

**PROPOSED STYR-KRAAL AGRICULTURAL
DEVELOPMENT ON THE REMAINING EXTENT OF
PORTION 0 OF FARM STYR-KRAAL, FARM NO. 81,
POFADDER, KHÂI-MA LOCAL MUNICIPALITY,
NAMAKWA DISTRICT MUNICIPALITY**

DRAFT SCOPING REPORT AND PLAN OF STUDY



October 2021

NAMAKWA DISTRICT MUNICIPALITY

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NAMAKWA DISTRICT MUNICIPALITY**

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ACRONYMS

BGIS	Biodiversity Geographic Information System
CBA	Critical Biodiversity Area
DEA	Department of Environmental Affairs
DENC	Department of Environment and Nature Conservation
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
ECA	Environment Conservation Act (Act No. 73 of 1989)
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMP	Environmental Management Programme
HIA	Heritage Impact Assessment
I&APs	Interested and Affected Parties
NEMA	National Environmental Management Act (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act (Act No. 10 of 2004)
NHRA	National Heritage Resources Act (Act No. 25 of 1999)
NID	Notice of Intent to Develop
NWA	National Water Act
OESA	Other Ecological Support Area
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
WULA	Water Use Licence Application

1. INTRODUCTION

1.1 BACKGROUND

The Schamboua Trust is proposing the development of the Styr-Kraal Agricultural Development, and associated infrastructure, on Remaining Extent of Portion 0 of Farm Styr-Kraal, Farm No. 81, Pofadder, situated within Ward 1 of the Khâi-Ma Local Municipality, Namakwa District Municipality (Figure 1). The total area to be developed measures approximately 230 (Two hundred and thirty) hectares. The site is located approximately 51km north of Pofadder at the following coordinates: 28°40'39.90"S; 19°31'2.93"E. This is a BEE initiative with the primary objective of promoting economic growth, job creation and economic empowerment, through the agricultural industry.

The agricultural development is comprised of existing or previous development in Table 1, please refer to Appendix 2b for layout plan) and the proposed development (Table 2). The existing development is detailed in this application to detail the entire agricultural development within the Styr-Kraal property. However, please note that the proposed development is being applied as detailed in Table 2.

Table 1. Existing development with prior authorisation.

Vineyards	~83ha
Dates	~47ha
Drying Bed	~10.7ha
Housing	~3.8ha
Existing Dam	~2ha
Associated Infrastructure - Pipelines (6256m ²) - Dam pumphouse (255m ²) - Abstraction point (136m ²) - Booster pumphouse (301m ²)	~0.7ha
Total Development:	~ 147.2ha

Table 2. Proposed agricultural development.

Dates	~78ha
Pipeline	XXX
Seasonal workers housing	~2h
New Dam	~2.8h
Waste water management for permanent housing	~0.58
Total Development:	~ 83.38ha

The applicant is the Schamboua Trust who will undertake the activity should it be approved. EnviroAfrica CC has been appointed as the independent environmental assessment practitioner (EAP) responsible for undertaking the relevant EIA and the Public Participation Process required in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA).

This Scoping Report, which will be submitted to the Department of Environment and Nature Conservation (DE&NC) for consideration, forms part of the EIA process.

The purpose of this Draft Environmental Scoping Report is to describe the proposed project, the process followed to date, to present alternatives, and to list issues identified for further study and comment by specialists.

Should the EIA process be authorized by DE&NC, proposed specialist studies (noted in Section 5) will be undertaken, and the significant issues (noted in Section 7) will be investigated and assessed during the next phase of this application [namely the Draft Environmental Impact Report (EIR) phase].

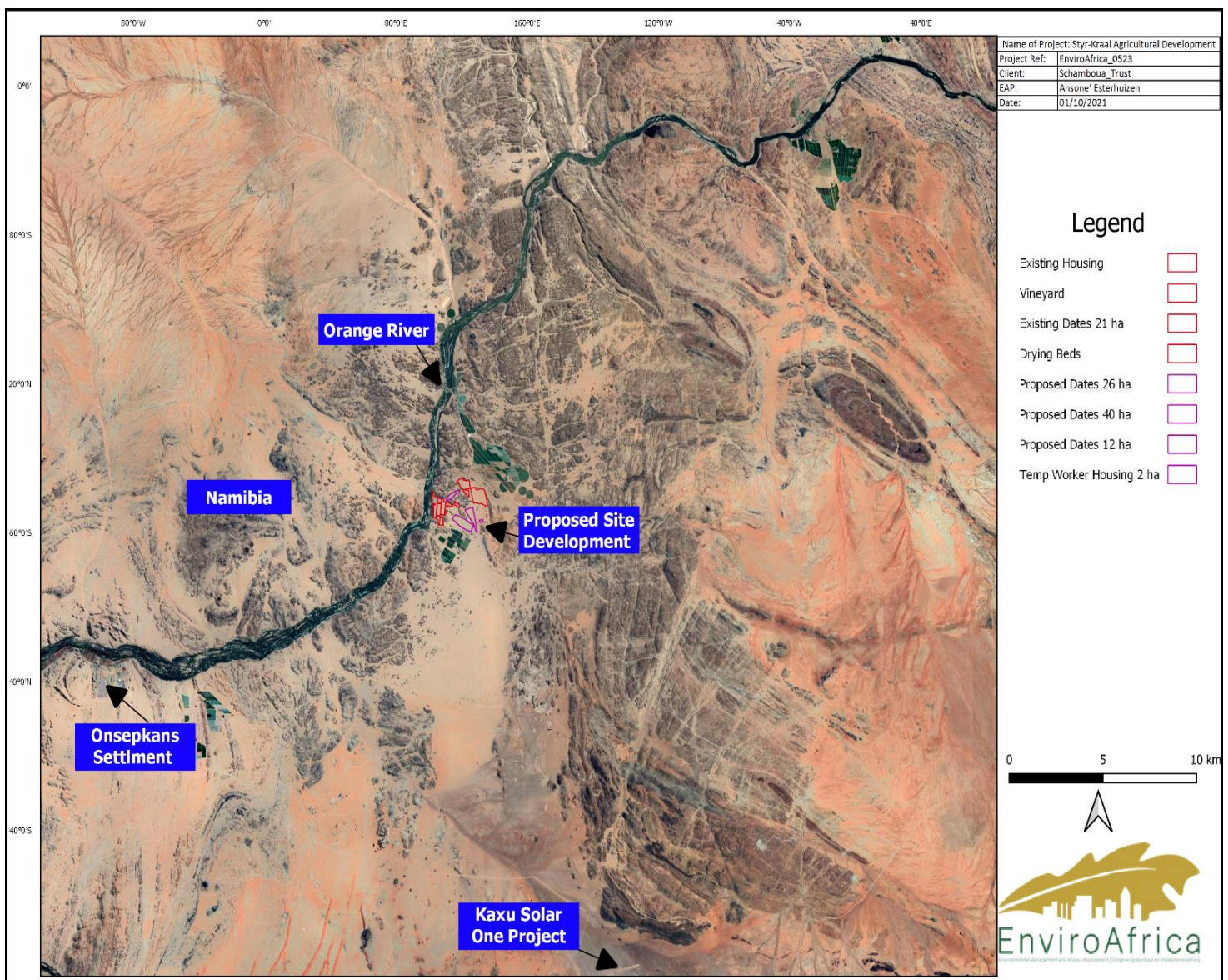


Figure 1. Locality map (1: 250 000) of the proposed site for development.

1.2 DESCRIPTION OF THE PROPOSED ACTIVITY

The Schamboua Trust is proposing the development of the Styr-Kraal Agricultural Development, and associated infrastructure, on Remaining Extent of Portion 0 of Farm Styr-Kraal, Farm No. 81, Pofadder, situated within Ward 1 of the Khâi-Ma Local Municipality, Namakwa District Municipality (Figure 1). Styerkraal (Remainder of Farm Styr-Kraal no. 81) is located approximately 20 km east of Onseepkans on the banks of the Orange River (the border between South Africa and Namibia) in the Northern Cape Province. The site is located approximately 51km north of Pofadder at the following coordinates: 28°40'39.90"S; 19°31'2.93"E.

Styerkraal farm covers a total area of approximately 400 ha and falls within the desert region fringing the North-western portion of the Northern Cape Province of South Africa. Agriculture in this desert region is entirely dependent on irrigation from the Orange River. The property is located between two existing vineyard farms.

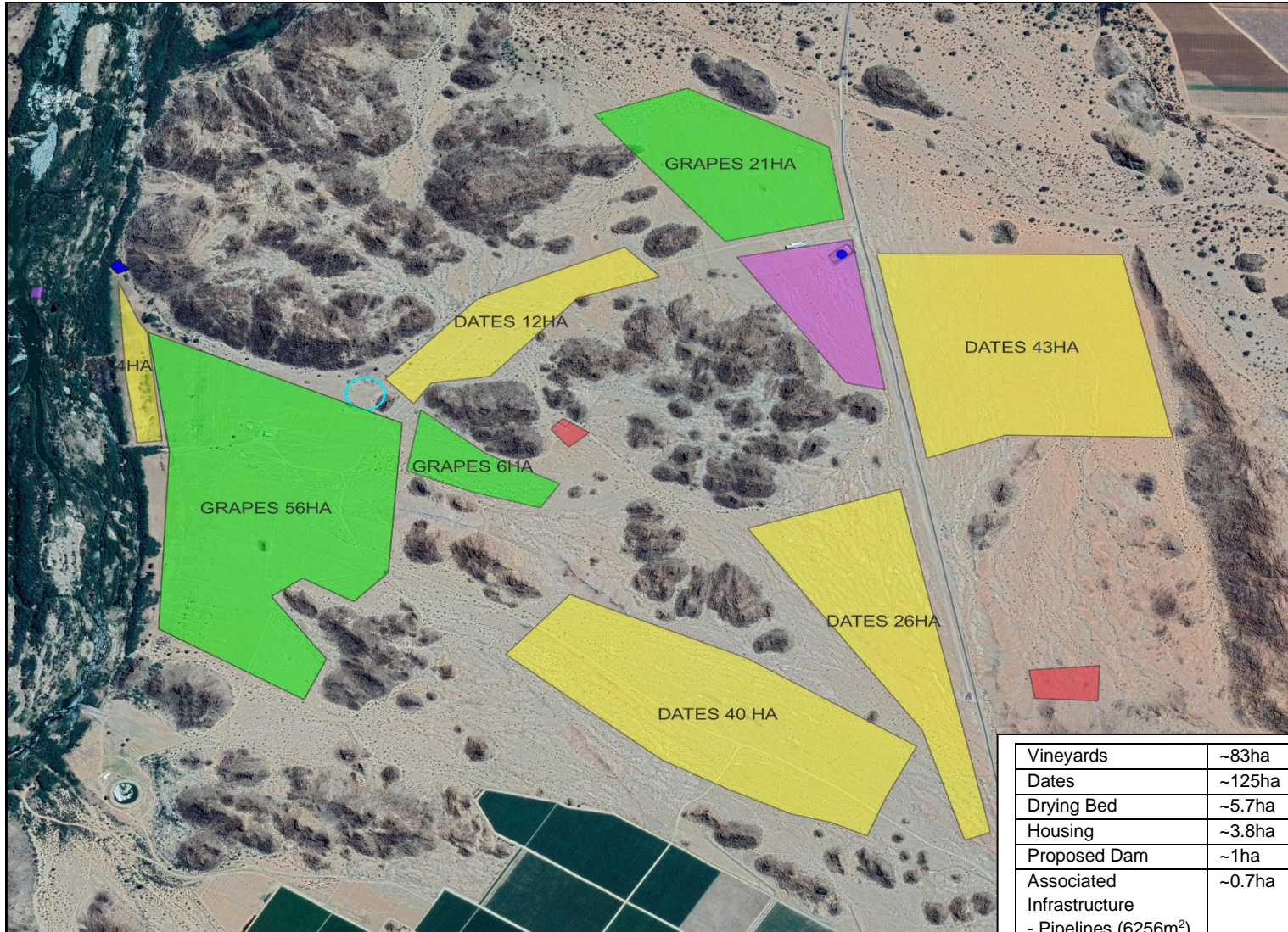
According to the current planning, the proposed development will include the establishment of more than 120 ha of date palms, more than 83 ha of table grapes, drying beds, an additional storage dam, and worker housing. This is a BEE initiative with the primary objective of promoting economic growth, job creation and economic empowerment, through the agricultural industry. The total area to be developed measures approximately 230 (two hundred and thirty) hectares.

About 147.2 ha of the proposed 230 ha development footprint will be in areas previously cultivated (most of which had not been cultivated for at least the last 10 years meaning it had reverted to virgin soils in terms of the Conservation of Agricultural Resources Act, Act 43 of 1983). The remaining approximate 83.4 ha will be located on land not previously cultivated. The additional agricultural areas will all be located on the sheet-washed sandy plains between the rocky koppies dominating this part of the Northern Cape. This land is divided into 5 portions. The rocky areas in between these portions cannot be developed and will be left in their current state.

There will be no pumphouse at the booster station, only a concrete slab with four posts on the corners and a corrugated zinc roof. The sides will be covered with mesh.

The abstraction will be done by submersible pumps and the 3 lines as indicated on the plans. From the abstraction point, there will be dug in at about 1-meter depth. The pipeline will be protected with precast concrete anchors 2 meters upstream of the pipeline connected with a 20 mm cable buried in the soil.

Electricity will be supplied to the submersible pumps by submersible trailing cables dug in next to the pipelines. The submersible pumps will be 48 kW each. The booster pumps will be 3, 90 kW motors.



Name of Project:	Styr-Kraal Agricultural Development
Project Ref:	EnviroAfrica_0523
Client:	Schambooua_Trust
EAP:	Ansonse' Esterhuizen
Date:	01/10/2021

Legend

- WORKERS HOUSING .5HA
- TEMP WORKERS HOUSING 2HA
- PUMPSTATION
- EXISTING STORAGE DAM
- Dam Construction Footprint
- BOOSTER STATION
- GRAPES 21HA
- GRAPES 56HA
- GRAPES 6HA
- DATES 43HA
- DATES 40 HA
- DATES 26HA
- DATES 12HA
- DATES 4HA
- DRYING BEDS 10HA



Vineyards	~83ha
Dates	~125ha
Drying Bed	~5.7ha
Housing	~3.8ha
Proposed Dam	~1ha
Associated Infrastructure	~0.7ha
- Pipelines (6256m ²)	
- Dam pumphouse (255m ²)	
- Abstraction point (136m ²)	
- Booster pumphouse (301m ²)	
Total Development:	~ 219ha

Figure 2. Proposed site development layout. QGIS, version 3.22.

2. NEED AND DESIRABILITY

In terms of the National Environmental Management Act, as amended, EIA 2014 regulations the Scoping/EIA report must describe the need and desirability of the proposed activity. The consideration of “need and desirability” in EIA decision-making requires the consideration of the strategic context of the development proposal along with the broader societal needs and the public interest.

While the concept of need and desirability relates to the *type* of development being proposed, essentially, the concept of need and desirability can be explained in terms of the general meaning of its two components in which *need* refers to *time* and *desirability* to *place* – i.e. is this the right time and is it the right place for locating the type of land-use/activity being proposed? Need and desirability can be equated to the *wise use of land* – i.e. the question of what is the most sustainable use of land.

2.1 NEED

The population for Khâi-Ma was estimated at 13 070 people (2016) with a growth rate of approximately 0.83%. An Estimated 11% of the Northern Cape population reside in the Khâi-Ma Local Municipality. Objectives stipulated in the Khâi-Ma Local Municipality’s IDP¹ with regards to the agriculture sector include:

- (i) Creating an additional 643 000 direct jobs and 326 000 indirect jobs within the agriculture, agro-processing, and related sectors by 2030, and
- (ii) Maintaining a positive trade balance for primary and processed agricultural products.

Irrigated agriculture remains a key sector, within the Northern Cape province, relative to the sector’s contribution to the GDP and the socioeconomic benefits of such agriculture on surrounding communities. The most important fruit commodity produced in the Northern Cape are grapes, namely table grapes and raisins – contributing approximately 95% of the total fruit value share². This highlights the contribution of agriculture, and more specifically grape agriculture, to the socioeconomic development of the Northern Cape province. Thus, there is a need to grow the grape industry within the Khâi-Ma Local Municipality, to further socio-economic development within the surrounding communities. There is also a need to identify and support the sustainability and growth of the agricultural sector, as highlighted within the Khâi-Ma Municipality’s IDP.

The operation of the proposed dam (28 000m³) will provide water security for irrigation of the dates and vineyards amid climate change, as well as enable better utilisation of an existing water use right and scare resource. The recent drought in the Northern Cape and uncertainties of the impact of climate change are some drivers of this project. Various climatic drivers, namely higher temperatures and drier conditions further exacerbate the impact of drought events on the agricultural sector³, which require careful planning and adequate responses to sustain and grow the agricultural sector. The proposed dam will ensure an adequate supply of water for the irrigation of the proposed croplands.

¹<https://khaima.gov.za/wp-content/uploads/2020/05/KH%C3%A2I-Ma-Revised-IDP-2020-21.docx>

²E.g., Taljaard, P.R., 2007. The macro economy and irrigation agriculture in the Northern Cape Province of South Africa (Doctoral dissertation, University of the Free State). Accessible at the following link: <https://scholar.ufs.ac.za/bitstream/handle/11660/4637/TaljaardPR.pdf?sequence=1&isAllowed=y>

³Zscheischler, J., Martius, O., Westra, S., Bevacqua, E., Raymond, C., Horton, R.M., van den Hurk, B., AghaKouchak, A., Jézéquel, A., Mahecha, M.D. and Maraun, D. 2020. A typology of compound weather and climate events. *Nature reviews earth & environment*, pp.1-15.

2.2 DESIRABILITY

The following factors determine the desirability of the area for the proposed development.

2.2.1 Location and Accessibility

The proposed agricultural development will be located adjacent to the Orange River, between two existing agricultural development, located on farm portions approximately 700m north (Portion 20 of Farm No. 81, Styr-Kraal), and approximately 470m southeast (Portion 30 of Farm No. 81, Styr-Kraal) of the proposed site of development. The proposed site for development is accessible via existing roads off the N14. The desirability and location of the proposed development will be further investigated in the Environmental Impact Report (EIR).

2.2.2 Compatibility with the Surrounding Area

The proposed agricultural development will be located adjacent to the Orange River, between two existing agricultural development, located on farm portions approximately 700m north (Portion 20 of Farm No. 81, Styr-Kraal), and approximately 470m south-east (Portion 30 of Farm No. 81, Styr-Kraal) of the proposed site of development.

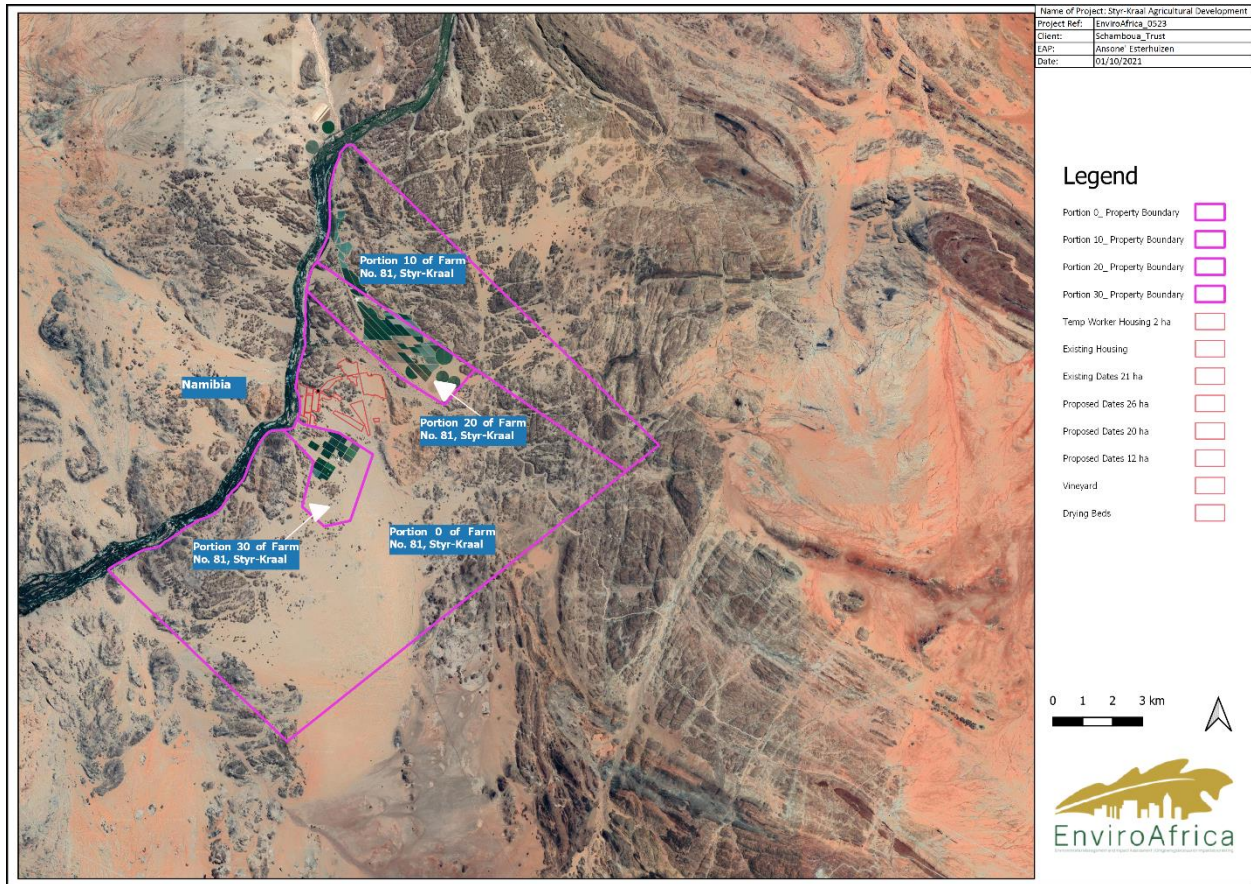


Figure 3. Surrounding landscape, showing the location of the proposed development in a location with the existing agricultural developments in neighboring properties. QGIS, version 3.10.

3. LEGAL REQUIREMENTS

The current assessment is being undertaken in terms of the National Environmental Management Act (Act 107 of 1998, NEMA), to be read with section 24 (5): NEMA EIA Regulations 2014. However, the provisions of various other Acts must also be considered within this EIA.

The legislation that is relevant to this study is briefly outlined below.

3.1 THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA

The Constitution of the Republic of South Africa (Act 108 of 1996) states that everyone has a right to a non-threatening environment and that reasonable measures are applied to protect the environment. This includes preventing pollution and promoting conservation and environmentally sustainable development while promoting justifiable social and economic development.

3.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998)

The National Environmental Management Act (Act 107 of 1998) (NEMA), as amended, makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the relevant authorities based on the findings of an environmental assessment. NEMA is a national act, which is enforced by the Department of Environmental Affairs (DEA). These powers are delegated in the Northern Cape to the Department of Environment and Nature Conservation (DE&NC).

On 04 December 2014, the Minister of Water and Environmental Affairs promulgated regulations in terms of Chapter 5 of the NEMA, namely the EIA Regulations 2014. These were amended on 07 April 2017 (GN No. 326, No. 327 (Listing Notice 1), No. 325 (Listing Notice 2), No. 324 (Listing Notice 3) in Government Gazette No. 40772 of 07 April 2017). Listing Notice 1 and 3 are for a Basic Assessment and Listing Notice 2 for a full Environmental Impact Assessment.

According to the regulations of Section 24(5) of NEMA, authorisation is required for the following listed activities for the proposed agricultural development:

Government Notice R327 (Listing Notice 1) listed activities:

4. The development and related operation of facilities or infrastructure for the concentration of animals in densities that exceed—

- (i) 20 square metres per large stock unit and more than 500 units per facility;
- (ii) 8 square meters per small stock unit and; a. more than 1 000 units per facility excluding pigs where
 - (b) applies, or b. more than 250 pigs per facility excluding piglets that are not yet weaned;
- (iii) 30 square metres per crocodile and more than 20 crocodiles per facility;
- (iv) 3 square metres per rabbit and more than 500 rabbits per facility; or
- (v) 250 square metres per ostrich or emu and more than 50 ostriches or emus per facility.

5. The development and related operation of facilities or infrastructure for the concentration of -

- (i) more than 1 000 poultry per facility situated within an urban area, excluding chicks younger than 20 days;
- (ii) more than 5 000 poultry per facility situated outside an urban area, excluding chicks younger than 20 days;
- (iii) more than 5 000 chicks younger than 20 days per facility situated within an urban area; or
- (iv) more than 25 000 chicks younger than 20 days per facility situated outside an urban area.

8. The development and related operation of hatcheries or agri-industrial facilities outside industrial complexes where the development footprint covers an area of 2 000 square metres or more.

9. The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water—

- (i) with an internal diameter of 0,36 metres or more; or
- (ii) with a peak throughput of 120 litres per second or more; excluding where—
 - (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; or
 - (b) where such development will occur within an urban area.

10. The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes

- (i) with an internal diameter of 0,36 metres or more; or
- (ii) with a peak throughput of 120 litres per second or more; excluding where—
 - (a) such infrastructure is for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or
 - (b) where such development will occur within an urban area.

11. The development of facilities or infrastructure for the transmission and distribution of electricity—

- (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or
- (ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more; excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is —
 - (a) temporarily required to allow for maintenance of existing infrastructure;
 - (b) 2 kilometres or shorter in length;
 - (c) within an existing transmission line servitude; and
 - (d) will be removed within 18 months of the commencement of development.

12. The development of—

- (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or
 - (ii) infrastructure or structures with a physical footprint of 100 square metres or more;
- where such development occurs—
- (a) within a watercourse;
 - (b) in front of a development setback; or
 - (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;

— excluding—

- (aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;
- (bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;
- (cc) activities listed in Activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;
- (dd) where such development occurs within an urban area;
- (ee) where such development occurs within existing roads, road reserves or railway line reserves; or
- (ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.

13. The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 cubic metres or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.

14. The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.

19. The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving—

- (a) will occur behind a development setback;
- (b) is for maintenance purposes undertaken following a maintenance management plan;

- (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies;
- (d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or
- (e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.

19A. The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from—

- (i) the seashore;
- (ii) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater; or
- (iii) the sea; — but excluding where such infilling, depositing, dredging, excavation, removal or moving—
- (f) will occur behind a development setback;
- (g) is for maintenance purposes undertaken following a maintenance management plan;
- (h) falls within the ambit of activity 21 in this Notice, in which case that activity applies;
- (i) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.

24. The development of a road—

- (i) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or
- (ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres; but excluding a road—
 - (a) which is identified and included in activity 27 in Listing Notice 2 of 2014;
 - (b) where the entire road falls within an urban area; or
 - (c) which is 1 kilometre or shorter.

26. Residential, retail, recreational, tourism, commercial or institutional developments of 1 000 square metres or more, on land previously used for mining or heavy industrial purposes; — excluding —

- (i) where such land has been remediated in terms of part 8 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies; or
- (ii) where an environmental authorisation has been obtained for the decommissioning of such a mine or industry in terms of this Notice or any previous NEMA notice; or
 - (iii) where a closure certificate has been issued in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for such land.

31. The decommissioning of existing facilities, structures or infrastructure for—

(i) any development and related operation activity or activities listed in this Notice, Listing Notice 2 of 2014 or Listing Notice 3 of 2014;

(ii) any expansion and related operation activity or activities listed in this Notice, Listing Notice 2 of 2014 or Listing Notice 3 of 2014;

(iii)

(iv) any phased activity or activities for development and related operation activity or expansion or related operation activities listed in this Notice or Listing Notice 3 of 2014; or

(v) any activity regardless of the time the activity was commenced with, where such activity:

(a) is similarly listed to activity in (i) or (ii) above; and

(b) is still in operation or development is still in progress; excluding where—

(aa) activity 22 of this notice applies; or

(bb) the decommissioning is covered by part 8 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies.

45. The expansion of infrastructure for the bulk transportation of water or storm water where the existing infrastructure—

(i) has an internal diameter of 0,36 metres or more; or

(ii) has a peak throughput of 120 litres per second or more; and

(a) where the facility or infrastructure is expanded by more than 1 000 metres in length; or

(b) where the throughput capacity of the facility or infrastructure will be increased by 10% or more;

excluding where such expansion—

(aa) relates to the transportation of water or storm water within a road reserve or railway line reserve; or

(bb) will occur within an urban area.

56. The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre—

(i) where the existing reserve is wider than 13,5 meters; or

(ii) where no reserve exists, where the existing road is wider than 8 metres; excluding where widening or lengthening occurs inside urban areas.

Government Notice R325 (Listing Notice 2) listed activities (13, 15, and 16)

13. The physical alteration of virgin soil to agriculture, or afforestation for commercial tree, timber or wood production of 100 hectares or more.

15. The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for—

- (i) the undertaking of linear activity; or
- (ii) maintenance purposes undertaken following a maintenance management plan.

16. The development of a dam where the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, is 5 metres or higher or where the high-water mark of the dam covers an area of 10 hectares or more.

Government Notice R324 (Listing Notice 3) listed activities (4, 12, 14, 18, and 23)

4. The development of a road wider than 4 metres with a reserve of fewer than 13,5 metres.

g. Northern Cape

i. In an estuary;

ii. Outside urban areas:

(aa) A protected area identified in terms of NEMPAA, excluding disturbed areas;

(bb) National Protected Area Expansion Strategy Focus areas;

(cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;

(dd) Sites or areas identified in terms of an international convention;

(ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;

(ff) Core areas in biosphere reserves;

(gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas; or

(hh) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined;

or iii. Inside urban areas:

(aa) Areas zoned for use as public open space;

(bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose; or

(cc) Seawards of the development setback line or within urban protected areas.

12. The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken following a maintenance management plan.

g. Northern Cape

- i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or before the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;
- ii. Within critical biodiversity areas identified in bioregional plans;
- iii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line on even in urban areas; or
- iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had equivalent zoning.

14. The development of—

- (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 10 square metres; or
- (ii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs—
 - (a) within a watercourse;
 - (b) in front of a development setback; or
 - (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;

excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.

g. Northern Cape

- i. In an estuary;
- ii. Outside urban areas:
 - (aa) A protected area identified in terms of NEMPAA, excluding conservancies;
 - (bb) National Protected Area Expansion Strategy Focus areas;
 - (cc) World Heritage Sites;
 - (dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;
 - (ee) Sites or areas identified in terms of an international convention;
 - (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;
 - (gg) Core areas in biosphere reserves;
 - (hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;

(ii) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined;

or iii. Inside urban areas:

(aa) Areas zoned for use as public open space;

(bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority zoned for a conservation purpose; or

(cc) Areas seawards of the development setback line.

18. The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.

g. Northern Cape

i. In an estuary;

ii. Outside urban areas:

(aa) A protected area identified in terms of NEMPAA, excluding conservancies;

(bb) National Protected Area Expansion Strategy Focus areas;

(cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;

(dd) Sites or areas identified in terms of an international convention;

(ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;

(ff) Core areas in biosphere reserves;

(gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;

(hh) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined; or

(ii) Areas within a watercourse or wetland; or 100 metres from the edge of a watercourse or wetland;

or iii. Inside urban areas:

(aa) Areas zoned for use as public open space; or

(bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose.

23. The expansion of—

(i) dams or weirs where the dam or weir is expanded by 10 square metres or more; or

(ii) infrastructure or structures where the physical footprint is expanded by 10 square metres or more; where such expansion occurs—

(a) within a watercourse;

- (b) in front of a development setback adopted in a prescribed manner; or
- (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;

excluding the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.

g. Northern Cape

- i. In an estuary;
- ii. Outside urban areas:
 - (aa) A protected area identified in terms of NEMPAA, excluding conservancies;
 - (bb) National Protected Area Expansion Strategy Focus areas;
 - (cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;
 - (dd) Sites or areas identified in terms of an international convention;
 - (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;
 - (ff) Core areas in biosphere reserves;
 - (gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; or
 - (hh) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined; or
- iii. Inside urban areas:
 - (aa) Areas zoned for use as public open space; or
 - (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose.

An Application Form and Draft Scoping Report will be submitted to the DE&NC. This Scoping Process is being undertaken to identify potential issues.

The principles of environmental management as set out in section 2 of NEMA have been considered. The principles about this activity include:

- People and their needs will be placed at the forefront while serving their physical, psychological, developmental, cultural and social interests. The activity seeks to provide additional employment and economic development opportunities, which are a local and national need – *the proposed activity is expected to have a beneficial impact on people, especially developmental and social benefits, as well as providing additional employment and economic development opportunities.*
- The development will be socially, environmentally and economically sustainable. Where disturbance of ecosystems, loss of biodiversity, pollution and degradation, and landscapes and sites that constitute the nation's cultural heritage cannot be avoided, are minimised and remedied. The impact that the activity will potentially have on these will be considered, and mitigation

measures will be put in place - *potential impacts have been identified and considered, and any further potential impacts will be identified during the public participation process. Mitigation measures will be included in the EMP.*

- Where waste cannot be avoided, it will be minimised and remedied through the implementation and adherence of the Environmental Management Programme (EMP) – *this will be included in the EIR.*
- The use of non-renewable natural resources will be responsible and equitable.
- The negative impacts on the environment and people's environmental rights will be anticipated, investigated and prevented, and where they cannot be prevented, will be minimised and remedied.
- The interests, needs and values of all interested and affected parties will be taken into account in any decisions through the Public Participation Process.
- The social, economic and environmental impacts of the activity will be considered, assessed and evaluated, including the disadvantages and benefits.
- The effects of decisions on all aspects of the environment and all people in the environment will be taken into account, by pursuing what is considered the best practicable environmental option.

3.3 NATIONAL HERITAGE RESOURCES ACT

The protection and management of South Africa's heritage resources are controlled by the National Heritage Resources Act (Act No. 25 of 1999). South African National Heritage Resources Agency (SAHRA) is the enforcing authority.

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

The National Heritage Resources Act requires relevant authorities to be notified regarding this proposed development, as the following activities are relevant:

- *any development or other activity which will change the character of a site exceeding 5 000 m² in extent;*
- *the construction of a road, wall, powerline, pipeline, canal or another similar form of linear development or barrier exceeding 300m in length*

Furthermore, in terms of Section 34(1), no person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the SAHRA, or the authority of the responsible resource. Nor may anyone destroy, damage, alter, exhume or remove from its original position, or otherwise disturb, any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority, without a permit issued by the SAHRA, or a provincial heritage authority, in terms of Section 36 (3). In terms of Section 35 (4), no person may destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object, without a permit issued by the SAHRA, or the authority of the responsible resource.

3.4 EIA GUIDELINE AND INFORMATION DOCUMENT SERIES

The following are the latest guidelines and information Documents that have been consulted:

- Department of Environmental Affairs and Development Planning's (DEA&DP) *Environmental Impact Assessment Guideline and Information Document Series (Dated: March 2013)*:
 - ✓ *Guideline on Transitional Arrangements*
 - ✓ *Generic Terms of Reference for EAPs and Project Schedules*
 - ✓ *Guideline on Alternatives*
 - ✓ *Guideline on Public Participation*
 - ✓ *Guideline on Exemption Applications*
 - ✓ *Guideline on Appeals*
 - ✓ *Guideline on Need and Desirability*
- Department of Environmental Affairs and Tourism (DEAT) *Integrated Environmental Management Information Series*

3.5 NATIONAL WATER ACT

Besides the provisions of NEMA for this EIA process, the proposed development may also require authorizations under the National Water Act (Act NO. 36 of 1998). The Department of Water and Sanitation, who administer that Act, will be a leading role-player in the EIA.

If, and as required by the Department of Water and Sanitation, a Water Use Licence Application (WULA) may be compiled and submitted.

3.6 NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT

The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) is part of a suite of legislation falling under NEMA, which includes the Protected Areas Act, the Air Quality Act, the Integrated Coastal Management Act and the Waste Act. Chapter 4 of NEMBA deals with threatened and protected ecosystems and species and related threatened processes and restricted activities. The need to protect listed ecosystems is addressed (*Section 54*).

3.7 NATIONAL FORESTS ACT

The National Forests Act, 1998 (Act 84 of 1998) (NFA) makes provisions for the management and conservation of public forests.

In terms of section 15(1) of the National Forests Act, 1998, no person may

- (a) cut, disturb, damage or destroy any protected tree; or

- (b) posses, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, or any forest product derived from a protected tree, except
 - (i) under a license granted by the Minister; or
 - (ii) in terms of an exemption from the provisions of this subsection published by the Minister in the Gazette.

3.8 NORTHERN CAPE CONSERVATION ACT, ACT 09 OF 2009

On the 12th of December 2011, the new Northern Cape Nature Conservation Act 9 of 2009 (NCNCA) came into effect, which provides for the sustainable utilization of wild animals, aquatic biota and plants. Schedule 1 and 2 of the Act give extensive lists of specially protected and protected fauna and flora species following this act. The NCNCA is a very important Act in that it put a whole new emphasis on several species not previously protected in terms of legislation.

It also put a new emphasis on the importance of species, even within vegetation classified as “Least Threatened” (following GN 1002 of 9 December 2011, promulgated in terms of the National Environmental Management Biodiversity Act 10 of 2004). Thus, even though a project may be located within a vegetation type or habitat previously not considered under immediate threat, special care must still be taken to ensure that listed species (fauna & flora) are managed correctly.

3.9 THE SPATIAL PLANNING AND LAND USE MANAGEMENT ACT (ACT 16 OF 2013)

The subject area falls under the jurisdiction of the local municipality and the appropriate zoning and subdivision would need to be allocated to permit the development of the land for the intended purpose.

4. ALTERNATIVES

Alternatives to the proposed development are very limited and have therefore not been considered for the following reasons described below.

4.1 SITE ALTERNATIVES

The proposed site is the only viable site available at this stage and the only one that will be investigated in this application. The proposed site for development is located on the applicant's property and therefore, alternative sites are limited. This will be further addressed in the Environmental Impact Report.

4.2 ACTIVITY ALTERNATIVES

Activity alternatives are also very limited with no feasible alternatives besides agricultural development (including the transformation of land for agriculture, as well as the development of a dam, housing, and associated infrastructure). Due to the contribution of the agricultural sector (and more specifically grape production), the proposed agricultural development on the property is, therefore, the only activity considered. These will be investigated during the Environmental Impact Report phase.

4.3 LAYOUT ALTERNATIVES

Various layout alternatives will be investigated during the Environmental Impact Report. These will be compiled with input from the applicant and its requirements, as well as input and/or recommendations of the various specialists, as well as input from Interested and Affected Parties, including the community.

4.4 NO-GO ALTERNATIVE

This is the option of not developing the proposed agricultural development.

Although the no-go development might result in no potential negative environmental impacts, the direct and indirect socio-economic benefits of not constructing the agricultural development will not be realised. The contribution of the agricultural development to the GDP of the Khâi-Ma Local Municipality, as well as the creation of employment and skills development opportunities, will not be realised. These potential negative and/or positive environmental impacts will be assessed in the Environmental Impact Report.

5. SITE DESCRIPTION

5.1 LOCATION

The proposed Styr-Kraal Agricultural Development, and associated infrastructure, will be located on Remaining Extent of Portion 0 of Farm Styr-Kraal, Farm No. 81, Pofadder, situated within Ward 1 of the Khâi-Ma Local Municipality, Namakwa District Municipality (Figure 4). The total area to be developed measures approximately 155 (one hundred and fifty-five) hectares. The site is located approximately 51km north of Pofadder at the following coordinates: 28°40'39.90"S; 19°31'2.93"E. The proposed agricultural development graphical represent the constituents of the proposed development

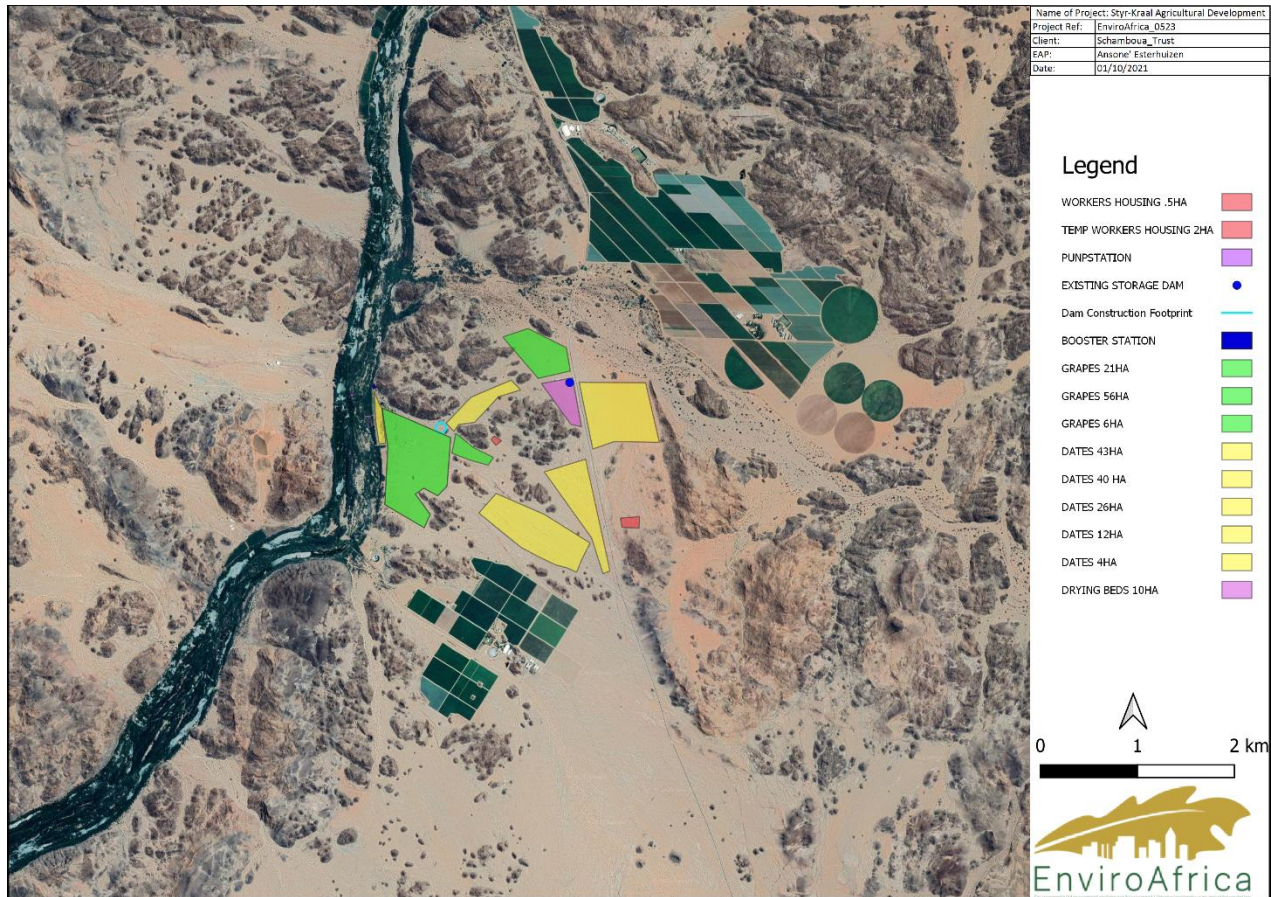


Figure 4. 1: 50 000 Locality Map showing Location of the proposed Styr-Kraal Agricultural Development. QGIS, version 3.10.

5.2 VEGETATION

According to the Vegetation map of South Africa, Lesotho and Swaziland (Mucina & Rutherford, 2006, as updated in the 2012 beta version), the site is located within the Lower Gariep Broken Veld and Lower Gariep Alluvial Vegetation types. These vegetation types are classified as Least Threatened (LT).

According to Mucina and Rutherford (2006), the *Lower Gariep Broken Veld* vegetation type comprises sparse vegetation dominated by shrubs and dwarf shrubs, along with perennial grasses and herbs. Important Taxa associated with the Lower Gariep Broken Veld include;

Succulent Trees: *Aloe dichotoma* var. *dichotoma*. *Small Trees:* *Acacia mellifera* subsp. *detinens*, *Commiphora gracilifrons*, *Ficus cordata*, *Pappea capensis*, *Rhus populifolia*, *Ziziphus mucronata* subsp. *mucronata*.

Tall Shrubs: *Rhigozum trichotomum*, *Adenolobus garipensis*, *Antherothamnus pearsonii*, *Cadaba aphylla*, *Caesalpinia bracteata*, *Ehretia rigida* subsp. *rigida*, *Nymanina capensis*, *Rhigozum obovatum*, *Rhus burchellii*.

Epiphytic Semiparasitic Shrub: *Tapinanthus oleifolius*.

Succulent Shrubs: *Ceraria namaquensis*, *Cryptolepis decidua*W, *Euphorbia avasmontana*, *E. gregaria*W, *Kleinia longiflora*, *Lycium bosciifolium*, *Zygophyllum dregeanum*.

Woody Succulent Climber: *Sarcostemma viminale*. *Low Shrubs:* *Blepharis mitrata*, *Aizoon schellenbergii*, *Aptosimum albomarginatum*, *A. lineare*, *A. marlothii*, *Barleria rigida*, *Berkheya spinosissima* subsp. *namaensis*, *Dyerophytum africanum*, *Hermannia spinosa*, *H. vestita*, *Hibiscus elliotiae*, *Indigofera heterotricha*, *Limeum aethiopicum*, *Lophiocarpus polystachyus*, *Monechma spartioides*, *Phaeoptilum spinosum*, *Phyllanthus maderaspatensis*, *Polygala seminuda*, *Ptycholobium biflorum* subsp. *biflorum*, *Sericocoma avolans*, *Solanum capense*, *Stachys burchelliana*, *Talinum arnotii*, *Tetragonia arbuscula*, *Zygophyllum rigidum*.

Semiparasitic Shrub: *Thesium lineatum*. *Graminoids:* *Aristida adscensionis* (d), *Enneapogon desvauxii*, *E. scaber*, *Eragrostis nindensis*, *Stipagrostis obtusa*, *S. uniplumis*, *Aristida congesta*, *A. engleri*, *Cenchrus ciliaris*, *Digitaria eriantha*, *Enneapogon cenchroides*, *Eragrostis annulata*, *E. lehmanniana*, *E. porosa*, *Schmidtia kalahariensis*, *Setaria verticillata*, *Sporobolus fimbriatus*E, *Stipagrostis anomala*, *S. ciliata*, *Tragus berteronianus*, *Triraphis ramosissima*.

Herbs: *Forsskaolea candida*, *Acanthopsis hoffmannseggiana*, *Barleria lichtensteiniana*, *Chamaesyce glanduligera*, *Chascanum garipense*, *Cleome angustifolia* subsp. *diandra*, *Codon royenii*, *Dicoma capensis*, *Garuleum schinzii*, *Rogeria longiflora*, *Sesamum capense*, *Tribulus zeyheri*, *Trichodesma africanum*.

Succulent Herbs: *Orbea lutea* subsp. *lutea*, *Stapelia flavopurpurea*.

Endemic Taxon Succulent Shrub: *Ruschia pungens*.

According to Mucina and Rutherford (2006), the *Lower Gariep Alluvial Vegetation* type comprises of flat, alluvial terraces and riverine islands supporting riparian thickets dominated by *Tamarix usneoides*, *Ziziphus mucronata*, and *Euclea pseudebenus*, as well as reedbeds dominated by *Phragmites australis*). Important Taxa associated with the Lower Gariep Alluvial Vegetation type include;

Small Trees: *Acacia karroo*, *Euclea pseudebenus*, *Salix mucronata* subsp. *Mucronata*, *Schotia afra* var. *angustifolia*, *Ziziphus mucronata*, *Acacia erioloba*, *Combretum erythrophyllum*, *Ficus cordata*, *Maerua gilgii*, *Prosopis glandulosa* var. *glandulosa*, and *Rhus lancea*.

Tall Shrubs: *Gymnosporia linearis*, *Tamarix usneoides*, *Ehretia rigida*, *Euclea undulata*, *Sisyndite spartea*.

Low Shrub: *Asparagus larinus*.

Woody Climber: *Asparagus retrofractus*.

Succulent Shrub: *Lycium bosciifolium*.

Herb: *Chenopodium olukondae*. *Reed beds Megagraminoid:* *Phragmites australis*.

Low Shrubs: *Tetragonia schenckii*, *Litogyne gariepina*. **Graminoids:** *Cynodon dactylon*, *Setaria verticillata*, *Cenchrus ciliaris*, *Cyperus laevigatus*, *Eragrostis echinochloidea*, *Leucophrys mesocoma*, *Polypogon monspeliensis*, *Stipagrostis namaquensis*.

Herbs: *Amaranthus praetermissus*, *Coronopus integrifolius*, *Frankenia pulverulenta*, *Gnaphalium confine*, *Pseudognaphalium luteo-album*.

A Botanical Impact Assessment will be conducted by the Botanical Specialist, Mr Peet Botes. Findings and recommendations will be incorporated into the Draft EIR.

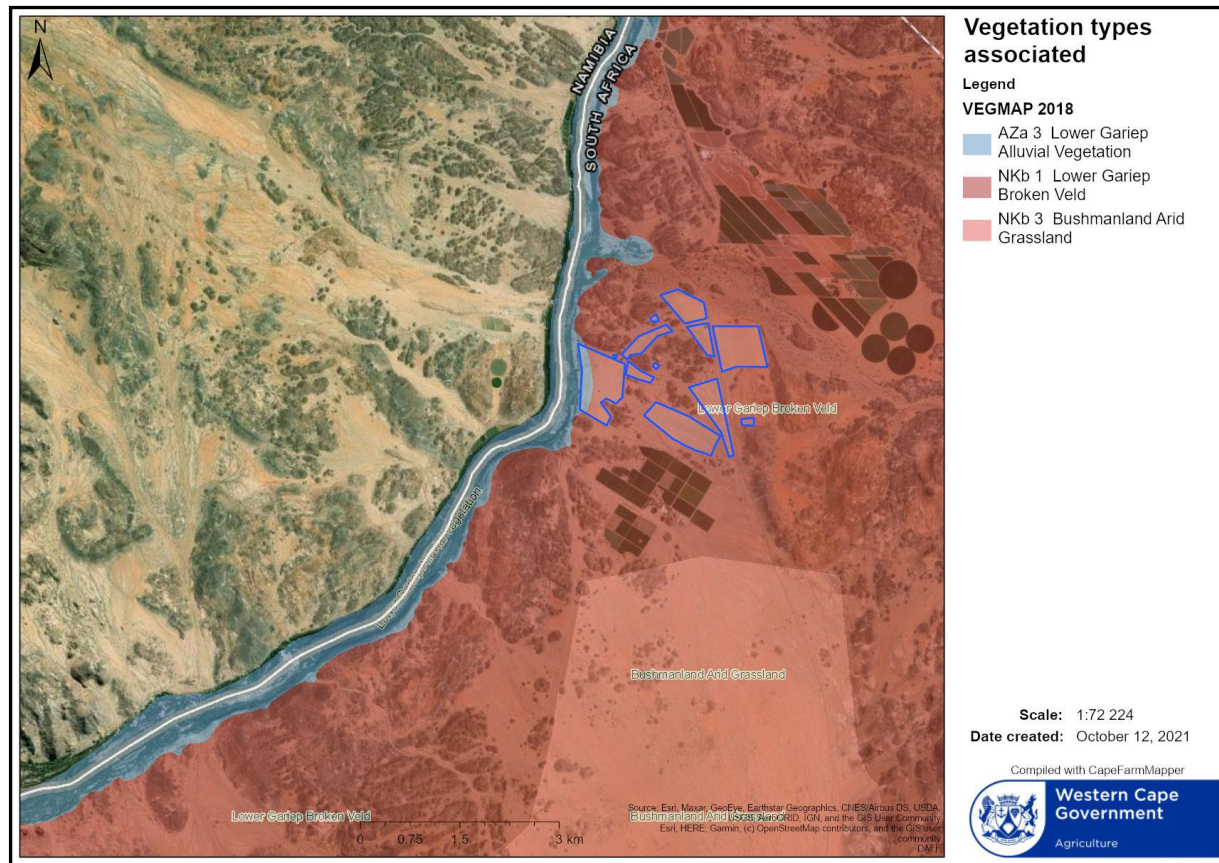


Figure 5: Vegetation types associated with the proposed Styr-Kraal Agricultural Development. Source: CapeFarmMapper.

According to the Northern, Cape CBA maps the proposed site falls within a CBA area (Figure 6). 2016, Northern Cape CBA Map (Figure 6) identifies biodiversity priority areas, called Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs), which, together with protected areas, are important for the persistence of a viable representative sample of all ecosystem types and species as well as the long-term ecological functioning of the landscape as a whole (Holness & Oosthuysen, 2016). The 2016 Northern Cape Critical Biodiversity Area (CBA) Map updates, revises and replaces all older systematic biodiversity plans and associated products for the province (including the Namakwa District Biodiversity Sector Plan, 2008). Priorities from existing plans such as the Namakwa District Biodiversity Plan, the Succulent Karoo Ecosystem Plan, National Estuary Priorities, and the National Freshwater Ecosystem Priority Areas were incorporated. Targets for terrestrial ecosystems were based on established national targets, while targets used for other features were aligned with those used in other provincial planning processes. However, there

is no alternative on the applicant’s land that will not impact the CBA. The potential impacts of the proposed Styr-Kraal Agricultural Development will be identified and addressed in the Draft EIR.

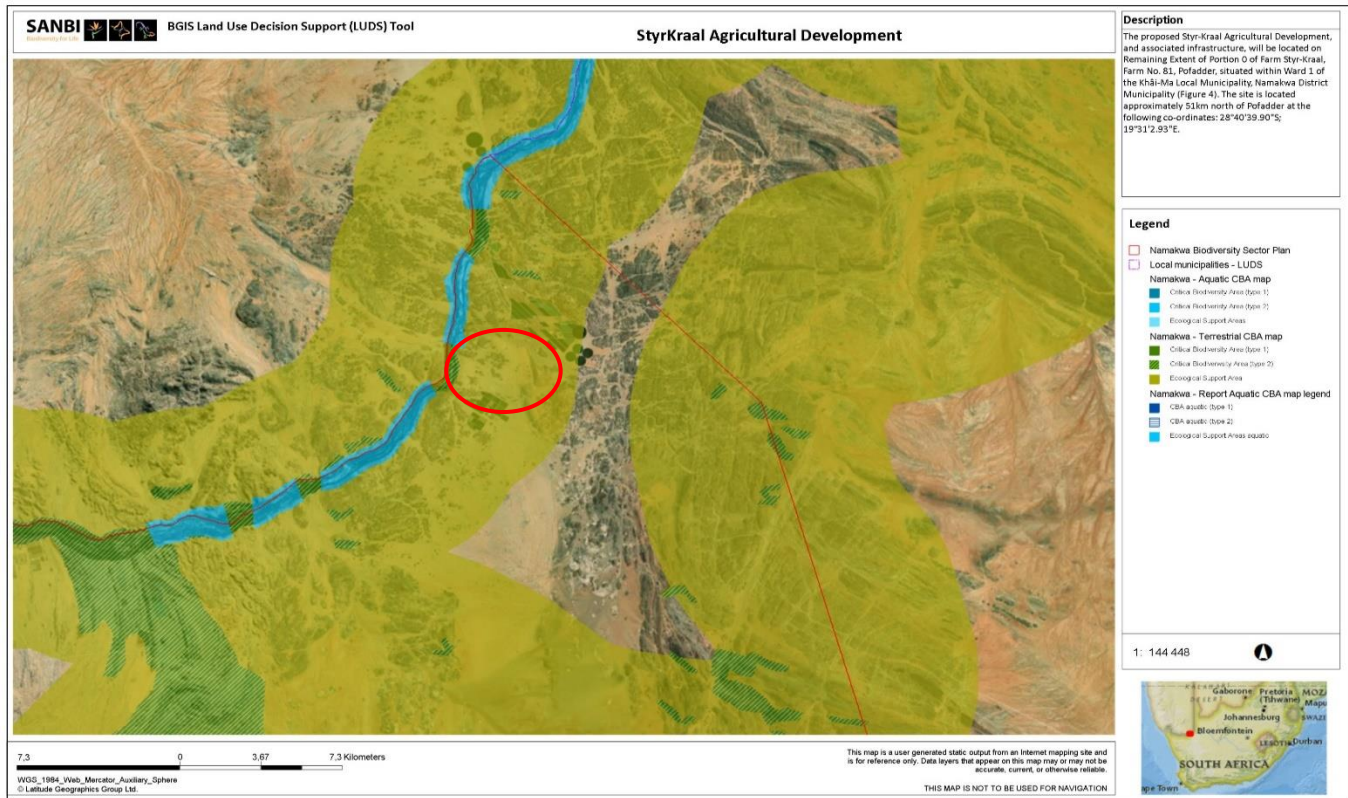


Figure 6. Critical Biodiversity Area (CBA) associated with the Styr-Kraal Agricultural Development (circled in red).

5.3 FRESHWATER

From the SANBI National Freshwater Ecosystem Priority Areas map (see Figure 7 below), ‘one’ NFEPA wetland was identified during the desktop study. This NFEPA wetland is associated with the Orange River (Figure 7). The proposed site for development is located within the watercourse (namely the identified NFEPA wetland). A watercourse (non-perennial river) is located north-north-east of the proposed development, approximately 55m away from the watercourse. The proposed development footprint is also located within 32m of two small, non-perennial drainage lines. It must be noted that the proposed development footprint falls within an artificial wetland (Figure 7).

A Fresh water Impact Assessment will be conducted by the Water Scientist, Dr Dirk van Driel. Findings and recommendations will be incorporated into the Draft EIR.

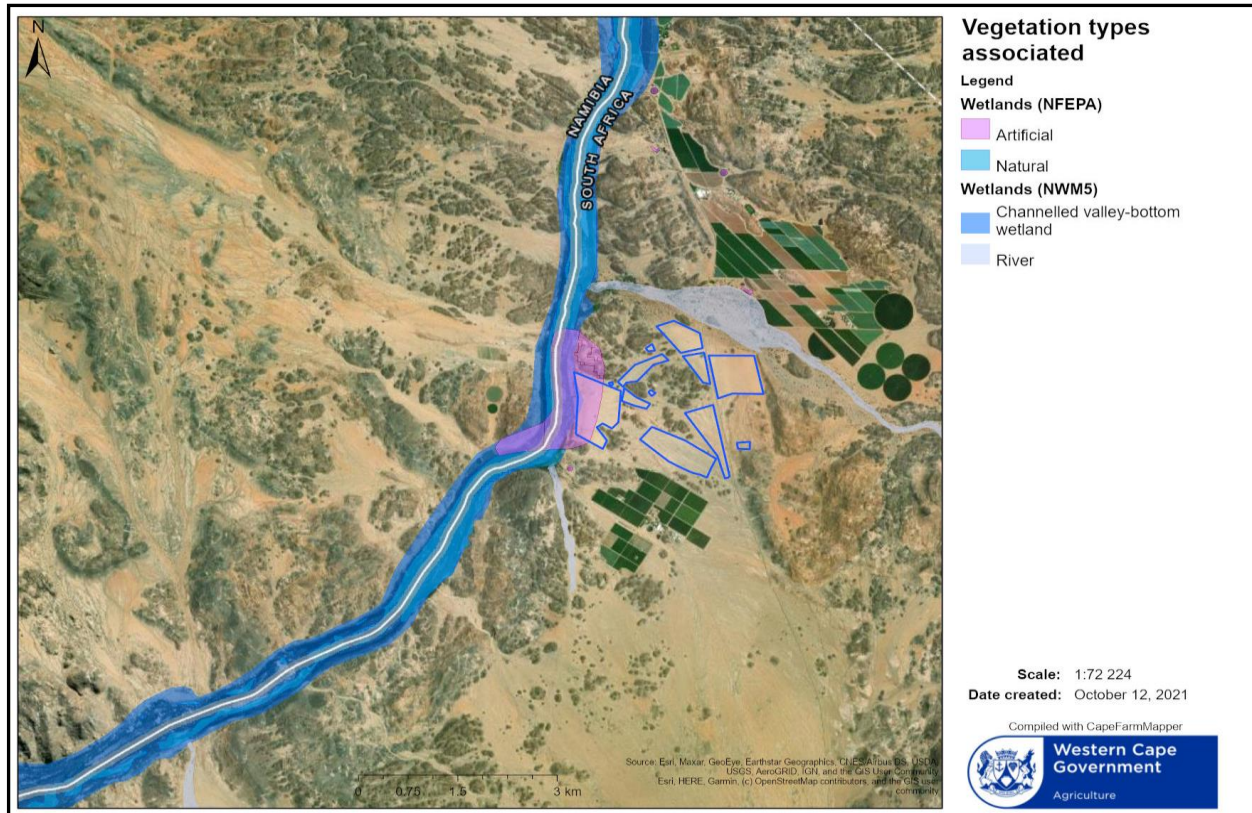


Figure 7: Water resources map. An NFEPA wetland was identified within 500m of the proposed location for the Styr-Kraal Agricultural Development.

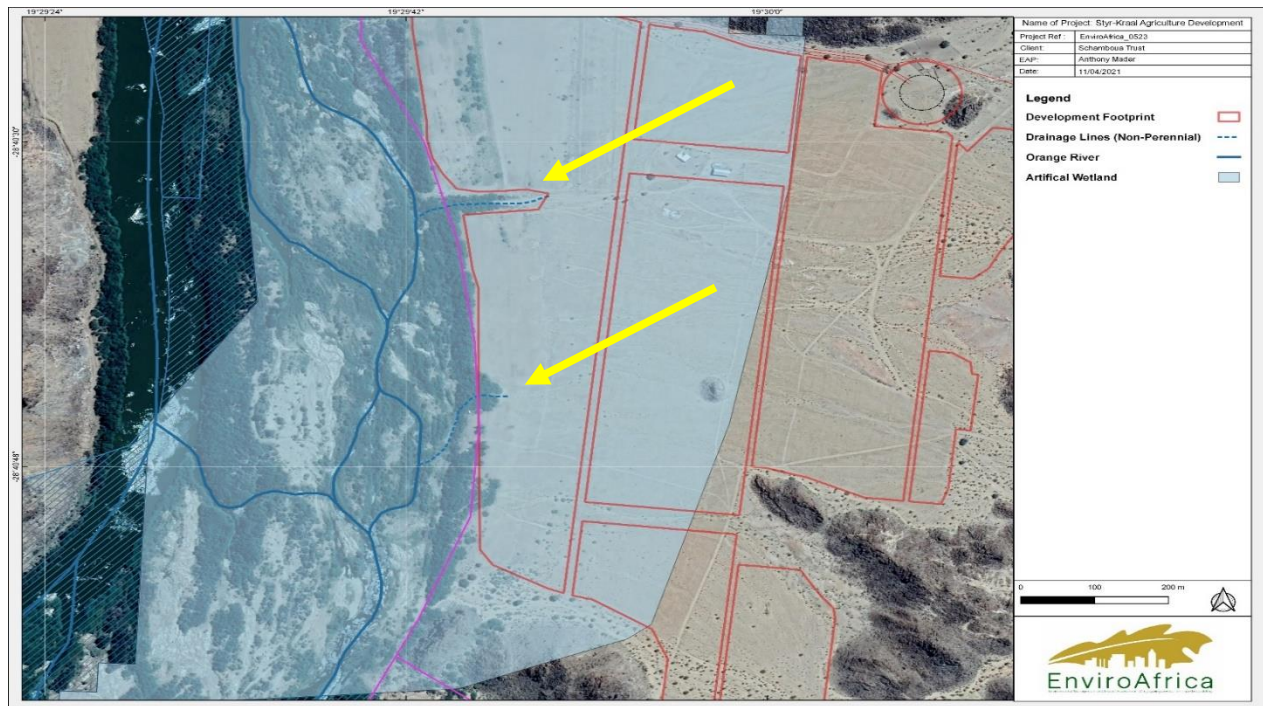


Figure 8: non-perennial drainage lines (yellow arrows) associated with the development footprint.

5.4 CLIMATE

Climate data for Onseepkans was used. Average temperatures within the District Municipality range from 45°C (summer) to -2°C (winter). The area also receives erratic precipitation with averages of 90mm annual precipitation, typically in late summer. The area is therefore considered arid (< 400mm). Limited frost events enabling crops to be cultivated under irrigation.

5.5 SOCIO-ECONOMIC CONTEXT

The population for Khâi-Ma was estimated at 13 070 people (2016) with a growth rate of approximately 0.83%. Approximately 11% of the Northern Cape population reside in the Khâi-Ma Local Municipality. Objectives stipulated in the Khâi-Ma Local Municipality's IDP⁴ objectives with regards to the agriculture sector include

- (i) creating an additional 643 000 direct jobs and 326 000 indirect jobs within the agriculture, agro-processing, and related sectors by 2030, and
- (ii) maintaining a positive trade balance for primary and processed agricultural products.

Irrigated agriculture remains a key sector, within the Northern Cape province, relative to the sector contribution to GDP and the socioeconomic benefits of such agriculture on surrounding communities. The most important fruit commodity produced in the Northern Cape are grapes, namely table grapes and raisins – contributing to approximately 95% of the total fruit value share⁵. This highlights the contribution of agriculture, and more specifically grape agriculture, to the socioeconomic development of the Northern Cape province. Thus, there is a need to grow the grape industry within the Khâi-Ma Local Municipality to further socio-economic development within the surrounding communities. There is also a need to identify and support the sustainability and growth of the agricultural sector, as highlighted within the Khâi-Ma Municipality's IDP.

The operation of the proposed dam (28 000m³) will provide water security for irrigation of the dates and vineyards amid climate change, as well as enable better utilisation of an existing water use right and scare resource. The recent drought in the Northern Cape and uncertainties of the impact of climate change are some drivers of this project. Various climatic drivers, namely higher temperatures and drier conditions further exacerbate the impact of drought events on the agricultural sector⁶, which require careful planning and adequate responses to sustain and grow the agricultural sector. The proposed dam will ensure an adequate supply of water for the irrigation of the proposed croplands.

5.6 HERITAGE FEATURES

Due to the nature and size of the proposed development, potential heritage resources may be affected by the development. Heritage resources include any of the following, as defined by the National Heritage Resources Act (Act 25 of 1999):

⁴<https://khaima.gov.za/wp-content/uploads/2020/05/KH%C3%A2I-Ma-Revised-IDP-2020-21.docx>

⁵E.g., Taljaard, P.R., 2007. The macro economy and irrigation agriculture in the Northern Cape Province of South Africa (Doctoral dissertation, University of the Free State). Accessible at the following link: <https://scholar.ufs.ac.za/bitstream/handle/11660/4637/TaljaardPR.pdf?sequence=1&isAllowed=y>

⁶Zscheischler, J., Martius, O., Westra, S., Bevacqua, E., Raymond, C., Horton, R.M., van den Hurk, B., AghaKouchak, A., Jézéquel, A., Mahecha, M.D. and Maraun, D. 2020. A typology of compound weather and climate events. *Nature reviews earth & environment*, pp.1-15.

- living heritage as defined in the National Heritage Council Act No 11 of 1999 (cultural tradition; oral history; performance; ritual; popular memory; skills and techniques; indigenous knowledge systems; and the holistic approach to nature, society and social relationships);
- Ecofacts (non-artefactual organic or environmental remains that may reveal aspects of past human activity; definition used in KwaZulu-Natal Heritage Act 2008);
- places, buildings, structures and equipment;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds;
- public monuments and memorials;
- sites of significance relating to the history of slavery in South Africa;
- movable objects, but excluding any object made by a living person; and
- battlefields.

A Heritage Impact Assessment will be conducted by the archaeologist and lead CRM specialist, Mr Jan Engelbrecht. Findings and recommendations will be incorporated into the Draft EIR.

6. SERVICES

Due to the scale of the development, services for the development will be investigated.

6.1 WATER

Water is to be abstracted from the Orange River. As per the NWA, section 21(a) will be required for the abstraction of water from a watercourse. Therefore, a Water Use authorisation will be applied for from the Department of Water and Sanitation (DWS). Abstracted water will be stored in the proposed dam to be constructed. Therefore, section 21(b) will also be applied. Stored water will be used for the irrigation of crops, namely grapes and dates (please refer to Figure 2). Currently, the property has been granted 28ha of water rights against the property.

6.2 SEWER

The availability of sewer services, the potential upgrades to existing infrastructure or the potential development of new infrastructure to adequately service the proposed development will need to be investigated.

6.3 ROADS

Existing roads will be used to access the proposed development.

6.4 STORMWATER

The internal stormwater network and links and upgrades to the existing external stormwater network will need to be determined and addressed in the Bulk Engineering Services Reports. This will be determined once a conceptual site layout plan has been developed.

6.5 SOLID WASTE (REFUSE) REMOVAL

Refuse removal will be via the Municipal waste stream and disposed of at the nearest municipal bulk solid waste disposal site. Sufficient capacity to adequately service the proposed development will need to be confirmed by the engineers and municipality.

6.6 ELECTRICITY

The proposed internal electrical network, electrical infrastructure requirements, upgrades to the existing external electrical network, including the provider and confirmation of sufficient capacity will need to be determined and addressed in the Bulk Engineering Services Reports.

7. ENVIRONMENTAL ISSUES AND POTENTIAL IMPACTS

Environmental issues were raised through informal discussions with the project team, specialists, and authorities. All issues raised will be assessed in the specialist reports and will form part of the Environmental Impact Report. Additional issues raised during the public participation will be listed in the Final Scoping Report.

The following potential issues have been identified:

7.1 BOTANICAL

A botanical impact assessment will be conducted to determine if there is any sensitive or endangered vegetation on the proposed site. Due to the size of the development (not exceeding 200ha), there will be a loss of vegetation during the construction phase of the project. Therefore, the Botanical Impact Assessment will describe and assess the botanical sensitivity of the area. The terms of reference for this study require a baseline analysis of the flora of the property, including the broad ecological characteristics of the site.

The botanical assessment will include the following:

- The significance of the potential impact of the proposed project, alternatives, and related activities – with and without mitigation – on biodiversity pattern and process at the site, landscape and regional scales.
- Recommended actions that should be taken to prevent or, if prevention is not feasible, to mitigate impacts.

7.2. FRESHWATER

Freshwater ecosystems were identified on desktop analysis, and due to the size and nature of the development, a freshwater impact assessment will be conducted. Any potential impacts to the Orange River will also be investigated.

The terms of reference for the Freshwater assessment are as follows:

- Literature review and assessment of existing information
- Site Assessment of the proposed activities and impact on the associated freshwater systems. This will include an assessment of the freshwater ecological condition, using river health indices such as in-stream and riparian habitat integrity, aquatic macro-invertebrates and riparian vegetation to determine set back lines and geomorphological condition of the streams, which will then determine the overall Eco status of the streams and provide data that will inform the Water Use Licence Application of the project.
- Describe ecological characteristics of freshwater systems and compile a report based on the data and information collected in the previous two tasks, describe ecological characteristics of the freshwater systems, comment on the conservation value and importance of the freshwater systems and delineate the outer boundary of the riparian zones/riverine corridors.
- Evaluate the freshwater issues on the site and propose mitigation measures and measures for the rehabilitation of the site as well as setback lines for future development.

- Compilation of the documentation for submission of the water use authorisation application (WULA) to the Department of Water and Sanitation (if deemed necessary).

7.3. HERITAGE

The possible impact on heritage resources has been identified as a possible environmental impact as a result of the development.

A Heritage Impact Assessment has been conducted within the development footprint.

The terms of reference for the heritage and archaeological study were as follows:

- To determine whether there are likely to be any important archaeological sites or remains that might be impacted by the proposed development;
- To identify and map archaeological sites/remains that might be impacted by the proposed development;
- To assess the sensitivity and conservation significance of archaeological sites/remains in the inundation area;
- To assess the status and significance of any impacts resulting from the proposed development, and
- To identify measures to protect any valuable archaeological sites/remains that may exist within the estimated inundation area.

Based on the assessment of the potential impact of the development on the identified heritage, the following recommendations were made by the Heritage Specialists, taking into consideration any existing or potential sustainable social and economic benefits:

1. No significant archaeological sites, features, or material were identified within the surveyed sections of the agricultural development, and the project can continue from a heritage perspective.
2. The graveyard site (28°40'55.50"S; 19°29'58.70"E) is situated within a proposed grape cultivation footprint. The site is graded as IIIB and is of High Local Significance. It is recommended that the graves be fenced off with the inclusion of a 50m buffer/safety zone.
3. Should it be impossible to avoid the graveyard site during the cultivation of the plot of land in which the graves are situated, mitigation in the form of grave relocation could be undertaken. This is, however, a lengthy and costly process. Grave relocation specialists should be employed to manage the liaison process with the communities and individuals who by tradition or familial association might have an interest in these graves or burial ground; as well as manage the permit acquisition from the SAHRA Burial Grounds and Graves (BGG) Unit and the arrangements for the exhumation and re-interment of the contents of the graves, at the cost of the applicant and following any regulations made by the responsible heritage resources authority.
4. Due to the low palaeontological significance of the area, no further palaeontological heritage studies, ground-truthing and/or specialist mitigation are required. It is considered that the development of the proposed development is deemed appropriate and feasible and will not lead to detrimental impacts on the palaeontological resources of the area (Butler 2020). If fossil remains or trace fossils are discovered during any phase of construction, either on the surface or exposed

by excavations the Chance Find Protocol (Appendix A/11) must be implemented by the Environmental Control Officer (ECO) in charge of these developments. These discoveries ought to be protected, and the ECO must report to SAHRA (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za) so that mitigation can be carried out by a palaeontologist (Butler 2020).

5. Although all possible care has been taken to identify sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the assessment. If during construction, any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA. If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contacted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA. UBIQUE Heritage Consultants and its personnel will not be held liable for such oversights or costs incurred as a result of such oversights.

7.4. VISUAL IMPACT

The potential impact on the sense of place of the proposed development will also be considered. However, due to the nature of the activity, the surrounding land-uses, and that the sense of place is not expected to be significantly altered by the proposed development, no further studies are suggested.

7.5. OTHER ISSUES IDENTIFIED

Any further issues raised during the public participation process or by the Competent Authority not mentioned in this section will be dealt with during the EIA phase.

8. DETAILS OF THE PUBLIC PARTICIPATION PROCESS

Potential Interested and Affected Parties (I&APs) have been and will be identified throughout the process. Landowners adjacent to the proposed site, relevant organs of state, organizations, ward councillors and the Local and District Municipality were added to this database. A complete list of organisations and individual groups identified to date is shown in **Appendix 1**.

Public Participation will be conducted for the proposed development following the requirements outlined in Regulation 41 of the NEMA EIA Regulations 2014. The issues and concerns raised during the scoping phase will be dealt with in the EIA phase of this application. As such each subsection of Regulation 41 contained in Chapter 6 of the NEMA EIA Regulations 2014 will be addressed separately to thereby demonstrating that all potential Interested and Affected Parties (I&AP's) were notified of the proposed development.

R54 (2) (a):

R41 (2) (a) (i): The site notices (A2 and A3 sizes) were placed at different locations around the project site as well as at the municipality office in town.

The posters contained all details as prescribed by R41(3) (a) & (b) and the size of the on-site poster was at least 60cm by 42cm as prescribed by section R41 (4) (a).

R41 (2) (a) (ii): N/A. There is no alternative site.

R41 (2) b):

R41 (2) (b) (i): N/A. The Applicant is the landowner

R41 (2) (b) (ii): Notification letters will be circulated to residents adjacent to/within proximity of the project site. **Appendix 1C**

R41 (2) (b) (iii): An initial notification letter will be sent to the municipal Ward councillor at the !Kheis Local Municipality, for the ward in which the site is situated.

R41 (2) (b) (iv): No notification letter will be sent to the !Kheis Local Municipality as the municipality is the Applicant

R54 (2) (b) (v): The Draft Scoping Report and notification letters will be sent to the following organs of the state having jurisdiction in respect of any aspect of the activity:

- Department of Water and Sanitation

- Department of Agriculture and Land Reform
- Department of Roads and Public Works
- Department of Agriculture, Forestry and Fisheries
- Department of Cooperative Governance, Human Settlements and Traditional Affairs
- SANRAL
- Department of Environment and Nature Conservation
- South African Heritage Resources Agency

R41 (2) (c) (i): An advertisement was placed in the local newspaper.

R41 (2) (d): N/A

R41 (6):

R41 (6) (a): All relevant facts in respect of the application were made available to potential I&AP's.

R41 (6) (b): I&AP's will be given more than 30-days to register and/or comment on the Draft Scoping Report.

R42 (a), (b), (c) and R43(2): A register of interested and affected parties were opened, maintained and is available to any person requesting access to the register in writing.

Please find attached **Appendix 1:**

- Proof of Notice boards, advertisements and notices that were sent out
- List of potential interested and affected parties
- Summary of issues raised by interested and affected parties

9. PLAN OF STUDY FOR THE EIA

9.1. TASKS TO BE UNDERTAKEN

Due to the nature of the proposed development, several activities will still need to be undertaken during the next phase of the project. The proposed process is as described as follows (This follows from a Scoping process to be accepted by the D: E&NC):

The NEMA Application Form will be submitted to D: E&NC along with the Draft Scoping Report which will be available for a 60-day comment period starting from the **26th April 2021 - 25th May 2021**. Comments received during the Public Participation Process will be incorporated into the Final Scoping Report, be submitted to D: E&NC for a decision.

The following is a list of tasks to be performed as part of the EIA Process. Should the process be modified significantly, changes will be copied to D: E&NC.

Table 3. Proposed plan of study and tasks to be undertaken.

Completed	
In progress	
To be completed	
Behind Schedule	

Key for Table 3 To determine Progress

No	Action	Timeline	Progress
1	Clarification meeting with client and appointment of environmental assessment practitioner (EAP) for EIA and environmental authorisation (EA) application	17 th April 2020	
2	Appointment of specialists for EIR assessments	7 th May 2020	
	Botanical Specialist		
	Freshwater Specialist		
	Archaeological Specialist		
3	Draft Scoping Report compilation	01 - 06 October 2021	
4	EAP site visit	19 th May 2020	
5	Public participation (PP): <ul style="list-style-type: none"> - Letter drops (Adjacent Landowner Notification); - Poster placement (Public notice board at the !Kheis Local Municipality, public notice board of AgriMark (Groblershoop), Municipal Offices in Boegoeberg, Aunt Dolletjies Municipal Library in Boegoeberg, different conspicuous locations along the boundary of 	19 th May 2020	

	<p>the proposed site for development (with a lot of foot traffic), and three tuckshops/ stores.</p> <ul style="list-style-type: none"> - Advertisement publication (<i>published on 11th June 2020</i>) - Notified ward councillor. <p>PP comment period must be a minimum of 60 days⁷</p>		
6	Specialist site visits	Botanical Assessment (Mr Peet Botes)	18-22 nd May 2020
		Freshwater Assessment (Dr Dirk Van Driel)	18-22 nd May 2020
		Archaeological Assessment (Mr Jan Engelbrecht)	18-31 st May 2020
7	Advert comment period ends (<i>60-day comment period as per new directions</i>)	14 th August 2020	
Application and Scoping Phase			
8	Application Form Compilation		
9	EAP to compile the draft Scoping Report (SR) (incl. the Plan of Study for EIA) and submit with Application Form (7 days)	18 October 2021	
10	If in order, the Department to acknowledge the application. (10 Days to acknowledge)	18 - 28 October 2021	
11	EAP to notify I&APs (incl. the State departments) EAP to notify the registered I&APs (incl. the State departments) of the availability of the draft SR. (7 Days)	18 – 24 October 2021	
12	Commenting 30 days + 30days for I&APs and State departments to comment. (60 days excluding closure period in December from 15 th Dec – 05 Jan)	25 October 2021 – 13 January 2022	
13	EAP to consider the comments received and complete the final SR. (4 days)	18 January 2022	
14	Following the commenting period, the EAP to submit the Final SR together with any comments received on the final SR to the Department (within 74 days of submission of the Application Form)	Before 27 January 2022	
15	Department to acknowledge SR & Plan of Study for EIA. (10 Days)	27 January – 06 February 2022	
16	If in order, the Department to accept the SR & Plan of Study for EIA (within 43 days + 30 days of receipt of Final SR)	10 April 2022	
Application and Scoping Phase			
17	EAP to undertake the EIA and compile the draft EIA Report (“EIAR”) (including the draft EMP) (40 Days)	February – April 2022 (upon Departments acceptance of Scoping report)	

⁷

If extended PP period is still required due to lockdown regulations, this will be taken into account and may affect or delay dates.

18	EAP to notify registered I&APs (incl. the State departments) of the availability of the draft EIAR for comment. (7 days)	10 – 17 April 2022	
19	Commenting 60 days for I&APs and State departments. (60 days)	17 April – 16 June 2022	
20	EAP to consider the comments received and complete the final EIAR. (7 days)	23 June 2022	
21	Following the commenting period the EAP to submit the final EIR together with any comments received on the final EIR to the Department.	No later than 30 June 2022	
22	Department to acknowledge EIR. (10 days)	11 July 2022	
23	After having received the EIR, the Department to decide whether to grant or refuse Environmental Authorisation (within 107 days)	October 26 2022	
24	Applicant/EAP to notify I&APs of outcome and if authorised may only commence 20 days after the date of the authorisation. (20 days)	November 15 2022	

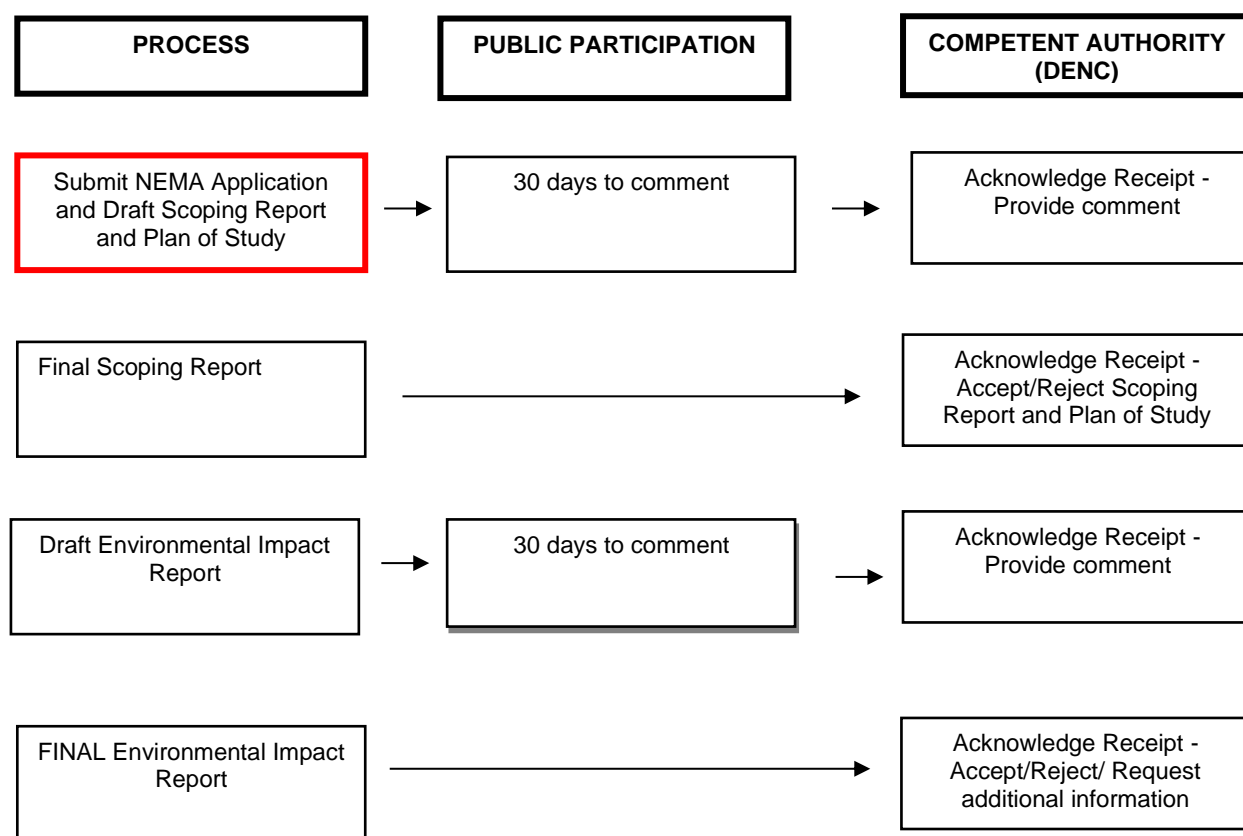


Figure 9. Summary of the EIA process and public participation process. The red indicates the stages where the competent authority will be consulted during the process.

9.2. PUBLIC PARTICIPATION AND INTERESTED AND AFFECTED PARTIES

Please refer to Figure 6 to see where the public participation process is present in the environmental impact assessment. The Interested and Affected Parties will have a chance to view and comment on all the reports that are submitted. The figures also indicated what timeframes apply to what stage in the process. If required, meetings with key stakeholders will be held.

At the end of the comment period, the EIR will be revised in response to feedback received from I&APs. All comments received and responses to the comments will be incorporated into the Final Environmental Impact Report (EIR). The Final EIR will then be submitted to D: E&NC for consideration and decision-making.

Correspondence with I&APs will be via post, fax, telephone, email and newspaper advertisements.

Should it be required, this process may be adapted depending on input received during the ongoing process and as a result of public input. D: E&NC will be informed of any changes in the process.

9.3. CRITERIA FOR SPECIALIST ASSESSMENT OF IMPACTS

As a result of the environmental issues and potential impacts identified in *Section 6*, the need for the following specialist studies has been identified:

- Biodiversity Assessment
- Freshwater Assessment
- Heritage Impact Assessment

The impacts of the proposed activity on the various components of the receiving environment will be evaluated in terms of duration (time scale), extent (spatial scale), magnitude and significance as outlined in Table 1. These impacts could either be positive or negative.

The magnitude of an impact is a judgment value that rests with the individual assessor while the determination of significance rests on a combination of the criteria for duration, extent and magnitude. Significance this is also a judgment value made by the individual assessor.

Table 4. Criteria used for evaluating impacts

Criteria	Category
Nature of impact	This is an evaluation of the effect that the construction, operation and maintenance of a proposed dam would have on the affected environment. This description should include what is to be affected and how.
Duration (Predict whether the lifetime of the Impact will be temporary (less than 1 year) short term (0 to 5 years); medium-term (5 to 15 years); long term (more than 15 years, with the Impact ceasing after full	<p>Temporary: < 1 year (not including construction)</p> <p>Short-term: 1 – 5 years</p> <p>Medium term: 5 – 15 years</p> <p>Long-term: >15 years (Impact will stop after the operational or running life of the activity, either due to natural course or by human interference)</p>

<p>implementation of all development components with mitigations); or permanent.</p>	<p>Permanent: Impact will be where mitigation or moderation by natural course or by human interference will not occur in a particular means or a particular period that the impact can be considered temporary</p>
<p>Extent (Describe whether the impact occurs on a scale limited to the site area; limited to the broader area; or on a wider scale)</p>	<p>Site-Specific: Expanding only as far as the activity itself (<i>onsite</i>)</p> <p>Small: restricted to the site's immediate environment within 1 km of the site (<i>limited</i>)</p> <p>Medium: Within 5 km of the site (<i>local</i>)</p> <p>Large: Beyond 5 km of the site (<i>regional</i>)</p>
<p>Intensity (Describe whether the magnitude (scale/size) of the Impact is high; medium; low, or negligible. The specialist study must attempt to quantify the magnitude of impacts, with the rationale used explained)</p>	<p>Very low: Affects the environment in such a way that natural and/or social functions/processes are not affected</p> <p>Low: Natural and/or social functions/processes are slightly altered</p> <p>Medium: Natural and/or social functions/processes are notably altered in a modified way</p> <p>High: Natural and/or social functions/processes are severely altered and may temporarily or permanently cease</p>
<p>Probability of occurrence Describe the probability of the Impact occurring as definite (Impact will occur regardless of mitigations)</p>	<p>Improbable: Not at all likely</p> <p>Probable: Distinctive possibility</p> <p>Highly probable: Most likely to happen</p> <p>Definite: Impact will occur regardless of any prevention measures</p>
<p>Status of the Impact Describe whether the Impact is positive, negative (or neutral).</p>	<p>Positive: The activity will have a social/economic/ environmental benefit</p> <p>Neutral: The activity will have no effect</p> <p>Negative: The activity will be socially/ economically/ environmentally harmful</p>
<p>Degree of Confidence in predictions State the degree of confidence in predictions based on the availability of information and specialist knowledge</p>	<p>Unsure/Low: Little confidence regarding information available (<40%)</p> <p>Probable/Med: Moderate confidence regarding information available (40-80%)</p> <p>Definite/High: Great confidence regarding information available (>80%)</p>
<p>Significance (The impact on each component is determined by a combination of the above criteria and defined as follows)</p> <p>The significance of impacts shall be assessed <u>with and without mitigations</u>. The significance of identified impacts on components of the affected biophysical or socio-economic environment (and, where</p>	<p>No change: A potential concern that was found to have no impact when evaluated</p> <p>Very low: Impacts will be site-specific and temporary with no mitigation necessary.</p> <p>Low: The impacts will have a minor influence on the proposed development and/or environment. These impacts require some thought to adjust of the project design were achievable or alternative mitigation measures</p> <p>Moderate: Impacts will be experienced in the local and surrounding areas for the life span of the development and may result in long term changes.</p>

<p>relevant, concerning potential legal requirement(s) shall be described as follows:</p>	<p>The impact can be lessened or improved by an amendment in the project design or implementation of effective mitigation measures.</p> <p>High: Impacts have a high magnitude and will be experienced regionally for at least the life span of the development, or will be irreversible. The impacts could have the no-go proposition on portions of the development despite any mitigation measures that could be implemented.</p>
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In addition to determining the individual impacts against the various criteria, the element of mitigation, where relevant, will also be brought into the assessment. In such instances, the impact will be assessed with a statement on the mitigation measure that could/should be applied. An indication of the certainty of a mitigation measure considered, achieving the result to the extent indicated, is given on a scale of 1-5 (1 being uncertain and 5 being certain), taking into consideration uncertainties, assumptions and gaps in knowledge.

Table 5: The stated assessment and information will be determined for each issue or related groups of issues and presented in the descriptive format in the following table example or a close replica thereof.

Impact Statement:		
Mitigation:		
Ratings	Duration	
	Extent	
	Intensity	
	Probability of impact	
	Status of Impact (Positive/negative)	
	Degree of confidence	
Significances	Significance without Mitigation	
	Significance <i>WITH</i> Mitigation	
Indication of the certainty of a mitigation measure considered, achieving the result to the extent indicated, is given on a scale of 1-5 (1 being uncertain and 5 being certain), taking into consideration uncertainties, assumptions and gaps in knowledge		
Legal Requirements (Identify and list the specific legislation and permit requirements that are relevant to this development):		

10. CONCLUSION AND RECOMMENDATIONS

A scoping exercise is being undertaken to present the proposed activities to the I&APs and to identify environmental issues discussed in this report and potential concerns raised as a result of the proposed development alternatives to date. The issues and concerns raised by I&APs, authorities, the project team as well as specialist input, will be incorporated in the Final Scoping Report and addressed in the Draft Environmental Impact Report (EIR).

This Draft Scoping Report, being undertaken in terms of NEMA, summarises the process undertaken, the alternatives presented, and the issues and concerns raised.

As a result of the above, the need for the following specialist studies, have been identified:

- Biodiversity Assessment
- Freshwater Assessment
- Heritage Impact Assessment
- Agricultural potential (i.e. soil quality)

Any further issues raised as a result of the Public Participation Process will be dealt with during the EIA phase.

The significance of the impacts, associated with the proposed development, will be assessed in the specialist studies forming part of the EIA. Once the specialist studies have been completed, findings and proposed recommendations (mitigation measures) will be summarised in the Environmental Impact Report (EIR). The Draft EIR will be made available to the registered I&APs for a legislated 30-day comment period.

Based on the significance of the issues raised during the ongoing Public Participation Process and Scoping Phase, it is evident that an Environmental Impact Assessment (EIA) is required. ***It is therefore recommended that authorisation for the commencement of an EIA for the proposed development is granted.*** Should the EIA process be authorised, the significant issues raised in the process to date will be addressed and the specialist studies noted in this report will be undertaken.

11. DETAILS AND EXPERTISE OF THE EAP

This Draft Scoping Report was prepared by Ansone' Esterhuizen:

Qualifications: BA Environmental Management, BSc Hons Environmental Management (Currently completing) at the University of South Africa, South Africa.

Experience

Ansone' has about three years of experience within the environmental consulting field and has worked on private and government projects throughout the country, including Western Cape, Mpumalanga, Limpopo, KwaZulu-Natal, and Gauteng. Ansone' has facilitated Environmental (EA) and Water Use (WUA), as well as Air Emission licencing applications whereas other duties included auditing of various types of construction layouts to ensure environmental compliance with the EA. The variety of projects Ansone' has worked on include, but are not limited to;

- Housing and Township developments.
- Mining application and facilitating
- Agricultural Projects such as feedlots, poultry farms, etc.
- Civil engineering infrastructure projects such as water supply schemes, roads, culverts, bridges, warehouses, and a substation; and
- Auditing of water supply schemes, housing developments, warehouses, roads, bridges, and reservoirs

Ansone' Esterhuizen joined EnviroAfrica CC in September 2021 and is employed as an Environmental Assessment Practitioner (EAP), working on various private and government projects throughout the Western Cape, Northern Cape, Kwa-Zulu Natal, and the Eastern Cape.

The entire process and report were supervised by Bernard De Witt who has more than 30 years' experience in environmental management and environmental impact assessments.

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