boundary of Ptn 3/186

4.5 Resulting Site Sensitivity

As per the discussion in paragraph 4.1, the purpose of this application is not to transform agricultural land, but rather to expand and intensify agricultural activity on farmland, while the purpose of the NEMA Protocol and prescribed Site Sensitivity Verification is to evaluate the sensitivity of the receiving site for the transformation to farmland to some other use.

Thus, the normal Site Sensitivity Verification is irrelevant to this application and therefore an **Agricultural Compliance Statement**, as prescribed by the NEMA protocol, was deemed adequate.

5 Agricultural Compliance Statement

Following the findings of the "Site Sensitivity Verification", the following facts are presented in fulfilment of the minimum reporting requirements for Agricultural Compliance Statements (as per Government Notice 320, published in the Government Gazette 43110, dated 20 March 2020).

5.1 Site Sensitivity Map

[Provide a map showing the proposed development footprint (including supporting infrastructure) with a 50 m buffered development envelope, overlaid on the agricultural sensitivity map generated by the screening tool.]

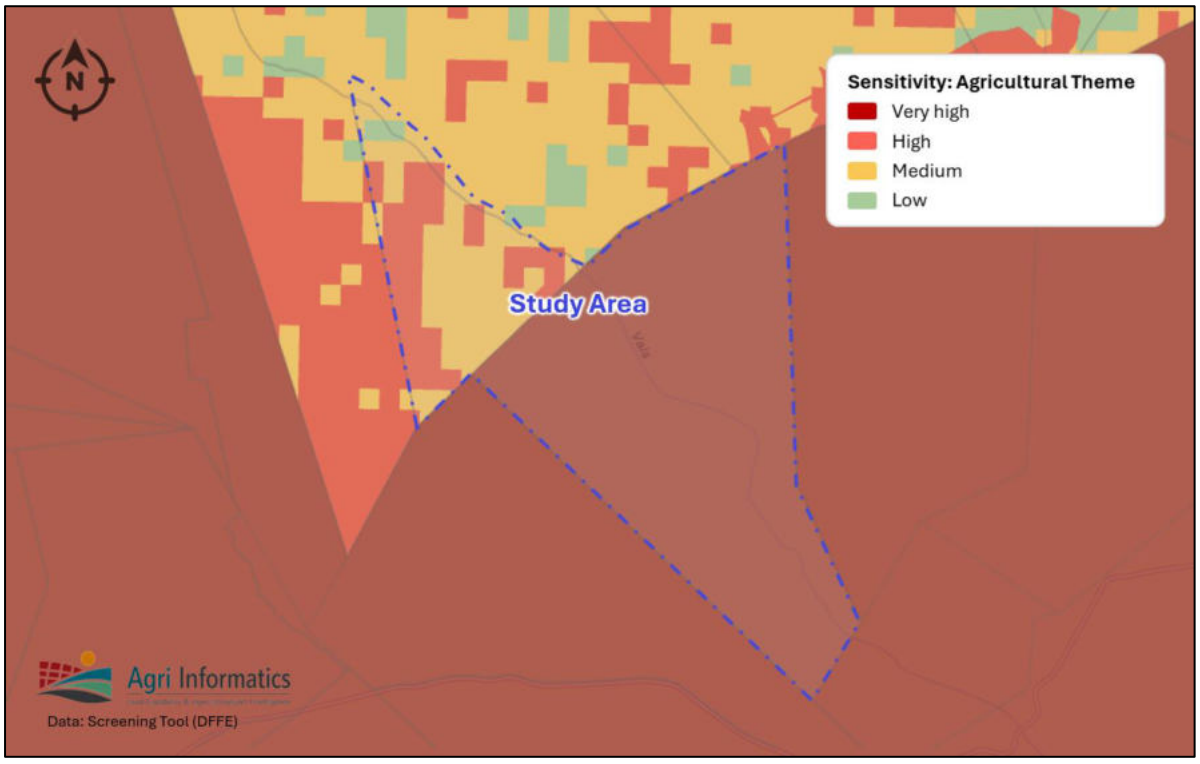

Figure 13: Agricultural site sensitivity of the study area (dotted blue line) as indicated by the Screening Tool of DFFE.

Please note the discussion of the relevance of the agricultural sensitivity with regard to the expansion of agricultural activities as presented in paragraph 4.1.

5.2 Confirmation of Allowable Development Limits

[Confirm that the development footprint is in line with the allowable development limits contained in Table 1 of the Protocol.]

THIS SECTION IS ONLY APPLICABLE TO RENEWABLE ENERGY PROJECTS

5.3 Confirmation of Micro-siting

[Confirmation from the specialist that all reasonable measures have been taken through micro-siting to avoid or minimize fragmentation and disturbance of agricultural activities]

THIS SECTION IS ONLY APPLICABLE TO RENEWABLE ENERGY PROJECTS

5.4 Acceptability of the Development

5.4.1 Specialist Statement

[Provide a substantiated statement with regards to agricultural resources on the acceptability, or not, of the proposed development and a recommendation on the approval, or not, of the proposed development.]

This application entails the expansion and intensification of farming activities on farmland and is supported in principle. However, three key constraints relative to the proposed development were identified and will require due consideration:

- Impact of slope gradient on cultivation.
  In terms of CARA, "*no slopes steeper than 20% may be cultivated without written permission form and executive officer*".
- Contribution of the soil suitability.
  Adequate soil depth could be lacking in parts of the proposed new fields.
- Availability of lawful water use.
  Proof of adequate water rights will be required when applying for the CARA permit to cultivate new fields.

Ideally a farm development plan, based on confirmed evidence of soil properties, water requirements and slope gradients, should be compiled to accompany applications for the cultivation of virgin land in terms of CARA and possibly also water use applications. While such a plan is recommended, it is not regarded as a condition for the Environmental Application.

This application is therefore supported and recommended for approval, subject to the conditions below.

5.4.2 Special Conditions

[Stipulate any conditions to which this statement is subjected.]

This Statement is conditional upon the following:

- Prior to any commencement of land clearing for cultivation activities, A CARA permit should be acquired via the local Land Care office of the Department of Agriculture at DJ Malherbe Building, Ladismith Way, Riversdale, 6670
- Application for the CARA permit will require a soil survey to determine the suitability of the soils for the intended purposes, while it will most likely also require (i) proof of adequate lawful water use allocation(s) and a comprehensive water runoff control design and implementation strategy, based on the final layout of the areas to be cultivated.

5.4.3 EMPr requirements

[Where identified, propose impact management outcomes or any monitoring requirements for inclusion in the Environmental Management Programme (EMPr).]

The Environmental Management Programme should include monitoring of the development and execution of a water runoff control plan, as well as monitoring of soil erosion induced by runoff with the aim to amend runoff mitigation measures as may be required. The water runoff control plan should include both cultivation areas and access roads.

5.5 Knowledge Gaps

[Provide a description of the assumptions made and any uncertainties or gaps in knowledge or data.]

This study did not include a soil survey of the areas proposed for development, as the client seeks to obtain environmental approval prior to incurring further costs. This assessment therefore relied on the soils information as extracted from the Land Type data. As indicated in the Specialist Statement, a soil survey should be undertaken to guide the execution of the proposed development, especially in the areas indicated for perennial and cash crops on Ptn 3/186.

The absence of more accurate elevation data compromises the accuracy of the slope gradient analysis, a key factor to this assessment. The uncertainty in the data is however not expected to influence the findings or recommendations in any significant way, but a detailed topographic survey, as will also be required for the irrigation design of the

orchards, should be conducted and interpreted in terms of the impact of slope gradients on water runoff control.

No other knowledge gaps that could have a material impact on the outcome and findings of this study have been identified.

4. References

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Van Heerden, J.M, 1991. Die vestiging van weidings in die wintereëngebied: 1. Gewaskeuse. *Elsenburg Journal*, Special Edition, Pasture Research, 12-28.

5. Appendices

Extract from CARA re cultivation on steep slopes

Steep Slope Gradients Map

Land Type Memoirs

Curriculum Vitae: FH Knight

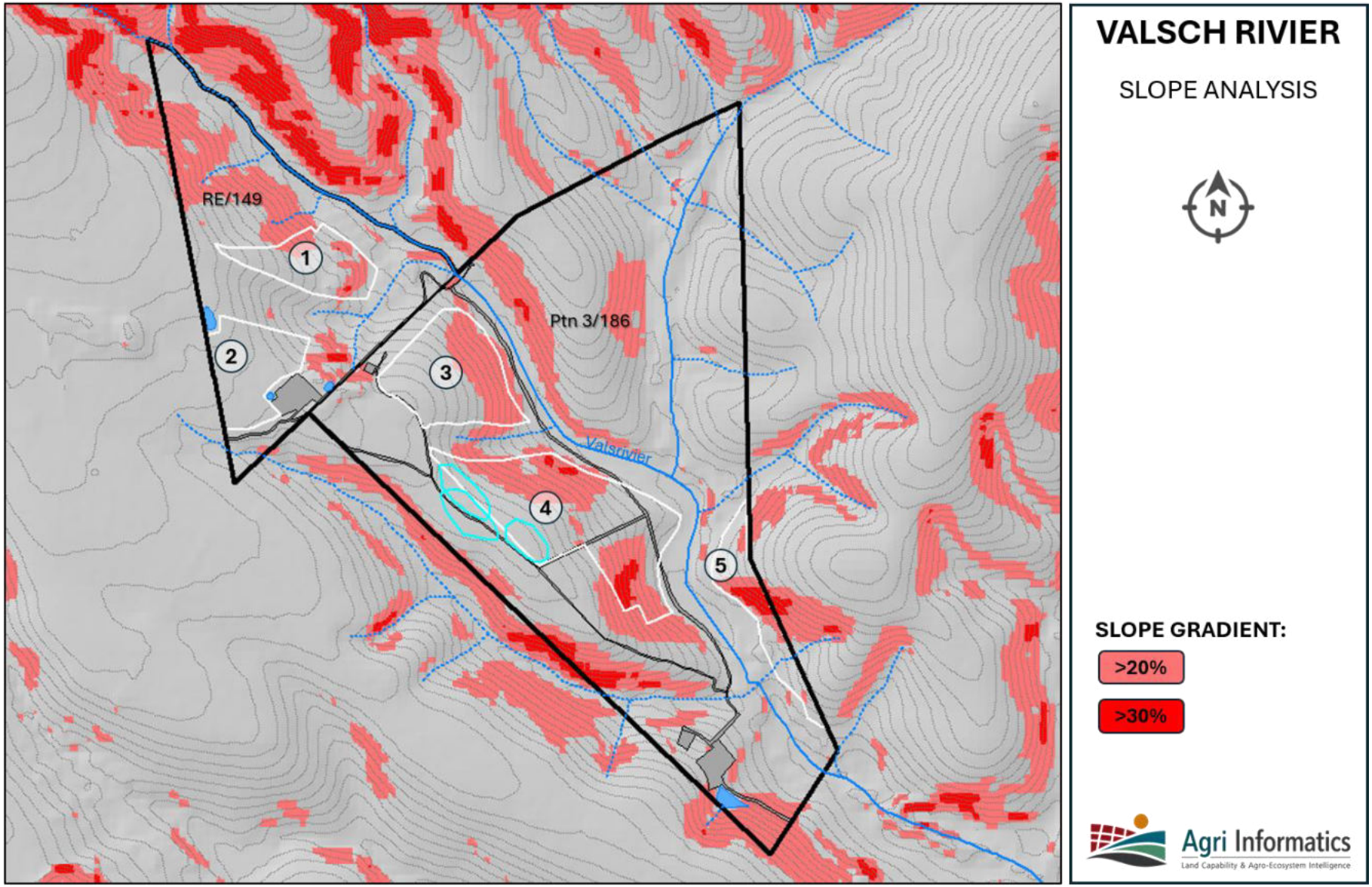
Extract from CARA:

Cultivation on steep slopes

1) Except on authority of a written permission by the executive officer, no land user shall cultivate any land if it-
   (a) has a slope of more than 20 per cent; or
   (b) has a slope of more than 12 per cent, is situated in an area specified in column 1 of Table 1, consists mainly of soil of a soil form and soil series respectively specified in columns 2 and 3 of the said Table opposite the area concerned and, if applicable, has such physical properties as may be specified in column 4 of the said Table opposite the soil series concerned.
2) The prohibition contained in subregulation (1)(a) shall not apply in respect of land which is under cultivation on the date of commencement of these regulations, provided it is already protected effectively in terms of regulation 4 against excessive soil loss due to erosion through the action of water.
3) The provisions of regulations 2(2), (3) and (4) shall apply *mutatis mutandis* with regard to an application for a permission referred to in subregulation (1).

NOTE: Table 1 refers to the Magisterial Districts in the Eastern Cape and is not applicable in the case of Valschrivier.

Steep Slope Gradients Map



Land Type Memoir: Db21

LAND TYPE/ *LANDTIPE* : **Db21**
CLIMATE ZONE/ *KLIMAATSONE* : 780H
Area/ *Oppervlakte* : 26294ha
Estimated area unavailable for agriculture
Beraamde oppervlakte onbeskikbaar vir landbou : 200ha

Occurrence (maps) and areas / *Voorkoms (kaarte) en oppervlaktes:*
3420 Riversdale (26294ha)

Inventory by/ *Inventaris deur:*
BHA Schloms & B Stehr
Modal profiles/ *Modale profiele:*
P370

Terrain unit/ *Terreineenheid*				1		1(1)		3		4		5		Total/ *Totaal*		Clay content *Klei-inhoud*			Texture *Tekstuur*		Depth limiting material *Diepte-beperkende materiaal*
% of land type/ *% van landtipe*				28		7		55		6		4									
Area/ *Oppervlakte (ha)*				7362.32		1840.58		14461.7		1577.64		1051.76									
Slope/ *Helling (%)*				0 - 3		0 - 3		15 - 50		2 - 4		0 - 3									
Slope length/ *Hellingslengte (m)*				400 - 800		50 - 80		200 - 1000		200 - 300		100 - 200				%					
Slope shape/ *Hellingsvorm*				Z		Y-Z		X		Z-X		X									
MB0,MB1 (ha)				0		1196		9979		1578		1053		S>12%	4233						
														S<12%	9571						
MB2-MB4 (ha)				7363		644		4483		0		0			12490						
Soil series or land classes	Depth	MB														A	E	B21	Hor	Class	
Grondseries of landklasse	*Diepte* (mm)			%	ha	%	ha	%	ha	%	ha	%	ha	ha	%					*Klas*	
Soil-rock complex																					
Grond-rotskompleks:																					
Rock/Rots			4	75	5522	5	92							5614	21.4						
Plettenberg Ms13	100 -	400	3	25	1841									1841	7	2-6			A	fi/meSa	si
Mispah Ms10	100 -	350	3			25	460							460	1.7	2-6			A	fiSa	R
Swartland Sw31, Hogsback Sw32	250 -	350	0					35	5062	30	473			5535	21	10-20		>40	B	Cl	vp
Kanonkop Gs13, Platt Gs14	150 -	450	3			5	92	27	3905					3997	15.2	6-15		10-20	A	fi/meSa-SaLm	so
Stanford Ss23																					
Sterkspruit Ss26	300 -	600	0					21	3037	35	552	5	53	3642	13.8	6-20		>60	A	fiSa-SaLm	pr
Dohne Es13, Enkeldoorn Es33	500 -	700	0					3	434	20	316	15	158	908	3.4	0-6	6-15	>40	E	fiSa-SaLm	pr
Mispah Ms10	100 -	350	3					4	578					578	2.2	2-6			A	fi/meSa	R
Stanford Ss23																					
Sterkspruit Ss26	400 -	600	1			30	552							552	2.1	6-20		>60	A	fiSa-Lm	pr
Vaalrivier Oa33, Jozini Oa36	1000 -	1200	+0							6	95	40	421	516	2	0-6		6-20	B	fiSaLm	
Dohne Es13, Enkeldoorn Es33	500 -	700	1			16	294							294	1.1	0-6	6-15	>40	E	fiSa-SaLm	pr
Dundee Du10	1000 -	1200	+0									25	263	263	1	2-6			A	fi/meSa	
Kanonkop Gs13, Platt Gs14	150 -	450	0							4	63			63	0.2	6-15		10-20	A	fi/meSa-SaLm	so
Other/Ander	400 -	900	0			4	74	10	1446	5	79	15	158	1757	6.7	10-20		>40	B	fi/meSaCl-Cl	
Coarse deposits/																					
Growwe afsettings			1			15	276							276	1						

Terrain type/ *Terreintipe :* C3
Terrain form sketch/ *Terreinvormskets*

For an explanation of this table consult LAND TYPE INVENTORY (table of contents)
Ter verduideliking van hierdie tabel kyk LANDTIPE-INVENTARIS (inhoudsopgawe)

Geology : Shale and siltstone of the Bokkeveld and Witteberg Groups, occasionally overlain by Tertiary silcrete and terrace gravel.
Geologie: *Skalie en slitksteen van die Bokkeveld en Witteberg Groepe, plek-plek oorle deur Tersiere silkreet en terrasgruis.*

Land Type Memoir: Gb21

LAND TYPE/ *LANDTIPE* : **Gb21**
CLIMATE ZONE/ *KLIMAATSONE* : 785H
Area/ *Oppervlakte* : 6390ha
Estimated area unavailable for agriculture
Beraamde oppervlakte onbeskikbaar vir landbou : 80ha

Occurrence (maps) and areas / *Voorkoms (kaarte) en oppervlaktes:*
3320 Ladismith (3633ha) 3420 Riversdale (2757ha)

Inventory by/ *Inventaris deur:*
F Ellis & B Stehr
Modal profiles/ *Modale profiele:*
Geen/None

Terrain unit/ *Terreineenheid*			1		3		4		5		Total/ *Totaal*		Clay content *Klei-inhoud*				Texture *Tekstuur*		Depth limiting material *Diepte-beperkende materiaal*
% of land type/ *% van landtipe*			60		20		15		5										
Area/ *Oppervlakte (ha)*			3834		1278		958.5		319.5										
Slope/ *Helling (%)*			0 - 4		6 - 26		0 - 7		0 - 3										
Slope length/ *Hellingslengte (m)*			950 - 1000		350 - 700		600 - 700		120 - 150				%						
Slope shape/ *Hellingsvorm*			Z-Y		Y		X-Z		X										
MB0,MB1 (ha)			1917		1279		960		320		S>12%	306							
											S<12%	4167							
MB2-MB4 (ha)			1917		0		0		0			1917							
Soil series or land classes	Depth	MB											A	E	B21	Hor	Class		
Grondseries of landklasse	*Diepte* (mm)		%	ha	%	ha	%	ha	%	ha	ha	%					*Klas*		
Stormsrivier Hh11, Garcia Hh21	1100 - 1200	2	50	1917							1917	30	6-15	6-15	6-15	E	fi/meSaLm		rh
Stanford Ss23	300 - 500	1	10	383	10	128	30	288			799	12.5	6-15		>45	A	fiSaLm		pr
Ofazi Cv23, Springfield Cv24	900 - 1000	1	15	575	10	128					703	11	6-15		6-15	B	fi/meSaLm		hp
Enkeldoorn Es33	500 - 600	1	5	192	20	256	20	192			640	10	6-15	6-15	>45	E	fiSaLm		pr
Arniston Va31	500 - 600	1	5	192	10	128	30	288			608	9.5	10-25		35-55	B	ClLm-Cl		vp
Stormsrivier Hh11, Garcia Hh21	1100 - 1200	1			30	383					383	6	6-15	6-15	6-15	E	fi/meSaLm		rh
Dundee Du10	> 1200	1							50	160	160	2.5	6-15			A	fi/meSaLm		
Other/Ander	400 - 800	1	5	192	10	128	10	96	20	64	480	7.5	6-15		10-20	A	fi/meSaLm		
Coarse deposits/																			
Growwe afsettings		1	10	383	10	128	10	96	30	96	703	11							

Terrain type/ *Terreintipe :* A2
Terrain form sketch/ *Terreinvormskets*

For an explanation of this table consult LAND TYPE INVENTORY (table of contents)
Ter verduideliking van hierdie tabel kyk LANDTIPE-INVENTARIS (inhoudsopgawe)

Geology : Tertiary terrace gravel mainly overlying shale of the Bokkeveld Group.
Geologie: *Tersiere terrasgruis wat hoofsaaklik skalie van die Bokkeveld Groep oorle.*

Curriculum Vitae: FH Knight

François H Knight

AGRICULTURAL RESOURCE SPECIALIST
Agri Business Development
Soil Science / Agronomy / Irrigation Engineering

STELLENBOSCH, SOUTH AFRICA

CONTACT DETAILS
Pinotage Close
Nooitgedacht Village
Stellenbosch, SOUTH AFRICA
francois@agriinformatics.co.za
+27 82 658 7776

PROFILE

Experienced and goal driven agricultural specialist, enthusiastic about the sustainability of farming in Africa. With more than 35 years of experience, from research to farming to consulting, he brings a wealth of knowledge to any agribusiness or entity interacting with the natural agricultural resources. His ability to see the bigger context wherein farming ventures need to thrive, enables him to design creative strategies to ensure bottom-line profit, a key element of sustainability.

After extensive involvement in agro-ecosystem assessments for renewable energy and urban development on farmland, he is currently one of the few in-country experts in this field.

CORE SKILLS

English	●●●●●
Afrikaans	●●●●●
Leadership	●●●●●
Management	●●●●●
Strategic Planning	●●●●●
Motivation	●●●●●
Communication	●●●●●
Computer skills	●●●●●
Analysis	●●●●●
Administration	●●●●○
Delegation	●●●●○

RÉSUMÉ

François was born in Johannesburg, South Africa but grew up in the Karoo and matriculated from High School Laingsburg in 1980, a mere 2 months before his family home was swept away in the great flood of January 1981. At school he was chairman of the debate society and captain of his rugby team and participated in rugby, tennis, target shooting and cadets.

He obtained an Honours degree in Agricultural Science from the University of the Free State in 1986, whereafter he did his basic compulsory military training at Intelligence School, before being elected to 47 Survey Squadron's Terrain intelligence unit. The SA Defence Force enrolled him at Potchefstroom University for a post graduate diploma in Terrain Evaluation, which included field surveys of parts of the Kruger National Park and SA Army Battle School, Lohatlha. He received the rank of Lieutenant in 1987 and was Officer in Command of the field Task Groups. While being in civil service of the SANDF, he was officially commissioned to the rank of Captain in 1994, signed by the late President Nelson Mandela.

Directly after completing his studies at UFS in December 1986, Francois was also appointed as Soil Physics Researcher of the former Elsenburg Agricultural Development Institute (now Western Cape Department of Agriculture). After completion of his 2 years of military training, he returned to Elsenburg but was directly seconded to Stellenbosch University for a Master's Degree in Agricultural Science, which he received in March 1991 *cum laude*, with the *Movement and Management of Water in Stony Irrigated Soils* as study subject, to address irrigation return flow problems associated with vineyard developments on the foot slopes along the Breede River valley.

During the next 5 years as a Soil Scientist at Elsenburg, he was tasked with crop modelling of winter cereals and attended a CERES crop modelling course at the International Fertiliser Development Centre at Muscle Shoals, Alabama, US. He extended this travel to include visits to the US Water Conservation Laboratory, Phoenix; US Salinity Laboratory, Riverside; Centre for Irrigation Technology, Fresno; Department of Land, Air and Water Resources, UC Davis; Prof Gaylon Campbell, Washington State University, Pullman; Cornell University, Ithaca, Dept Crop and Soil Sciences, University of North Carolina, Raleigh.

He studied and measured the soil-plant-atmosphere continuum of winter cereals in the Western Cape in various localities and climatic conditions. He expanded his studies to Ph.D.-level research on the water balance, irrigation and nutrient management of irrigated potatoes in the highly permeable soils of the Sandveld of the Western Cape. He also conducted research on the efficiency of natural gypsum deposits on soil amelioration and as source of calcium in potato nutrition.

In 1995, Francois was appointed as head (Assistant Director) of the Natural Resource Utilisation division of Elsenburg, which then incorporated the GIS capability and spatial modelling functions of the Western Cape Department of Agriculture. In addition to his administrative functions including financial and personnel management, he was also

responsible for the development of GIS-based crop modelling for 14 different crop types grown in the Western Cape while incorporating economic variables. This enabled the compilation of profitability maps for the full range of crop types as well as the spatial impact of changes in economic variables, such as import tariffs or exchange rate, on profitability of production.

His research lead to further study tours to Israel, Scotland, England, The Netherlands and Belgium. He later developed a systematic procedure for the spatial analysis of wine terroirs at individual farm level, enabling detailed planning and farm optimisation recommendations.

In 2001, Francois founded Agri Informatics, a specialist consultancy firm in farm planning and optimisation, natural resources and climate-plant interactions. He initiated the design and development of a vineyard information management system (WineMS) with VinPro in 2001 – 2003. As principal consultant he delivered consultancy services to more than 500 clients over a 20-year period, ranging from national studies, such as the Macro Scale Terroir Analysis of South Africa for Winetech and the strategic demarcation of optimal growing regions of 22 crop types for Woolworths, to regional studies, like the Climate Assessment of the Orange River Valley from Jacobsdal to Blouputs for the Orange River Wine Producers, an assessment of the optimal water management plan for the Stompdrif and Kammanassie Dams, in collaboration with Ninham Shand and the Agricultural Assessment of the Baviaanskloof for Conservation South Africa. His work extended to Southern African countries, including Angola, Zambia, Zimbabwe, Lesotho and Namibia. He even did a terroir analysis for Domaine Gayda in France.

Francois developed a satellite-based remote sensing service for vineyard management planning in 2004 using Quickbird imagery, when 60cm per pixel was regarded as high resolution. The service was later switched to aircraft platforms to obtain higher resolutions and more flexibility. As a hobby, he has been building and flying drones since 2014, experimenting with various Vegetation Index sensing and processing solutions.

Environmental sustainability and impact became increasingly integrated in his consultancy work and lead to his involvement in impact assessments for more than 30 wind farms or solar parks in South Africa. He was also the lead consultant in the compilation of a Biodiversity Best Practice Guideline for Potato Production in the Sandveld and a team member in the development of an Environmental Management Framework for the Sandveld

He is the author or co-author of 16 scientific papers. His work has been the topic of articles in Popular Mechanics, Wineland magazine and Die Burger newspaper. He has been interviewed by RSG (WineMS), Landbou Radio (Terroir Analysis) and e.TV (Climate Change). He made presentations at various congresses including SSSSA, CSSSA and GISSA as well as many symposia and was guest lecturer at the University of Stellenbosch to pre- and post-graduate students, Elsenburg College and for two consecutive years presented the soil science module as part of the SABI accreditation course.

From 2014 to 2020, Francois has been directly involved in farming as Managing Director of a blueberry farm in the Western Cape, as well as the project planner for a large-scale blueberry farm in the Kavango Region of Namibia. He has gained invaluable experience in aspects like market analysis, project & financing planning, financial, asset & personnel management, export product protocols and standards, cold chain management, social development programmes and statutory processes. This role was terminated in 2020, to again offer dedicated consultancy services to existing and new clients.

EDUCATION

1991: M.Sc.Agric. cum laude — **US, Stellenbosch**
Specialised in soil physics with thesis: *The movement and management of water in stony irrigated soils.*

1988: Post Grad. Dip. Terrain Evaluation — **UNW, Potchefstroom**
Geology, Soil Mechanics, Geography, Botany, Computer Science.

1986: B.Sc.Agric.Hons. — **UFS, Bloemfontein**
Main subjects Soil Science (Hons), Agronomy III and Irrigation Engineering III.
Minor subjects: Agricultural economy, Plant pathology, Entomology, Biometry, Animal science, Pasture science, Meteorology, Mathematics, Physics, Chemistry

Curriculum Vitae: Francois H Knight – April 2026

1980: Matric — **Laingsburg High School**

Mathematics, Physical Science, Biology, Accounting, Afrikaans, English
Captain of Rugby team U.15 & U.19; Chairman Debating Society

EXPERIENCE

2015 – 2020: Executive Director: Business Development — **Vangoberry, Paarl**

- Founder and 50% partner of Vangoberry, a blueberry farm development and management company.
- Developed and managed Berrybase, a blueberry farm near Wolseley in the Western Cape of South Africa as 25% shareholder. Exited this project in 2018, after achieving a record breaking first harvest of 28 t/ha.
- Secured 1350 ha of land and irrigation water in the Kavango East region of Namibia for intensive agricultural production.

2001 – present: Founder and Principal Consultant — **Agri Informatics, Stellenbosch**

Founder of Agri Informatics, a private firm offering a consultancy service to the agricultural industry, renewable energy industry and developers that interact with farmland, on:

- Natural resource potential assessments – soil surveys, climate analysis, topographic analysis, farm potential, etc.
- Farm design and layout
- Agricultural Compliance and Agro-Ecosystem assessments
- Operational and business plans
- Compilation of Best Practice Guidelines

Over three decades, consultancy services were delivered for a range of crops including, wine and table grapes, deciduous and stone fruit, citrus, olives, lucerne and grain crops as far as France, but mostly in Southern Africa.
See addendum for list of key projects. Also: www.agriinformatics.co.za

1995 – 2001: Assistant Director: Resource Utilisation — **Dept of Agriculture, Elsenburg**

Promoted to Assistant Director at the age of 32, responsible for the design and development of a GIS-based natural resource inventory of the Western Cape. As division head, responsible for all administrative functions of budgeting, reporting, personnel and inventory management. Also gained full proficiency in the ESRI suite of geographic information systems.

1989 – 1995: Soil Scientist — **Dept of Agriculture, Elsenburg**

Extensive experience in natural systems modelling, land use potential and agriculture vs. environment studies, as well as project management while senior researcher. Major projects, as project leader, included:

- Water balance studies and crop simulation modelling of wheat in the Western Cape.
- Development of nutrient and irrigation scheduling guidelines to minimise environmental impact of potato production in the Sandveld.
- Yield potential modelling of key crops in the Western Cape as input to economical optimisation modelling in preparation of Western Cape Agricultural Summit.
- Terroir analysis for the SA Wine Industry through Project: Vision 2020.
- Development of an environmental impact-potential estimation methodology as study leader for M-student.
- Development of methodology for the estimation of the primary biomass production potential of the Western Cape.

1987 – 1988: Pedologist (Soil Mapping) — **SADF, Engineering Corps**

Officer in command of 47 Survey Squadron's field team responsible for soil and vegetation mapping during compulsory military training. Gained valuable experience in field surveys, mapping and soil classification. Attained the rank of Captain.

AFFILIATIONS

Soil Science Society of South Africa
South African Council for Natural Scientific Professions – Registration number: 149315

INTERESTS

He has a keen interest in drone technology, remote sensing and their applications in precision agriculture, but eagerly shares his core passions in life:

- The African bush (or desert – after growing up in the Karoo)
- Golf
- Photography
- Aviation

SKILLS & EXPERIENCE

During his career, he was exposed to, received formal training and/or mastered the following skills:

Skill / Experience	Level
General Computer Literacy	Very proficient
MS Word, Excel, PowerPoint	Very proficient
GIS & Spatial Analysis	Specialist
Communication & Presenting	Very proficient
Report Writing	Very proficient
Budgeting & Financial Modelling	Very proficient
Agribusiness Assessment and Modelling	Specialist
Project Planning (Objectives, Deliverables, Deadlines, Schedules, Costing, etc.)	Very proficient
Business Systems and SOP Development	Very proficient
Financial Management & Accounting	Proficient
Personnel Management	Proficient
Change Management	Proficient
Environmental Management	Proficient
English & Afrikaans (Read, Write & Communicate)	Very proficient
Teamwork	Very proficient
Cold Chain Management	Experienced
Fruit Export Protocols and Standards	Experienced
Community Interaction	Experienced
Soil Classification and Mapping	Experienced
Plant Nutrition and Fertigation	Experienced
Crop Modelling and Decision Support Systems	Experienced
Scientific Research Methodology	Experienced
Remote Sensing (Platforms and Processing)	Experienced
Plant Health & Agrochemicals	Basic
Singing	False

REFERENCES

Pieter Brink: Manager: Agronomic Services and Research Yara South Africa:	+27 82 658 6005
Cor van der Walt: Land Use Manager Dept of Agriculture: WC	+27 83 460 5830
Jannie Gutter: CEO 4Arrows Mining & Engineering	+27 82 652 3230

BIO

Date of Birth:	7 May 1963
Nationality:	South African
ID:	630507 5044 08 8
Marital Status:	Divorced
Dependent Children:	None
Criminal Record:	None
Drivers Licence:	Heavy Vehicle

PUBLICATIONS

Scientific, Semi-scientific, Congress Papers and Academic Reports

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Knight, F.H. & MOOLMAN, J.H., 1992. Die vloeiregime van water in 'n klipryke besproeiingsgrond uit skalie. 17th Congr. Soil Sci. Soc. S. Afr., Stellenbosch: 28-30 January, 1992.

Moolman, J.H. De Clercq, W.P., and **Knight, F.H**, 1993, Macropore flow and drainage rates: A case study in two micro-irrigated vineyards, in Workshop on Micro Irrigation Worldwide, Congress on. Irrigation and Drainage, 15th, The Hague, The Netherlands: Proceedings, p. 193-205.

Knight, F.H., 1994. Bestuurstrategieë en risiko's by kleingraanverbouing in die Suid- en Wes-Kaap, soos bepaal deur die interaksie tussen grond en klimaat. Elsenburg Landbou-ontwikkelingsinstituut. Departement van Landbou: Provinsie Wes-Kaap.

Knight, F.H., 1995. Die gebruik van natuurlike gipsafsettings as bron van landbougips. Elsenburg Landbou-ontwikkelingsinstituut. Departement van Landbou: Provinsie Wes-Kaap.

Arckoll, D., Landman, L. & **Knight, F.**, 1998. Suitable areas for growing canola and its market in the Western Cape, Els. J. 2, 1-6.

Knight, F.H., 1999. Logingsverliese van makro-elemente op sandgronde. Aartappelkortkursus, LNR Roodeplaat.

Knight, F.H., Brink, P.P. & Van Der Walt, C.J., 2000. Effect of ammonium : nitrate ratio in a potato field trial on sandy soils with a low nitrification potential.

Knight, F.H., P.P. Brink, N.J.J. Combrink and C.J. van der Walt. 2000. Effect of nitrogen source on potato yield and quality in the Western Cape. FSSA Journal 2000, pp. 157-158.

Knight, F.H., Brink, P.P. & van der Walt, C.J., 2001. Nitrifisering in die aartappelgrond van die wes-kaap: wees versigtig vir ureum en ammonium op lae pH grond. Hoofdirektoraat Landbou : Wes-Kaap, Elsenburg.

Brink, P.P., Combrink, N.J.J. & **Knight, F.H.**, 2000. Die waarde van petioolsap analise in die optimalisering van N-voeding by aartappels (Solanum tuberosum l.) in sandgronde. M.Sc. Thesis, Universiteit Stellenbosch.

Brink, P.P., Combrink, N.J.J. & **Knight, F.H.**, 2001. Petiole nitrate measurement as a guide for N fertilisation of potatoes (Solanum tuberosum L.) on sandy soils. Plant & Soil.

Knight, F.H., Conrad, J. & Helme, N., 2007. Biodiversity Best Practice Guidelines for Potato Production in the Sandveld. Prepared for Potato South Africa and CapeNature. Agriinformatics, GEOSS and NickHelme Botanical Surveys.

Knight, F.H., 2012. Agricultural Assessment of the Baviaanskloof. Commissioned report to GreenChoice, an initiative of Conservation South Africa.

Du Plessis, C., De Villiers, C., **Knight, F.H.**, McDonald, D., Conrad, J., Van Zyl, H., De Wit, M., 2016. Environmental Management Framework for the Sandveld.

Knight, F.H., 2019. Okavango Delta: Impact of Irrigation Development in Namibia.

Popular Articles

Graham Beck Wines Viticulture Project: Satellite technology taken to new heights, **Wine Magazine**. 1 December 2004
A Vintage Made In Heaven, **Popular Mechanics**. 31 March 2006.

KEY PROJECTS OF AGRI INFORMATICS

Typical projects include:

- GIS based environmental studies and farm optimisation planning for leading Wine Estates, such as De Wetshof, Zandvliet, Tokara, Thelema, Graham Beck Wines, Rupert & Rothchild, L'Ormarins, Kanonkop, Paul Cluver, Bouchard Finlayson, Beyerskloof, Meerendal, Diemersdal, Bloemendal, Klein Constantia, Constantia Uitsig, Charles Back Wines, Meerlust, Vergelegen, Lourensford and many more.
- In a multi-disciplinary environment, agricultural potential studies were, amongst others conducted for the City of Cape Town (Mamre Agricultural Development Plan), Great Cormorant Investments (Goergap), Ninham Shand (Stompdrift – Kammanassie Irrigation Water Optimisation Study), Northern Cape Wine Association (Orange River Terroir Study) and Winetech (Vineyard Potential of South Africa).
- As agricultural consultant, has conducted Agricultural Impact Assessments on several urban and rural developments for Urban Dynamics Western Cape, CEBO Planning, MCA Planners, NM & Associates, Dennis Moss Partnership, IC@Plan, Jan Hanekom Partnership, Cape EAPrac & Doug Jeffery Environmantal Consultants, Environmental Partnership, Anél Blignaut Environmental Consultants, NuPlan, SiVEST Environmental, Arcus Gibb, Savanna, CCA Environmental, Mott MacDonald PDNA, Terramanzi, Cornerstone Environmental, Similan Property Developers, PHS Consulting, CMAI and Ecoleges Environmental Consultants
- As team leader, compiled Biodiversity Best Practice Guidelines for potato production in the Sandveld in association with GEOSS and Nick Helme Botanical Surveys.
- As team member, conducted for GreenChoice (WWF & Conservation International) an assessment of the gains obtained through Biodiversity Initiatives in the Cape Floristic Region.
- Conducted, for Woolworths (a leading fresh produce retailer) an encompassing climate study on South Africa to identify the best suited areas for the production of a wide range of crops and to assess the potential impacts of climate change on their supply chain.
- Contracted by Environmental Partnership to assist with the compilation of a Baseline Assessment for the Central Karoo District Environmental Management Framework.
- Conducted agricultural impact assessments on more than twenty wind farm projects in five provinces of South Africa.
- Conducted agricultural impact assessments for solar parks at three sites in the Western Cape, three sites in the Free State and one in Limpopo Province.
- Conducted agricultural feasibility assessments for several irrigation farms in southern, central and northern Namibia. Was also contracted by the Karas Regional Council to conduct a high-level agricultural plan for Bethanie.
- Contracted by Conservation SA/Green Choice to conduct a strategic agricultural assessment of the agricultural potential, opportunities and constraints of the Baviaanskloof Hartland Initiative.
- Contracted by CiVEST to conduct agricultural assessment for the Klapmuts EMF.
- Conducted an agricultural assessment of the Qunu precinct, as part of an integrated development plan for the hometown of the late former president Nelson Mandela.
- Sub-consultant to Mott MacDonald for the development of an Environmental Management Plan for the Sandveld Region of the Western Cape, where conflict exist between environmental objectives and the two main farming activities, namely intensive potato production irrigated from groundwater sources and dryland rooibos tea production.
- Sub-consultant to PHS Consulting as part of the EIA team for the development of the new Cape Winelands Airport.
- Extensively involved in agricultural development (lucerne, grain, fruit, wine grapes and berries) in South Africa, Namibia, Lesotho and Angola.
- Conducted a strategic assessment for the Independent Grower's Association on the sustainability of the blueberry industry, with specific reference to the effect of growing area, plant genetics and marketing models on profitability.
- Undertook a case study in support of the implementation of Agrivoltaics in South Africa with specific reference to the Philippi Horticultural Area.

SACNASP
South African Council for Natural Scientific Professions

herewith certifies that

Francois Hendrik Knight

Registration Number: 149315

is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following field(s) of practice (Schedule 1 of the Act)

Soil Science (Professional Natural Scientist)
Agricultural Science (Professional Natural Scientist)

Effective **7 November 2024** Expires **31 March 2027**

President of Council

Chief Executive Officer

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