PRE-APPLICATION SCOPING REPORT

FOR THE PROPOSED DEVELOPMENT OF THE HARMONY INSTREAM DAM AND ASSOCIATED AGRICULTURAL AREA ON THE REMAINDER OF FARMS HOUDENBEK NO. 415 AND WINKELHAAK NO. 224 NEAR DIE DORP OP DIE BERG, WITZENBERG LOCAL MUNICIPALITY, WESTERN CAPE

APPLICATION FOR:

Environmental Authorisation

PREPARED FOR:

Harmony Trust

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EnviroAfrica
Environmental Management and Impact Assessment
Omgewingsbestuur en Impakbeoordeling

FOR THE PROPOSED DEVELOPMENT OF THE HARMONY INSTREAM DAM AND ASSOCIATED AGRICULTURAL AREA ON THE REMAINDER OF FARMS HOUDENBEK NO. 415 AND WINKELHAAK NO. 224 NEAR DIE DORP OP DIE BERG, WITZENBERG LOCAL MUNICIPALITY, WESTERN CAPE

PRE-APPLICATION SCOPING REPORT AND PLAN OF STUDY

DEA&DP: 16/3/3/6/7/2/B5/2/1476/23

May 2025

HARMONY TRUST

INDEPENDENCE & CONDITIONS

EnviroAfrica is an independent consulting firm that has no interest in the proposed activity other than fair remuneration for services rendered. Remuneration for services is not linked to approval by decision making authorities and EnviroAfrica has no interest in secondary or downstream development as a result of this project. There are no circumstances that compromise the objectivity of this Scoping Report. The findings, results, observations and recommendations given here are based on the author's best scientific and professional knowledge and available information. EnviroAfrica reserves the right to modify aspects of this report, including the recommendations, if new information becomes available which may have a significant impact on the findings of this report.

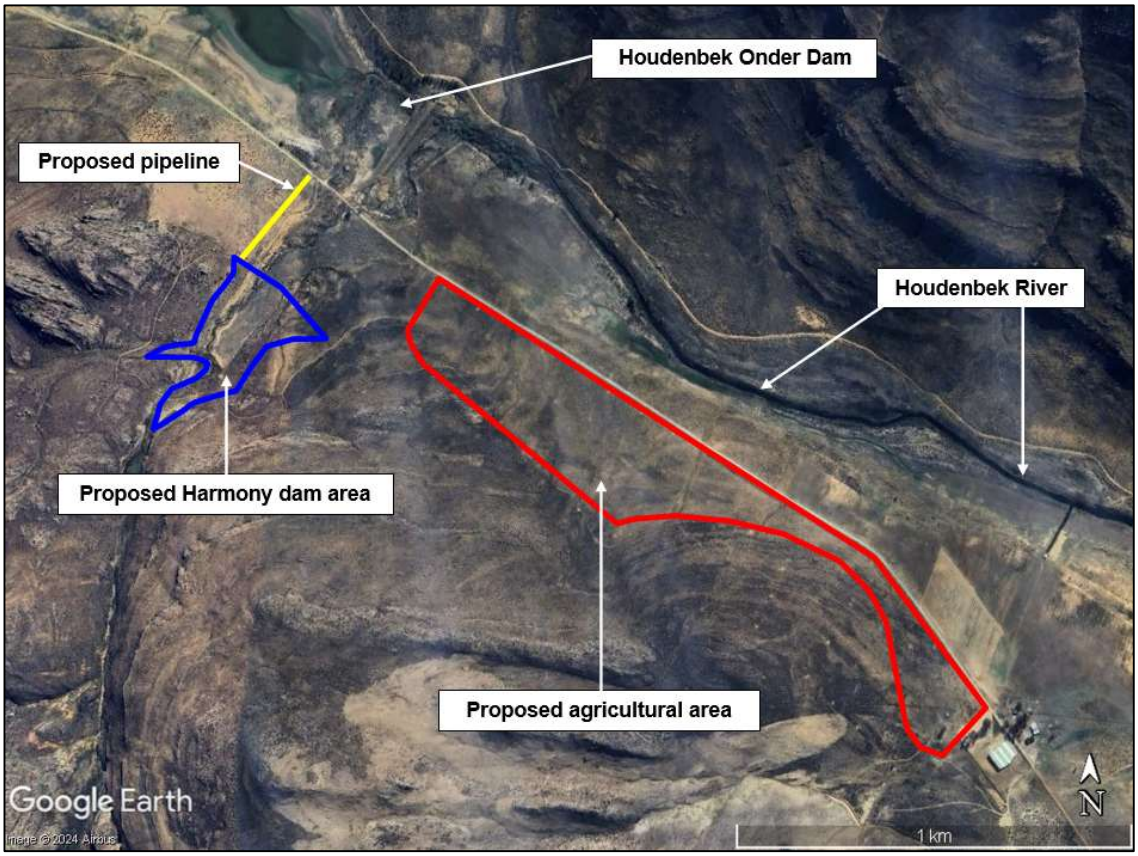
EXECUTIVE SUMMARY

Harmony Trust is proposing the development of an instream dam and an associated agricultural area on the Remaining Extent of Farm Houdenbek 415, near Op-Die-Berg in the Witzenberg Local Municipality, Western Cape.

The proposed development involves the construction of an instream dam (hereafter referred to as the Harmony Instream Dam), which will have a storage capacity of approximately 250,000 m³, a dam wall height of around 13m, and a dam wall length of about 280m. The dam's primary function will be to store and supply water for irrigation purposes, supporting a proposed associated agricultural area of approximately 30–35 hectares (ha).

The estimated inundation area or full supply level of the dam will cover approximately 5.4 ha on the lower slopes of the Houdenbeks Mountains. The dam will be supplied with runoff from the surrounding catchment area and, during dry years, supplemented with pumped water from the proposed Toeka Dam on Farm No. 414, via a pipeline approximately 1200 m in length. The primary water source will be winter surplus water.

Site coordinates (approximate central point): S32°59'47.00''; E19°27'50.00''.



The applicant – Harmony Trust, who will undertake the proposed development, and associated activities should it be approved, appointed EnviroAfrica cc as the independent Environmental Assessment Practitioner (EAP) to undertake the relevant EIA and the Public Participation Process required in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA).

A Scoping exercise is being conducted to present the proposed development and associated activities to the Competent and Commenting Authorities, as well as Interested and Affected Parties (I&APs). This

Pre-application Scoping Report identifies environmental issues and concerns related to the proposed development, raised by I&APs, authorities, the project team, and specialists based on baseline studies.

The following specialist studies have been identified:

- Biodiversity Assessment
- Freshwater Assessment
- Heritage Assessment
- Agricultural Assessment

Specialist studies are at various stages of completion—some are ongoing, others have been conducted, and some have been concluded. Findings from certain studies have already been included in this report. However, all studies will be finalised and their findings incorporated during the Environmental Impact Assessment (EIA) phase, should the Competent Authority (i.e., the Western Cape Department of Environmental Affairs and Development Planning) grant authorisation for the EIA process to proceed.

Should authorisation for the commencement of an EIA process be granted, any further issues raised during subsequent Public Participation Processes will be addressed during the EIA phase. The significance of the impacts associated with the proposed development will be assessed through specialist studies conducted as part of the EIA. Once all these studies have been completed, their findings will be summarized in an Environmental Impact Report (EIR), which integrates the results of the EIA's assessment phase.

An initial 30-day public commenting period was conducted in August and September 2024. During this period, the Competent and Commenting Authorities and I&APs were notified and invited to provide feedback as part of the Public Participation Process.

Based on the significance of the issues raised during the Public Participation Process and Scoping exercise conducted thus far, it is evident that an EIA is required. ***It is therefore recommended that authorisation be granted for the commencement of the EIA process for the proposed development.*** If authorised, the issues raised to date will be addressed, and the specialist studies outlined in this report will be concluded.

DOCUMENT CONTROL

Version	Name	Role / Responsibility	Date
AA			
BB			
CC			
DD			
EE			
Final			

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FIGURES

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APPENDICES

ACRONYMS

BGIS	Biodiversity Geographic Information System
CBA	Critical Biodiversity Area
DFFE	Department of Forestry, Fisheries and the Environment
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
ESA	Ecological Support Area
EWR	Environmental Water Requirements
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
VIA	Visual Impact Assessment
WULA	Water Use Licence Application

1 INTRODUCTION

1.1 BACKGROUND

Agriculture forms the backbone of the Cape Winelands District's economy, contributing approximately 24% of formal employment opportunities, making it essential to the livelihoods of local residents.

In 2006, the farm Winkelhaak RE224 in the Koue Bokkeveld, also known as *Harmony*, was acquired and established as a B-BBEE farming initiative, operating independently but in close partnership with its founder and mentor, Morester Landgoed (MHB Boerdery Pty Ltd).

The applicant and owner of Winkelhaak RE224, Harmony Trust, is a 100% black-owned B-BBEE agricultural entity. Harmony Trust has been active and trading successfully in the agricultural sector for several years alongside its neighbouring partner and mentor, Morester Landgoed.

Together, Harmony Trust and Morester Landgoed are planning to expand the existing B-BBEE agricultural initiative by cultivating and irrigating additional areas of fruit orchards. This includes the design and construction of two proposed instream dams, namely the Harmony Dam (subject of this application) and the Toeka Dam (to be submitted under a separate application). It was determined that the two dams would be pursued as separate applications in order to ensure that any objections raised against one dam do not adversely affect the other application.

One of the key considerations for this large-scale expansion was identifying viable dam sites. The B-BBEE-designated property, Winkelhaak RE224, has relatively flat topography and lacks a naturally suitable basin for a dam of the required scale. However, the neighbouring property, Houdenbek RE415, owned by Morester Landgoed, offers two highly suitable dam sites, with the added benefit of gravity-fed irrigation for the proposed orchard expansion areas.

Since the suitable land for both the dam sites and the proposed orchards lies on Houdenbek RE415, the current plan is for Harmony Trust to lease the land from Morester Landgoed, with a long-term vision of subdivision and eventual ownership. This arrangement would further empower Harmony Trust and solidify the sustainability of the B-BBEE initiative.

1.2 DESCRIPTION OF THE PROPOSED ACTIVITY

For the Harmony Instream Dam & Associated Agricultural Area Application with WCDEA&DP Reference Number: 16/3/3/6/7/2/B5/2/1476/23

The proposed development involves the construction of the Harmony instream dam, which will have a storage capacity of approximately 250,000 m³, a dam wall height of about 13m, and a dam wall length of around 280m. The estimated inundation area or full supply level of the dam will cover approximately 5.4 hectares, located on the lower slopes of the Houdenbeks Mountains.

The dam will be primarily supplied with water from runoff within the surrounding catchment area, as well as from an unnamed tributary of the Houdenbek River, upstream of its confluence with the larger Riet River. During dry years, it is proposed that water will be pumped from the (proposed) Toeka Dam on Farm No. 414 to supplement the supply to the Harmony Instream Dam. The primary water source will be surplus winter runoff.

The dam's primary function is to store and supply irrigation water for the associated agricultural expansion, approximately 30 hectares of land located alongside a gravel road on the farm. Water will be conveyed from the new dam to an existing pipeline, with irrigation pipelines routed through ploughed

land and road reserves. The installation of the new pipeline is not expected to trigger Listed Activities under NEMA, as it will occur within already disturbed areas.

The proposed development will result in a slight alteration to the character of the site, but it will complement the existing agricultural land use, which includes fruit and vegetable farming as well as grazing.

Approximate central site coordinates: S32°59′47.00″; E19°27′50.00"

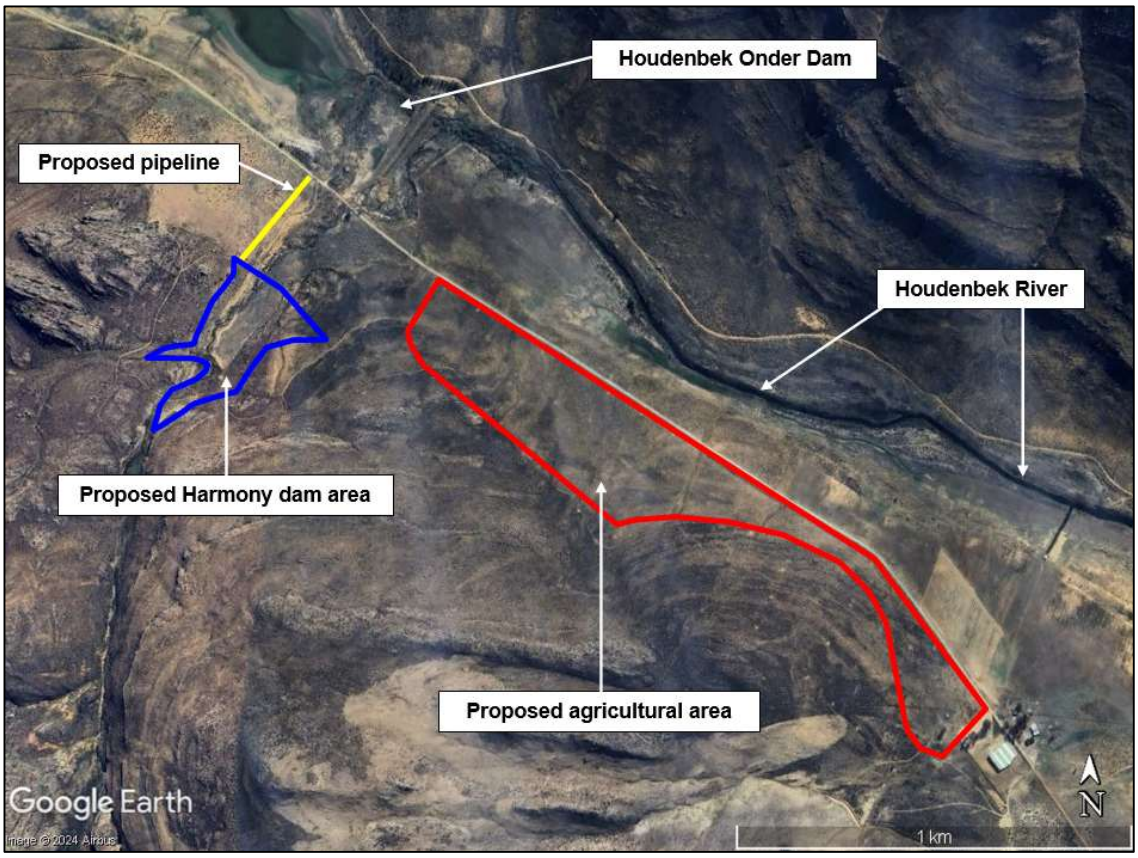


Figure 1: Google Earth image of the proposed property and the development footprint (red polygon)

1.3 WATER USE LICENCE

On January 27, 2023, the Harmony Trust was granted a water use licence (No. 01/E21D/AB/9699) by the Department of Water and Sanitation (DWS) for water use activities in the Olifants-Doorn Water Management Area, Western Cape.

The license authorises Harmony Trust to construct:

1. A dam with a storage capacity of 2 000 000 cubic meters (referred to as the Toeka dam) and;
2. A dam with a storage capacity of 250,000 cubic meters (referred to as the Harmony dam)

The construction of both dams is proposed on the Remainder of Houdenbek 415, Ceres Road.

The license further permits the Harmony Trust to take 715,000 cubic meters of water annually from the Houdenbek River and 250,000 cubic meters from an unnamed tributary of the river, for storage in the two dams. The water will be used for irrigation to support a BEE farming project associated with the Harmony Trust.

The following water uses have been authorised under the licence for Harmony Trust:

1. **Section 21(a) of the Act:** Taking water from a water resource
2. **Section 21(b) of the Act**: Storing water
3. **Section 21(c) of the Act:** Impeding or diverting the flow of water in a watercourse
4. **Section 21(i) of the Act:** Altering the bed, banks, course, or characteristics of a watercourse

2 NEED AND DESIRABILITY

The applicant, Harmony Trust, is planning to further develop an existing 100% black-owned BBEEE farming entity. Harmony Trust has been in the agricultural sector and trading successfully for many years with their neighbouring partner and mentor, Morester Landgoed.

The plan is to grow and irrigate an additional area of fruit orchards and therefore, the development of a dam for irrigation purposes is required to ensure the long-term economic viability and sustainability of this project. The success of this project is expected to create a number of permanent jobs within the agricultural industry.

The proposed Harmony Instream Dam addresses a critical need for increased water security in the agriculturally intensive Koue Bokkeveld region near Ceres. Seasonal water shortages and the unpredictable availability of irrigation water have made it increasingly difficult for local farmers to sustain crop production and maintain agricultural productivity. The dam is intended to store water for use during the dry season, ensuring a reliable and regulated supply that supports the long-term sustainability of farming operations. This water resource infrastructure is therefore essential to maintaining the economic viability of the area's farming activities, which play a significant role in local employment and rural development.

The desirability of the proposed development stems from its potential to support sustainable agricultural growth while avoiding significant long-term environmental or heritage degradation. The environmental and botanical assessments indicate that, although the proposed dam will impact a tributary of the Breë River and areas containing sensitive vegetation types, these impacts are considered manageable through footprint minimisation, sensitive layout planning, and appropriate rehabilitation measures. The heritage impact assessment identifies cultural features in proximity to the site; however, none are located within the direct development footprint. Mitigation measures such as buffer zones, avoidance, and heritage permitting processes are proposed to safeguard these resources. The project is consistent with regional planning objectives, including rural development and climate-resilient water resource management, which supports its overall desirability.

The proposed Harmony Instream Dam represents both a necessary and beneficial intervention to improve water security for agricultural production in the region. While certain environmental and heritage sensitivities have been identified, the project is considered feasible, provided that mitigation and management measures are effectively implemented. By supporting agricultural productivity and contributing to rural socio-economic resilience, the development reflects a balanced and sustainable approach that addresses human needs while upholding environmental and cultural stewardship responsibilities. While the project supports agricultural resilience and rural development, it will result in the loss of Critically Endangered vegetation. The need for biodiversity offsets has been acknowledged, and conservation trade-offs will be carefully evaluated during the EIA phase."

2.1.1 Location and Accessibility

The proposed location of the Harmony dam site is considered ideally suited for the construction of the dam.

From an engineering point of view, the location was chosen to ensure the project life cycle costs are minimised. The decisive factors are normally the basin characteristics with reference to available capacity versus demand, optimal costing of works, risk, etc. The location is preferred based on the available runoff, cost effectiveness and storage capacity. Access to the proposed dam site will be via existing farm roads.

2.1.2 Compatibility with the Surrounding Area

The site of the proposed Harmony Instream Dam is located within a landscape already characterised by extensive agricultural activity, including cultivated fields, orchards, and existing farm dams. The visual setting is distinctly rural and agrarian, with infrastructure associated with farming being a common and expected feature.

The construction of the proposed Harmony instream dam and associated irrigation development is therefore not anticipated to constitute a significant departure from the current visual character or land use of the area. Given the prevalence of similar water storage structures in the surrounding landscape, the introduction of an additional dam is considered visually consistent with the established land use pattern.

The dam is unlikely to become a dominant or visually intrusive feature, particularly as it will be experienced in the context of ongoing agricultural expansion and is only visible from limited vantage points. The natural topography and existing vegetation are expected to offer partial visual screening, further mitigating its visibility.

Overall, the proposed development is expected to have a negligible impact on the sense of place and visual character of the region. No sensitive visual receptors or designated scenic routes are directly affected, and the project is not anticipated to detract from the area's visual amenity or rural identity.

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, 1996 (Act 108 of 1996), under Section 24, preserves the right of every individual to “an environment that is not harmful to their health or well-being”, and further mandates to take reasonable legislative and other measures to prevent pollution and ecological degradation, promote conservation, and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

This constitutional provision forms the foundational legal basis for all environmental legislation and governance in South Africa, including the National Environmental Management Act (NEMA) and its associated regulations. It reflects the country’s commitment to integrated environmental management that balances ecological integrity with human development needs.

The proposed development aligns with the objectives of Section 24 of the Constitution, contributing to a cleaner, more equitable, and sustainable future for South Africa. It demonstrates how infrastructure development, when properly planned and responsibly implemented, can advance both environmental rights and economic inclusion, in line with the legal framework.

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 Forestry, Fisheries and the Environment (DFFE). These powers are delegated in the Western Cape to the Department of Environmental Affairs and Development Planning (DEA&DP).

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 (EIA).

According to the regulations of Section 24(5) of NEMA, authorisation is required for the following listed activities for the proposed development, i.e., Harmony Instream Dam and Associated Agricultural Area (Table 1):

Table 1: NEMA Listed Activities

No.	Listed Activities as per Listing Notice 1, 2 and 3 (GN R327, R324, R325)	Applicability to the development
Government Notice R327 (Listing Notice 1)		
12.	The development of; (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres. (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 if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse	The proposed Harmony Instream Dam will have a total footprint of approximately 5.4 hectares and is proposed to be located within a defined watercourse, specifically an unnamed tributary of the Houdenbek River, upstream of its confluence with the Riet River. As an instream dam, the structure will be constructed within the natural flow path of the watercourse, thereby intercepting and storing seasonal surface runoff and floodwater from the tributary's catchment area.
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 in accordance with 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 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	The proposed Harmony Instream Dam will have a total footprint of approximately 5.4 hectares, situated within a watercourse, specifically an unnamed tributary of the Houdenbek River. The construction of the dam will require the infilling, excavation, and alteration of the bed and banks of the watercourse to allow for the formation of the embankment, spillway, and storage basin.

No.	Listed Activities as per Listing Notice 1, 2 and 3 (GN R327, R324, R325)	Applicability to the development
27.	The clearance of an area of 1 ha or more, but less than 20 ha of indigenous vegetation	The proposed Harmony Instream Dam will occupy a total footprint of approximately 5.4 hectares, situated within a defined watercourse on the lower slopes of the Houdenbeks Mountains. Together, the instream dam and agricultural development represent a total project footprint of approximately 35.4 hectares, embedded within a broader agricultural landscape where similar land uses and water infrastructure are already well established. The proposed instream dam is situated within a watercourse in the Koue Bokkeveld, within a designated Mountain Catchment Area.
Government Notice R325 (Listing Notice 2)		
16.	Development of a dam, where the highest part of the dam wall, measured from the outside toe of the wall to the highest part of the wall, is 5m or higher or where the highwater mark of the dam covers an area of 10ha or more	The proposed dam wall will have a height of approximately 12.8 metres from its foundation to the crest. This height is necessary to achieve the desired storage capacity of 250,000 cubic metres for the Harmony Instream Dam.
Government Notice R324 (Listing Notice 3)		
12.	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.	More than 300 m2 of indigenous vegetation will be cleared, and the proposed development site may be within 100m of the watercourses identified on site; and the proposed development site falls outside an urban area.

No.	Listed Activities as per Listing Notice 1, 2 and 3 (GN R327, R324, R325)	Applicability to the development
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 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.	The proposed Harmony Instream Dam will have a total footprint of approximately 5.4 hectares and is proposed to be located within a defined watercourse, specifically an unnamed tributary of the Houdenbek River, upstream of its confluence with the Riet River. As an instream dam, the structure will be constructed within the natural flow path of the watercourse, thereby intercepting and storing seasonal surface runoff and floodwater from the tributary's catchment area. The proposed instream dam is situated within a watercourse in the Koue Bokkeveld, within a designated Mountain Catchment Area.

An application form will be submitted to the Western Cape Department of Environmental Affairs and Development Planning (WCDEADP). On acknowledgment from WCDEADP, the Scoping phase process will be initiated and undertaken to further identify potential issues.

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).

Section 38(8) of the National Heritage Resources Act (No. 25 of 1999) makes provision for the assessment of heritage impacts as part of an Environmental Impact Assessment (EIA) process. It further states that if such an assessment is deemed adequate by the relevant heritage authority, a separate Heritage Impact Assessment (HIA) is not required.

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 responsible resources authority. 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 responsible resources authority.

Section 38(1) of the NHRA of 1999 requires the responsible heritage resources authority to notify the person who intends to undertake a development that fulfils the following criteria to submit an impact assessment report if there is reason to believe that heritage resources will be affected by such event:

- the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- the construction of a bridge or similar structure exceeding 50m in length;
- any development or other activity that will change the character of a site
  - exceeding 5000m² in extent; or
  - involving three or more existing erven or subdivisions thereof; or
  - involving three or more erven or divisions thereof which have been consolidated within the past five years; or
  - the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resource authority;
- the rezoning of a site exceeding 10 000m² in extent; or
- any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority.

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 will also require authorisations under the National Water Act (Act No. 36 of 1998) (NWA). The Department of Water and Sanitation (DWS), who administer that Act, will be a leading role-player in the EIA.

On January 27, 2023, the Harmony Trust was granted a water use licence (No. 01/E21D/AB/9699) by the Department of Water and Sanitation (DWS) for water use activities in the Olifants-Doorn Water Management Area, Western Cape.

The license authorises Harmony Trust to construct:

1. A dam with a storage capacity of 2 000 000 cubic meters (referred to as the Toeka dam) and;
2. A dam with a storage capacity of 250,000 cubic meters (referred to as the Harmony dam)

The construction of both dams is proposed on the Remainder of Houdenbek 415, Ceres Road.
The license further permits the Harmony Trust to take 715,000 cubic meters of water annually from the Houdenbek River and 250,000 cubic meters from an unnamed tributary of the river, for storage in the two dams. The water will be used for irrigation to support a BEE farming project associated with the Harmony Trust.

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 MOUNTAIN CATCHMENT AREAS ACT NO. 63 OF 1970

The Mountain Catchment Areas Act (Act No. 63 of 1970) is South African legislation aimed at the protection and sustainable management of mountain catchments, which play a critical role in ensuring water supply, soil conservation, and biodiversity. The Act provides for the declaration of Mountain Catchment Areas (MCAs) to safeguard these sensitive environments, regulate land use, and manage activities that may negatively impact water resources and ecological systems.

The Act places restrictions on certain types of development within designated MCAs, particularly where such developments may affect hydrological integrity or ecological functionality.

The proposed development of an instream dam on the lower slopes of the Houdenbek Mountains falls within the Koue Bokkeveld Mountain Catchment Area, making the project subject to the provisions of this Act. As such, considerations relating to environmental protection and water resource regulation are particularly relevant, and the proposed activity must be carefully assessed to ensure compliance with the Act's objectives and the sustainable use of natural resources within this protected area.

4 ALTERNATIVES

Alternatives to the proposed development are limited and have been considered below:

4.1 LOCATION / SITE ALTERNATIVES

The main constraint with identifying suitable sites for a dam and associated agricultural (albeit not so determinantal as the dam area) is that Winkelhaak RE224, owned by Harmony Trust, lacks viable dam site options due to its flat topography and absence of a natural basin. Consequently, the only available land for the dam site and the associated agricultural area is on the neighbouring RE Houdenbek Farm 415, owned by Morester Landgoed. Initially, Harmony Trust would rent this land from Morester Landgoed (MHB Boerdery Pty Ltd), with a long-term plan of subdividing the land to provide Harmony Trust the opportunity to purchase it.

In accordance with the findings of the botanical specialist study and the residual impacts identified, particularly the loss of Winterhoek Sandstone Fynbos within the inundation footprint, a biodiversity offset has been recommended. While no offset site has been confirmed at this stage, alternative sites will be identified and evaluated during the EIA phase in consultation with the relevant conservation authorities. These sites will be assessed for their ecological equivalence, long-term viability, and contribution to regional conservation targets. The final offset strategy will be guided by national offset policy principles and will be developed as part of the Environmental Management Programme (EMPr), ensuring that residual impacts are appropriately balanced through conservation gains elsewhere in the landscape.

4.2 ACTIVITY ALTERNATIVES

The purpose of the proposed dam and associated agricultural area is to ensure a sufficient water supply for the irrigation needs of the Harmony Trust's proposed associated agricultural development.

No alternative activities were evaluated for this project. This decision arises from the primary objective of facilitating intensive agricultural production through a reliable water supply, which cannot be effectively achieved through other means within the context of the site. Alternative water augmentation methods, such as groundwater extraction or water transfer from remote catchments, present challenges that render them technically unfeasible, environmentally unsustainable, or economically impractical given the scale of the proposed agricultural operations. Additionally, the chosen site for the dam has been determined to be the most appropriate location based on considerations of topography, proximity to agricultural fields, and the need to minimise environmental and heritage impacts.

As such, the development of a dam was determined to be the only practical activity to meet the water supply needs for the proposed agricultural expansion, and no alternative forms of development were pursued during the planning phase.

4.3 LAYOUT ALTERNATIVES

Through multiple design iterations, both heritage and engineering considerations were carefully evaluated, resulting in the selection of the preferred dam layout, as detailed in the Development Plan (Appendix 2 – Site Development Plans). To protect the heritage resources identified on site (HMY1, HMY2, and HMY3), a 40–50 metre no-go buffer zone has been incorporated into the final design to ensure their preservation.

The proposed Harmony Dam will have a maximum wall height of approximately 12.8 metres, a crest length of approximately 280 metres, and a net storage capacity of approximately 250,000 cubic metres. The total inundation area (flooded footprint) is estimated to cover approximately 5.4 hectares.

The Botanical Assessment was prepared in March 2019 and amended in April and May 2025 for the proposed Harmony Dam. Four dam wall alignments were considered as layout alternatives to identify a configuration that balances water storage needs with environmental and heritage sensitivities. Option 1 placed the dam wall higher in the catchment but would result in the flooding of pristine Winterhoek Sandstone Fynbos and heritage rock art, making it environmentally and culturally unsuitable. Option 2 proposed a smaller dam wall further north, reducing environmental impact but offering insufficient water storage capacity, and was therefore deemed unviable. Option 4 included an additional southern wall to protect heritage sites but would significantly increase the ecological footprint and project costs, rendering it financially unfeasible. Option 3, now the preferred layout, situates the dam wall lower in the catchment in an area that has been previously disturbed by agricultural activity.

This alignment avoids direct impacts on identified heritage features and reduces the loss of undisturbed natural vegetation, while still achieving the project's functional objectives. Accordingly, Option 3 is considered the most balanced and acceptable layout alternative from both ecological and heritage perspectives.

4.4 NO-GO ALTERNATIVES

The no-go alternative refers to the scenario in which the proposed Harmony Instream Dam is not constructed. While this option would mitigate potential negative environmental impacts associated with dam construction, such as loss of vegetation, alteration of natural watercourses, and disturbance of heritage resources, it would concurrently result in the loss of significant socio-economic benefits anticipated from the project.

As detailed in Section 2.1 of the project proposal, the principal objective of the dam is to provide a reliable and sustainable irrigation water supply, which is critical to the viability of the planned agricultural expansion on the farm. In the absence of the dam, the Harmony Trust's intended agricultural development would encounter substantial limitations due to the seasonal and unreliable nature of water availability in the Koue Bokkeveld region. This limitation would undermine the feasibility of the proposed business model, potentially rendering the agricultural investment economically unviable.

Moreover, the anticipated agricultural development is expected to contribute to local job creation, enhance food production, and stimulate rural economic growth, outcomes that are particularly significant in an area where employment opportunities are constrained. Opting for the no-go alternative would forfeit these direct and indirect benefits. It would also diminish the farm's capacity to adapt to climate variability and water scarcity, both of which are increasingly pressing concerns in the Western Cape.

Therefore, while the no-go alternative avoids specific environmental risks, it does so at the expense of substantial long-term socio-economic advantages and fails to address the urgent need for improved water security to support sustainable agriculture in the region.

4.5 CONCLUSION

During the preliminary planning phases of the project, a variety of dam layout alternatives were thoroughly examined to determine the most viable and sustainable option. These alternatives underwent evaluation based on several criteria, including engineering feasibility, potential environmental repercussions, and sensitivities related to heritage. A number of configurations were deemed unsuitable due to difficult topographical conditions, excessive requirements for earthworks, or unacceptably high impacts on sensitive ecological and cultural heritage features identified in initial assessments.

Consequently, the current dam layout, as outlined in the Development Plan, has been selected as the preferred alternative. This configuration represents a balanced solution that minimises both

environmental and heritage impacts while remaining both technically and economically viable. The chosen layout strategically avoids the most ecologically sensitive habitats and culturally significant areas while addressing the irrigation demands of the proposed agricultural development.

Further refinements and comparative evaluations may be undertaken as part of the ongoing Environmental Impact Assessment (EIA) process, thereby ensuring that all reasonable and practical alternatives are continually assessed in accordance with the principles of sustainable development and responsible environmental management.

5 SITE DESCRIPTION

5.1 LOCATION

The proposed Harmony Dam will be located on the remainder of Farm Houdenbek 415, with the associated agricultural area situated on the remainder of Farm Winkelhaak 224, near Die Dorp Op-die-Berg, within the Witzenberg Local Municipality, Western Cape Province.

Access to the site is via the R303, from which existing farm roads on the property provide direct access to the proposed development areas. The approximate central coordinates of the site are: S32°59′47.00″; E19°27′50.00″.

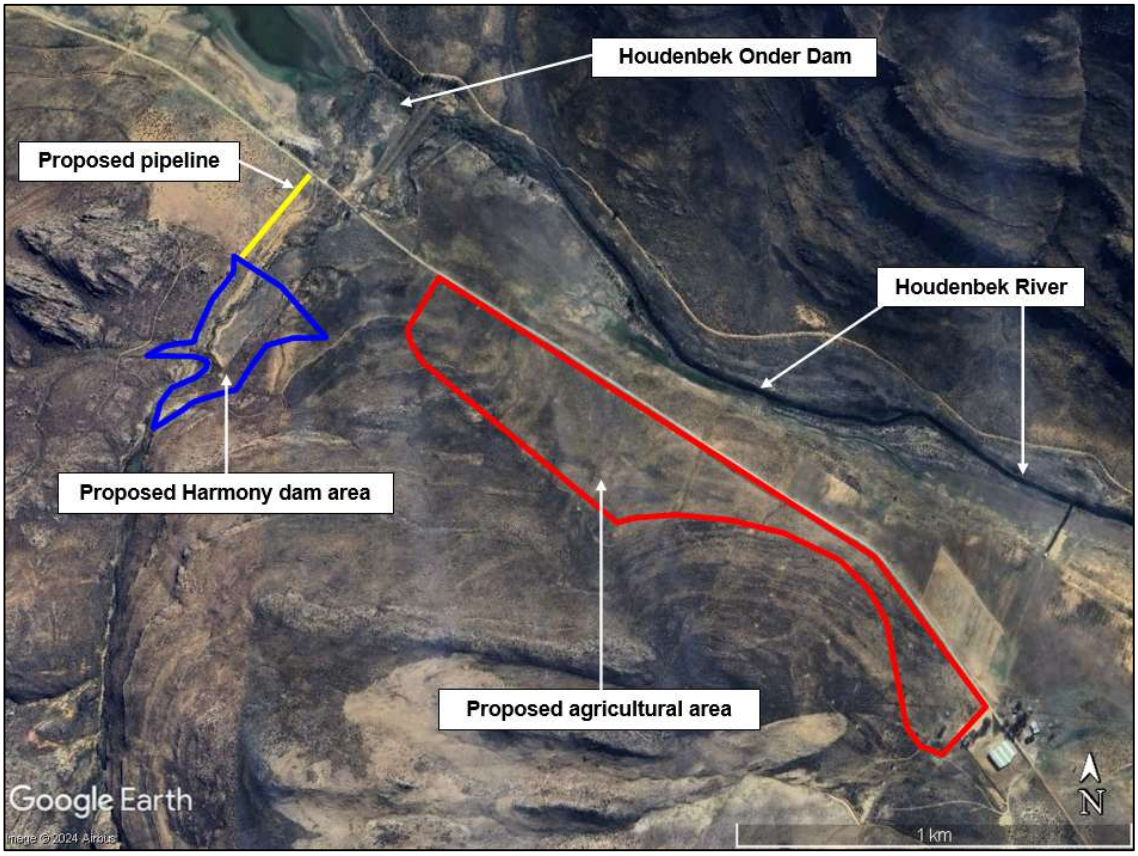


Figure 2: Proposed development site – Development footprint

5.2 CLIMATE

Op-die-Berg experiences a warm and temperate climate. The winter months are significantly wetter than the summer months. The average annual temperature in Op-die-Berg is 13.5°C, and the region receives about 432 mm of rainfall annually. January is the driest month, with only 6 mm of precipitation, while May is the wettest month, receiving an average of 79 mm of rain. January, with an average temperature of 19.8°C, is the warmest month, while July is the coldest, with temperatures averaging 7.6°C. The difference in precipitation between the driest and wettest months is 73 mm, and temperatures fluctuate by 12.2°C throughout the year.

Simulated historical climate & weather data was obtained from meteoblue.com for the town closest to the proposed site – i.e. Op-die-Berg area. The Meteoblue climate diagrams indicated below are based on 30 years of hourly weather model simulations. They give good indications of typical climate patterns and expected conditions (temperature, precipitation, sunshine and wind). The simulated weather data have a spatial resolution of approximately 30 km and may not reproduce all local weather effects, such as thunderstorms, local winds etc, and local differences as they occur in urban, mountainous, or coastal areas.

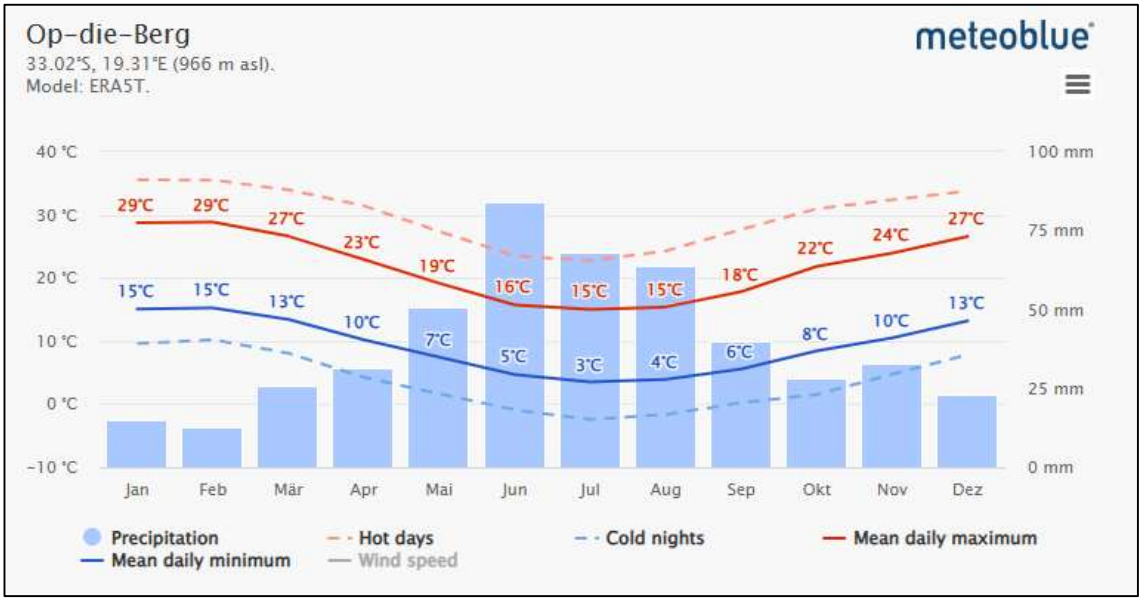


Figure 3: Meteoblue[1] - Simulated historical climate & weather data for the Op-die-Berg area

[1] https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/frere_south-africa_1003654

5.3 BIODIVERSITY

A Terrestrial Biodiversity Assessment is being undertaken and it will be finalised and the findings included in the Environmental Impact Assessment Report during the EIA phase. A Terrestrial Biodiversity Assessment aims to understand the terrestrial ecology and evaluate the potential impacts of the proposed development on the site. It identifies and assesses biodiversity aspects (fauna and flora and terrestrial ecosystems) associated with the proposed development area and the environmental interactions it imposes.

5.3.1 Vegetation

According to the CapeFarmMapper vegetation layer, the vegetation expected at the proposed Harmony Dam site consists primarily of Winterhoek Sandstone Fynbos, with a smaller portion of Kouebokkeveld Alluvium Fynbos. In terms of the National Environmental Management: Biodiversity Act (Act No. 10 of 2004) and the National List of Ecosystems that are Threatened and in Need of Protection (Government Gazette No. 47526 of 2022), Kouebokkeveld Alluvium Fynbos is classified as Critically Endangered in the Western Cape. This classification indicates that the ecosystem is at high risk of collapse and is in urgent need of conservation. In contrast, Winterhoek Sandstone Fynbos is not currently listed as a threatened ecosystem and is therefore not formally protected under the 2022 Threatened Ecosystems list, although it remains regionally important for biodiversity conservation due to its relatively undisturbed condition and location within a protected mountain catchment.

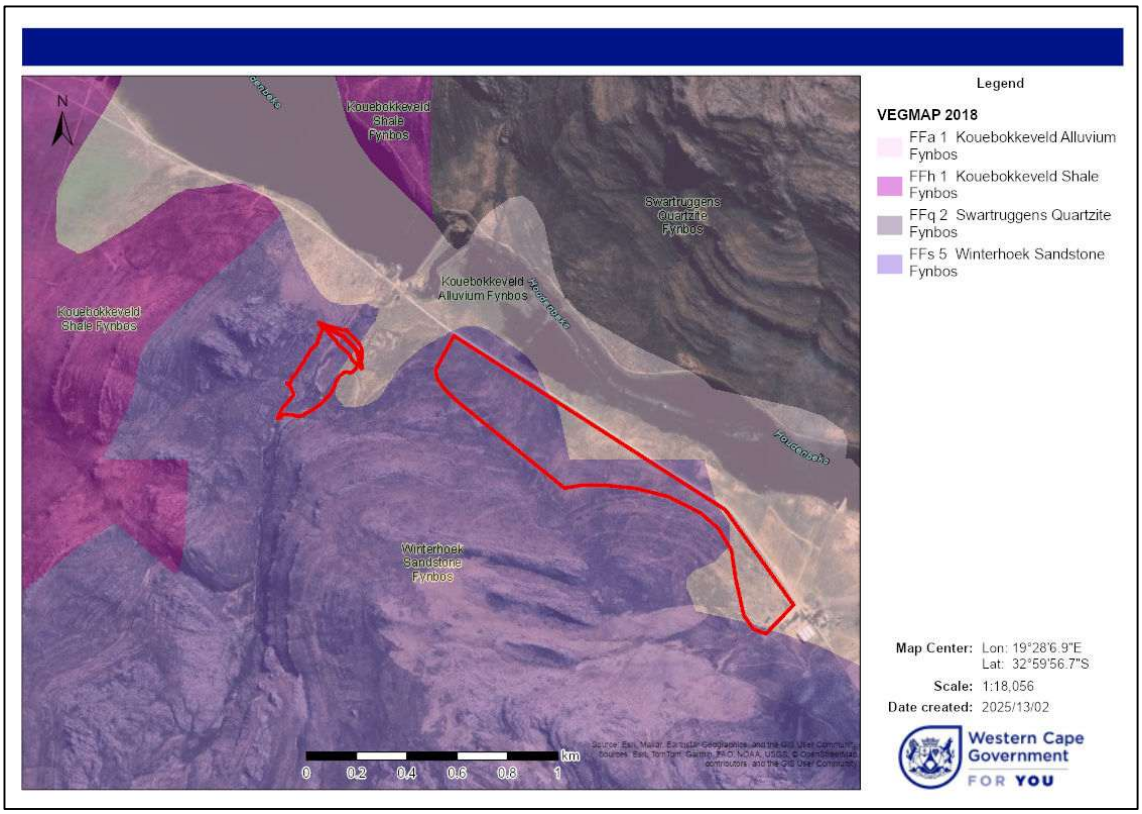


Figure 4: Vegetation Map, Cape Farm Mapper

5.3.2 Critical Biodiversity Areas and Ecological Support Areas

According to the biodiversity overlay map from CapeFarmMapper, the proposed Harmony Instream Dam is located within a Critical Biodiversity Area (CBA) and also intersects an Ecological Support Area (ESA) Category 1: Aquatic, as defined by the Western Cape Biodiversity Spatial Plan (WCBSP).

Ecological Support Areas (ESAs) are not considered essential for achieving biodiversity targets directly, but they are critical for supporting the ecological functioning of adjacent CBAs, maintaining landscape connectivity, and enabling the delivery of ecosystem services, such as water regulation and sediment control. The management objective for ESA 1 areas is to maintain their ecological functionality in a near-natural state. Limited habitat transformation may be permissible, provided that biodiversity objectives and ecosystem functioning are not compromised.

In addition, the Harmony Dam footprint falls within the proclaimed Kouebokkeveld Mountain Catchment Area, which is recognised as a Protected Area under the National Environmental Management: Protected Areas Act (Act No. 57 of 2003). As such, any development within this area must be carefully assessed to ensure alignment with conservation objectives and legal protection status.

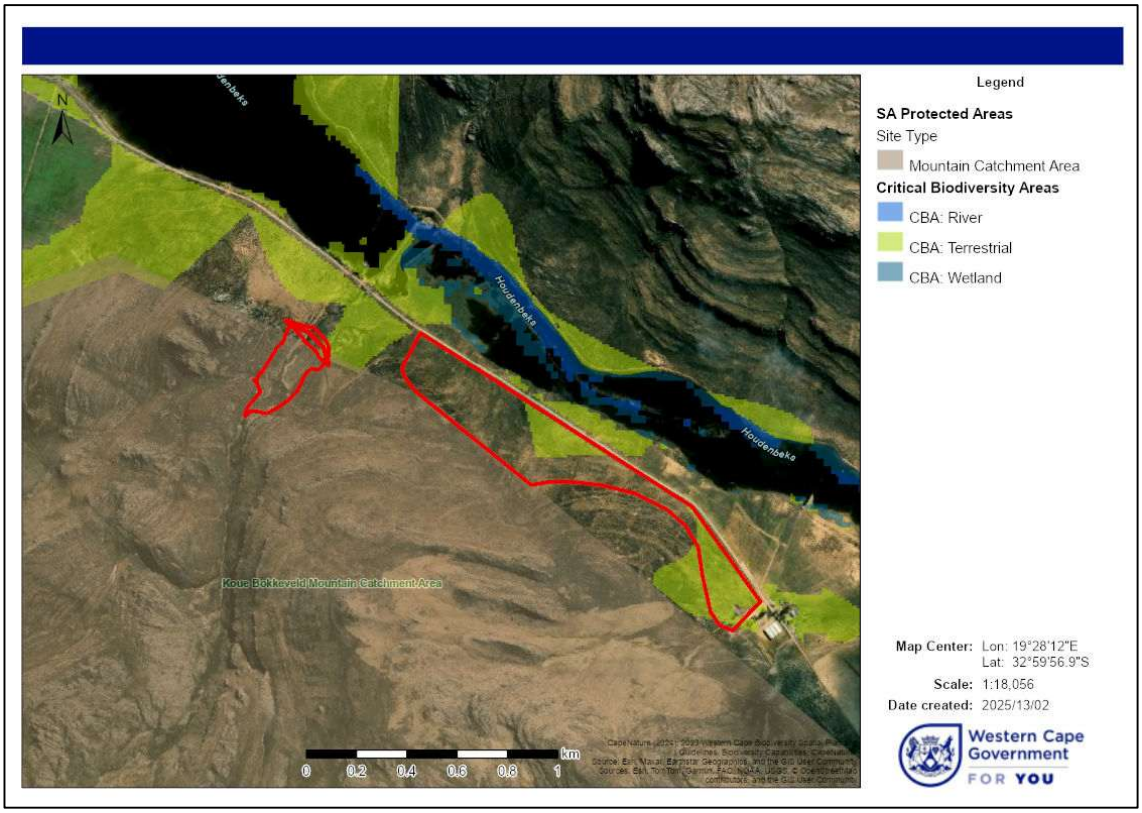


Figure 5: Biodiversity Overlay Map, Cape Farm Mapper

5.4 FRESHWATER

A Freshwater Impact Assessment has been undertaken, it will be finalised and the findings included in the Environmental Impact Assessment Report during the EIA phase.

A Freshwater report serves to evaluate the potential impacts of proposed development on freshwater resources such as watercourses and wetlands. It assesses factors such as water quality, quantity, and ecosystem health to inform decision-making and mitigate adverse effects on these ecosystems.

The project site is located within the E21C quaternary catchment, which forms part of the Koue Bokkeveld Mountain Catchment Area, a recognised Strategic Water Source Area. The region follows a Mediterranean climate, with a winter rainfall regime and long, dry summers, making water storage infrastructure essential to sustain agricultural activities.

The nearby Houdenbek River is a seasonal watercourse that functions as a flooded wetland during the winter months, while experiencing substantial flow reduction or drying during summer. Several ephemeral drainage lines traverse the proposed agricultural area and serve as natural surface runoff pathways during high-rainfall events.

Over time, the Houdenbek River has been significantly modified by upstream and adjacent agricultural activities, including surface water abstraction, channel erosion, and return flows containing sediment and agrochemical residues. Despite these impacts, the river retains ecological significance, as it has the potential to support endemic and threatened aquatic species, such as the Clanwilliam yellowfish (*Labeobarbus seeberi*) and Cape galaxias (*Galaxias zebratus*). The river is currently classified as Present Ecological State (PES) Category D, indicating a largely modified system with moderate ecological sensitivity.

Within the site, three primary ephemeral drainage lines function as stormwater channels. These are not classified as wetlands, and their aquatic ecological value is considered low. Existing berm and trench infrastructure adjacent to farm roads has already altered the natural flow regime. The proposed development includes the replacement of these features with engineered irrigation return-flow swales, which must be carefully designed to prevent erosion and minimise hydrological impact on the Houdenbek River system.

According to the Preliminary Engineering Design Report, the Harmony Instream Dam will be constructed on a small tributary within the Houdenbek catchment, upstream of its confluence with the Winkelhaak River, which flows into the Riet River, a tributary of the Doring River, ultimately contributing to the Olifants River system. The dam will rely exclusively on the regulated abstraction of surplus winter runoff, with licence conditions in place to protect downstream ecological flow requirements and water user rights. A Water Use Licence (WUL) has been granted for the construction and operation of the Harmony Dam in accordance with Sections 21(a), (b), (c), and (i) of the National Water Act (Act 36 of 1998).

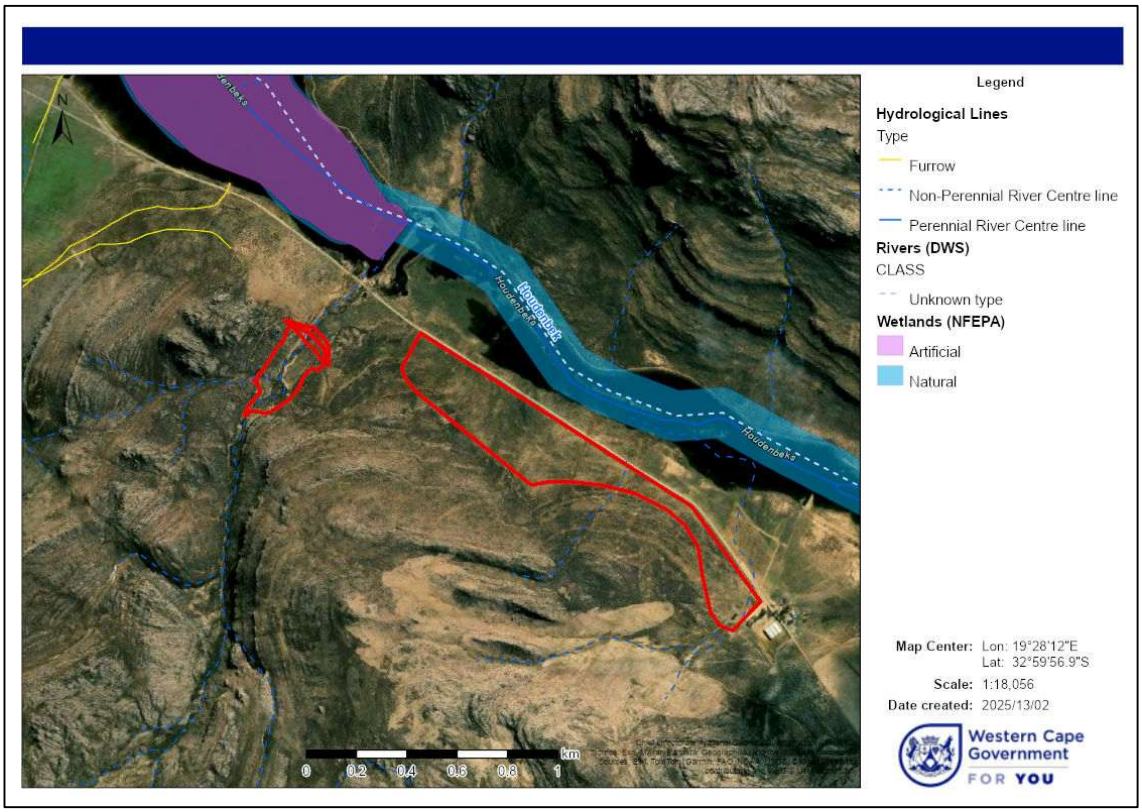


Figure 6: Freshwater Resources Map, Cape Farm Mapper

5.5 HERITAGE / ARCHAEOLOGICAL & PALAEONTOLOGICAL

An initial Heritage / Archaeological Impact Assessment has been undertaken, with the preliminary findings included in the pre-application Scoping Report; however, it will be finalised during the EIA phase.

A Heritage Assessment, like the Heritage Survey conducted for the proposed development, aims to identify and assess the heritage / archaeological and palaeontological themes associated with the proposed development area and the environmental interactions and impacts it imposes.

5.5.1 Heritage & Archaeological findings

A rock art site (HMY 1 & HMY 2) was identified by ACRM (Kaplan 2018) during the Archaeological Impact Assessment (AIA) conducted for the proposed Harmony Dam (HWC Case No. 1809305AS0904E). The site consists of a 120-metre-long sandstone shelter containing a substantial assemblage of Later Stone Age (LSA) artefacts, including flake tools, bladelet and cylindrical cores, adzes, scrapers, pottery fragments, and ostrich eggshell beads. The rock art features well-preserved paintings of human figures, antelope, symbolic motifs such as rain animals, formlings, entoptic designs, and geometric patterns.

The site was graded as having High (Grade IIIA) local archaeological significance, warranting protection. In 2019, the Eastern Cederberg Rock Art Group (eCRAG) undertook a detailed recording of the site, which is now archived on the South African Heritage Resources Information System (SAHRIS).

To mitigate potential impacts from inundation due to the dam, CTS Heritage (Lavin 2018) recommended the establishment of a 40–50 metre no-go buffer around sites HMY 1 and HMY 2.

In August 2024, a follow-up archaeological survey was conducted for the revised dam footprint and the proposed 30 ha agricultural expansion area. An Early Stone Age (ESA) flake was identified on an eroded riverbank of a small tributary of the Houdenbek River near the proposed dam wall, in an area recently affected by runoff following heavy winter rainfall. In addition, isolated LSA quartz flakes were observed on sandy soils adjacent to the dam wall.

At a previously recorded site (HMY 3, Kaplan 2018), approximately 40 metres from the proposed dam wall, a light scatter of LSA artefacts (in silcrete, indurated shale, and quartz) and a single Middle Stone Age (MSA) silcrete flake were documented. No rock art was recorded at HMY 3, and the site was graded as having Low (Grade IIIC) archaeological significance. As HMY 3 lies outside the construction footprint, it will not be directly impacted by the proposed development.

No archaeological resources were identified within the proposed new agricultural area.

A Notice of Intent to Develop (NID) has been submitted to the Heritage Western Cape (HWC) in accordance with the requirements of the National Heritage Resources Act (Act 25 of 1999).

5.5.2 Palaeontological findings

According to Bamford (2024), the proposed Harmony Instream Dam and associated agricultural development area are located on moderately sensitive Quaternary sands, as well as the potentially very highly sensitive Ceres Subgroup of the Bokkeveld Group (Cape Supergroup). Although no fossils have been recorded from this specific area, Bamford notes that:

"There is a very small chance that fossils may occur below the ground surface in the unweathered sandstones and quartzites of the Devonian-aged Ceres Subgroup (Bokkeveld Group, Cape Supergroup)."

According to the SAHRIS palaeosensitivity map (Figure 7), the site includes areas of very high palaeontological sensitivity, particularly where the Swartruggens Formation is present (indicated in red), and moderate sensitivity in zones underlain by Quaternary sands (green). However, the development footprint has been subject to previous agricultural disturbance and is currently covered by soil and vegetation.

Bamford concludes that due to surface weathering and land modification, it is unlikely that delicate fossil material (e.g., shells or trace fossils) would survive at the surface. Fossils may still be present below the soil horizon in unweathered bedrock, particularly in deeper foundation or excavation zones.

Figure 7 shows the SAHRIS palaeosensitivity overlay, with the proposed Harmony Dam footprint indicated in blue and the proposed agricultural area in yellow, located on Farm Houdenbek 415.

Table 2: Palaeontological sensitivity rating

Colour	Sensitivity	Required action
Red	Very high	Field assessment and protocol for finds is required.
Orange / Yellow	High	Desktop study is required and based on the outcome of the desktop study; a field assessment is likely.
Green	Moderate	Desktop study is required.
Blue	Low	No palaeontological studies are required however a protocol for finds is required.
Grey	Insignificant / Zero	No palaeontological studies are required.

White / Clear	Uknown	These areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

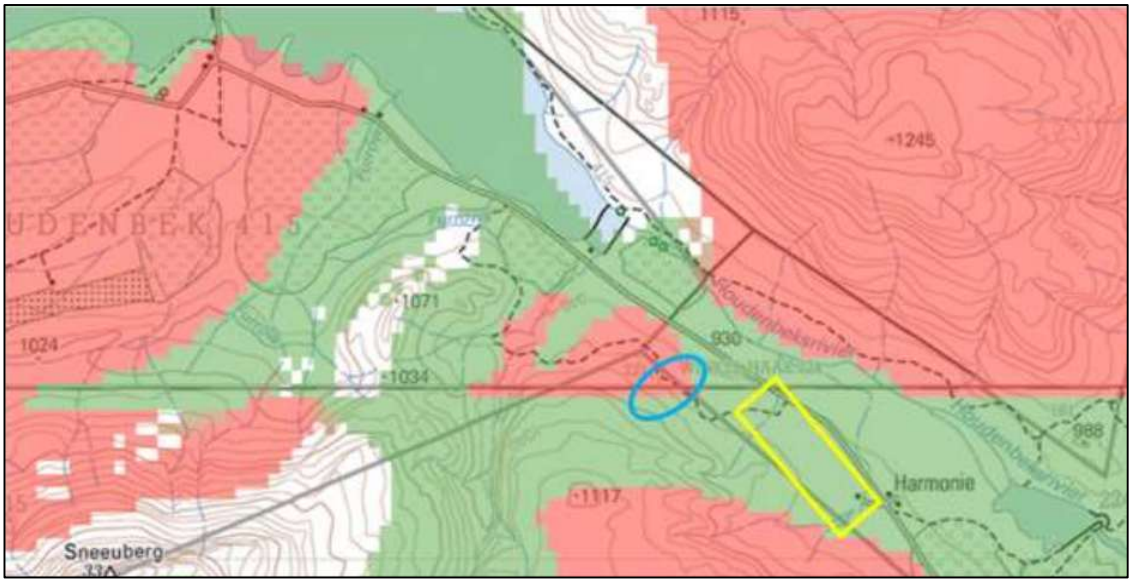


Figure 7: Palaeontological sensitivity map

5.6 SOCIO-ECONOMIC CONTEXT

5.6.1 Cape Winelands District Municipality

The Cape Winelands District Municipality, located in the Western Cape, is widely recognised for its robust agricultural economy and its strategic focus on sustainable development. As outlined in its Integrated Development Plan (IDP) and other regional policy frameworks, the municipality prioritises initiatives that strengthen the agricultural sector, improve infrastructure, and promote inclusive socio-economic growth. These goals are particularly focused on enhancing the quality of life in rural communities and creating meaningful opportunities for historically disadvantaged individuals through land reform, employment, and enterprise development.

The proposed development of the Harmony Instream Dam and associated agricultural expansion by Harmony Trust aligns closely with these regional objectives. By enabling improved water storage and irrigation capacity, the project directly supports increased agricultural productivity and resilience, key drivers of economic growth in the Cape Winelands region. Additionally, the development is expected to generate employment opportunities, both during the construction and operational phases, contributing to poverty alleviation and improved livelihoods in the surrounding communities.

Through its focus on infrastructure investment and service delivery, the municipality creates an enabling environment for sustainable agricultural enterprises such as this one. The proposed project not only complements existing land use patterns and economic priorities but also reinforces the district's long-term vision of integrated rural development and equitable access to resources. As such, the Harmony Trust development is well-aligned with the Cape Winelands District Municipality's broader planning and policy objectives for inclusive and sustainable regional progress.

Figure 8: Cape Winelands District Municipality[2]

5.6.2 Witzenberg Local Municipality

The Witzenberg Local Municipality (WLM) is situated in the Western Cape and is known for its strong agricultural-based economy. The municipality is home to key towns such as Tulbagh, Wolseley, and Ceres, with Prince Alfred's Hamlet and Op-die-Berg to the north. Agriculture, particularly fruit and wine production, is the driving force of the local economy. The region also supports agri-processing industries focused on niche products like olives, grains, beef, and pork. The area's agricultural sector provides substantial employment.

In addition to its agricultural roots, Witzenberg has made significant strides in developing its economic strategy. The municipality has engaged the private sector, other levels of government, and development agencies to create a collaborative framework for economic growth. The local economic vision focuses on partnership-driven commercial projects that prioritize job creation, broad-based black economic empowerment, and the overall expansion of the municipal economy. Efforts to improve infrastructure,

[2] https://municipalities.co.za/

particularly bulk and network services, remain central to supporting investment and enhancing job opportunities.

Recent updates to the municipality's Integrated Development Plan (IDP) emphasise a continued focus on infrastructure development, sustainable economic growth, and attracting investment. These initiatives are aligned with a broader vision to foster long-term economic sustainability, particularly in agri-processing and related industries. The municipality's emphasis on a balanced approach to development ensures that future growth is supported by adequate services, creating a conducive environment for economic prosperity.

Overall, the socio-economic fabric of Witzenberg is centered around agriculture but also incorporates modern strategies to diversify its economy. The municipality continues to focus on sustainable development, job creation, and broad-based empowerment as critical components of its economic future.

Harmony Trust’s proposed expansion into fruit orchards is strategically aligned with the broader socio-economic objectives of the Witzenberg Local Municipality. As highlighted in the municipality's development plan, agriculture plays a crucial role in driving the local economy, particularly through fruit and wine production. Harmony Trust’s growth, which includes the cultivation of an additional approximately 30 hectares of fruit orchards, directly supports the municipality’s focus on agricultural development and job creation, particularly for previously disadvantaged groups.

Moreover, the expansion aligns with Witzenberg’s strategy to foster economic sustainability through collaborative commercial projects. By expanding its operations, Harmony Trust will contribute to the region’s goal of broad-based black economic empowerment, enhancing local employment opportunities and supporting the municipality's infrastructure development initiatives. This development not only strengthens the agricultural sector but also positions Harmony Trust as a key player in the municipality’s long-term economic growth, ensuring that the region remains competitive and resilient.

6 ENVIRONMENTAL ISSUES AND POTENTIAL IMPACTS

Environmental issues were raised through desktop analysis, site visits, informal discussions with the project team, specialists and authorities, and by Interested and Affected Parties through the initial public participation period. 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:

6.1 BIODIVERSITY IMPACT

The construction and operation of the proposed Harmony Instream Dam and its associated agricultural area will result in biodiversity impacts, primarily due to the loss of Winterhoek Sandstone Fynbos and associated natural habitat within the dam footprint. The inundation of land will lead to the permanent transformation of native vegetation and disruption of ecological processes, including species interactions, habitat structure, and potential seed banks. According to the preliminary botanical assessment, the loss of intact, undisturbed fynbos vegetation within the inundation zone is considered unavoidable.

In addition, a formal biodiversity offset will be required due to the irreversible Very High Negative impact on Kouebokkeveld Alluvium Fynbos, which is a Critically Endangered vegetation type occurring entirely within the proposed agricultural area.

The proposed dam is located within the Kouebokkeveld Mountain Catchment Area, a proclaimed Protected Area under the Mountain Catchment Areas Act (Act No. 63 of 1970). This legal designation further elevates the ecological sensitivity and conservation significance of the site.

While some localised mitigation measures, such as the revegetation of disturbed zones around the dam wall and construction corridors may be feasible, the loss of vegetation within the inundation area is irreversible and cannot be offset onsite.

Cumulative impacts on the broader ecosystem, particularly in the context of fynbos habitat fragmentation and incremental vegetation loss in the region, are acknowledged. Based on current assessments and assuming effective implementation of the proposed mitigation measures, the cumulative impact of the project is considered to range from low to moderate negative significance overall. However, the cumulative impact specifically on Kouebokkeveld Alluvium Fynbos is considered Very High, as this ecosystem has already been extensively transformed, with only limited intact remnants remaining. Any further loss will contribute significantly to regional ecological degradation.

The full findings of the botanical impact assessment, including detailed analysis of vegetation condition, species of conservation concern, and mitigation feasibility, will be presented in the Environmental Impact Assessment (EIA) phase of the project.

6.2 FRESHWATER IMPACT

The proposed Harmony Instream Dam and associated agricultural area will impact freshwater resources primarily through alterations to hydrology, aquatic habitat, and downstream water availability. The dam site is located within a natural and near-pristine drainage line, which includes a riparian zone containing wetland indicator species. Although no endangered fish species were recorded, the area still provides ecologically valuable habitat. Among the alternatives considered, the preferred dam location is expected to have a lower impact on aquatic systems, as it avoids the most sensitive upstream areas.

Key freshwater impacts include:

- Flow Reduction: Water storage and abstraction will reduce downstream flows, potentially shortening the hydroperiod and lowering water levels during dry periods.
- Aquatic Habitat Alteration: Inundation of the natural drainage line will result in the loss of riparian and instream habitat. The downstream alignment of the preferred alternative helps reduce the loss of high-value vegetation and habitat compared to upstream options.
- Cumulative Water Abstraction: The combined effect of the Harmony and Toeka Dams, along with additional abstraction from the Houdenbek River, may increase hydrological pressure in the catchment. However, restricting abstraction to peak winter flows could help mitigate these cumulative impacts.
- Groundwater Recharge: Some infiltration from the dam is expected to contribute to localised groundwater recharge, although this is likely to be minimal in extent and impact.
- Water Quality: Impacts on water quality are considered negligible, as runoff from the relatively undisturbed catchment is not expected to dilute agricultural pollutants to a significant degree.

The freshwater specialist emphasises that the primary ecological concern is the reduction in flow downstream, which may affect habitat connectivity and seasonal ecosystem functions. To mitigate this, it is recommended that ecological flow releases be incorporated to maintain minimum base and low flows in the Houdenbek River.

Detailed findings and recommended mitigation measures will be presented during the EIA phase of the environmental authorisation process.

6.3 HERITAGE / ARCHAEOLOGICAL IMPACT

The proposed Harmony Instream Dam site includes two recorded rock art sites, HMY 1 and HMY 2, identified during an Archaeological Impact Assessment (AIA) conducted by ACRM in 2018. These sites contain well-preserved Later Stone Age (LSA) cultural material, including bladelet and cylindrical cores, adzes, scrapers, pottery fragments, and ostrich eggshell beads. The associated rock art features paintings of human figures, antelope, and symbolic motifs, including rain animals, formlings, entoptics, and geometric designs.

Due to the integrity and cultural value of these features, both sites were graded as having high local archaeological significance (Grade IIIA). To protect the rock shelters and archaeological deposits from potential inundation or indirect impacts associated with dam construction, heritage specialists recommended the establishment of a 40–50 metre no-go buffer zone. This buffer will be formally implemented as part of the project's mitigation and management measures, ensuring the long-term conservation of the sites.

The surrounding area is largely transformed by agricultural activities and no additional archaeological resources or burial sites were identified within the proposed 30 ha agricultural expansion area. As such, no significant heritage impacts are anticipated from the expanded cultivation zone.

The area's wilderness character, shaped by its mountainous backdrop and proximity to the Houdenbek River, contributes to a strong Sense of Place, reinforcing the cultural landscape value of the rock art sites. The features at HMY 1 and HMY 2 have been comprehensively documented by the Eastern Cederberg Rock Art Group (eCRAG) as part of the broader heritage mitigation strategy.

6.4 PALAEONTOLOGICAL IMPACT

The potential palaeontological impact of the proposed Harmony Instream Dam and associated agricultural development is considered to be low to moderate. According to the SAHRIS

palaeosensitivity map, the project area is underlain by moderately sensitive Quaternary sands and the potentially highly sensitive Ceres Subgroup of the Bokkeveld Group.

While the Ceres Subgroup is known to preserve fossil material, particularly marine invertebrates and trace fossils, in other parts of the Cape Supergroup, no fossil occurrences have been recorded within the immediate project area. The palaeontological specialist has noted a very low likelihood of fossil material being present at the surface, although subsurface fossiliferous strata may occur in the unweathered sandstones and quartzites of the Devonian-aged bedrock.

Although parts of the site are flagged as very highly sensitive by the SAHRIS tool (especially areas underlain by the Swartruggens Formation), the majority of the project footprint has already been disturbed by historical and ongoing agricultural activities and is now covered by soils and vegetation. This reduces the probability of encountering intact, fossil-bearing geological layers at or near the surface.

Nevertheless, fossil material may still be encountered during excavation, particularly in areas of deeper ground disturbance (e.g., dam foundations or pipeline trenching). Should any potential fossils be exposed during construction, a palaeontological chance-find protocol must be implemented, and the relevant heritage authority, typically Heritage Western Cape (HWC), must be notified in accordance with the National Heritage Resources Act (Act 25 of 1999).

6.5 LANDSCAPE / VISUAL IMPACT

The potential impact of the proposed Harmony Instream Dam and associated agricultural development on the sense of place has been thoroughly considered. The surrounding landscape is predominantly rural and agricultural in nature, comprising cultivated lands, orchards, farm infrastructure, and several existing in-stream and off-stream farm dams. Over time, this landscape has been shaped by longstanding agricultural activity, with water storage infrastructure forming a familiar and integrated element of the region's visual and functional identity.

In this context, the proposed development is consistent with existing land use patterns and visual character. The dam will not introduce a novel or visually intrusive feature, nor is it expected to result in any perceptible change to the community's experience of place. Rather, it is anticipated to reinforce the prevailing agrarian sense of place by supporting the continuation and expansion of commercial farming in the area.

Given the strong alignment of the proposed development with the existing landscape character, land use, and visual setting, no significant change to the sense of place is anticipated. Furthermore, there are no identified sensitive receptors in the vicinity, such as cultural landmarks, scenic routes, or tourism-based visual resources, that would be adversely impacted. Based on this, no additional visual or landscape specialist studies are considered necessary at this stage.

6.6 AGRICULTURAL IMPACT

The proposed Harmony Instream Dam and associated agricultural development are expected to have both positive and negative implications for agricultural resources within the project area. On the positive side, the development will significantly improve irrigation reliability, enabling the expansion of high-value fruit orchards and supporting the long-term viability of agricultural operations in the region. This improved water security will enhance agricultural productivity and resilience, particularly in the face of climate variability.

However, the construction of the dam will result in the permanent loss of approximately 5.4 hectares of agricultural land within the inundation footprint. This impact is considered relatively minor, given the overall scale of agricultural activity on the property and the region and considering that the affected area has been classified as having medium agricultural sensitivity.

An agricultural assessment is currently underway to evaluate the agro-ecological suitability of the land, identify potential impacts on historically cultivated areas, and assess the implications of the proposed dam on agricultural production potential and soil resources. While the dam will alter a portion of the local landscape, the footprint is spatially contained, and the surrounding agricultural areas are not expected to be significantly disrupted.

The findings of the agricultural assessment will inform appropriate mitigation measures to minimise negative impacts and will guide the sustainable integration of the dam and related irrigation infrastructure into the broader farming system. Overall, despite the limited land loss associated with the dam structure, the project is expected to result in a net positive outcome for agricultural productivity and contribute to the economic sustainability of the farming enterprise.

6.7 SOCIO-ECONOMIC IMPACT

The construction of the proposed Harmony Instream Dam and the development of the associated 30-hectare agricultural area are expected to generate temporary employment opportunities during the construction phase, including jobs in dam construction, land preparation, and infrastructure installation. In the operational phase, the project will contribute to sustained job creation, both directly and indirectly, through the establishment and maintenance of fruit orchards, as well as associated agricultural support services (e.g., irrigation management, harvesting, packaging, and transport).

The proposed dam plays a critical enabling role in this development, as it will ensure a secure and reliable water supply, which is a prerequisite for the successful cultivation of high-value, water-intensive crops such as apples and pears.

This application forms part of a broader strategic initiative to support the ongoing growth of Harmony Trust, a 100% black-owned B-BBEE farming enterprise. Harmony Trust has operated successfully in the agricultural sector for several years, in close collaboration with its neighbouring mentor and founding partner, Morester Landgoed (MHB Boerdery Pty Ltd).

The proposed expansion is expected to yield long-term socioeconomic benefits, particularly for previously disadvantaged communities in the region. By facilitating the growth of a B-BBEE enterprise, the project contributes to transformation in the agricultural sector, local economic development, and the creation of sustainable, permanent employment opportunities in the Koue Bokkeveld region—an area where rural job creation remains a development priority.

7 DETAILS OF THE PUBLIC PARTICIPATION PROCESS

Interested and Affected Parties (I&APs) are identified throughout the on-going Public Participations process. Landowners adjacent to the proposed site, relevant organs of state, organisations, 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 4.

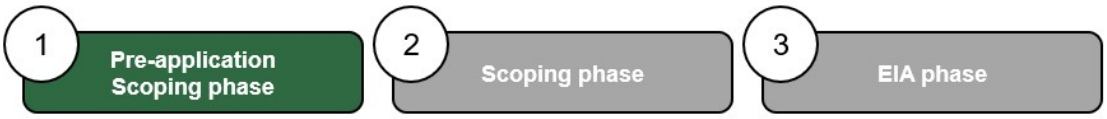
A Public Participation Process (PPP) will be conducted for the proposed development in accordance with the requirements outlined in Regulation 41 of the NEMA EIA Regulations 2014. The issues and concerns raised during the Scoping phase will be dealt with in the EIA phase of this application.

As such, each subsection of Regulation 41 contained in Chapter 6 of the NEMA EIA Regulations 2014 will be addressed separately to demonstrate that all potential Interested and Affected Parties (I&APs) were notified of the proposed development.

The I&APs will have a chance to view and comment on all the reports that are submitted. The figures also indicated what timeframes are applicable 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 WCDEADP for consideration and decision-making.

Correspondence with I&APs will be via post, fax, telephone, email and/or newspaper advertisements. Should it be required, this process may be adapted depending on input received during the on-going process and as a result of public input. The WCDEADP will be informed of any changes in the process.



This ***Pre-application Scoping Report*** falls within the Pre-application Scoping phase as depicted above, which will be submitted to the Department of Environmental Affairs and Development Planning (WCDEADP) (Western Cape) for consideration, and forms part of the Scoping & EIA process. The purpose of this pre-application 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.

Table 3: Public participation process Regulations as per NEMA EIA Regulations, 2014 (as amended 2021)

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended in 2021)	Applicability to the development
Regulation 39 - Activity on land owned by a person other than the proponent		
1.	If the proponent is not the owner or person in control of the land on which the activity is to be undertaken, the proponent must, before applying for an environmental authorisation in respect of such activity, obtain the written consent of the landowner or person in control of the land to undertake such activity on that land.	Written consent of the landowner or person in control of the land to undertake the proposed activities on the land has been obtained through an established agreement.
2.	Subregulation (1) does not apply in respect of— a) linear activities; and	Noted. Not applicable to this proposed development.
	b) strategic integrated projects as contemplated in the Infrastructure Development Act, 2014.	Noted. Not applicable to this proposed development.
Regulation 40 - Purpose of public participation		
1.	The public participation process to which the— a) basic assessment report and EMPr, and the closure plan in the case of a closure activity, submitted in terms of regulation 19; and	As part of the pre-application Scoping phase, a 30-day commenting period occurred between 08 August 2024 to 13 September 2024. All potential or registered Interested and Affected Parties, including the Competent Authority and Commenting Authorities, were invited and allowed to submit comments regarding the proposed development.
	b) scoping report submitted in terms of regulation 21, the environmental impact assessment report, EMPr, and the closure plan in the case of a closure activity, submitted in terms of regulation 23; was subjected to must give all potential or registered interested and affected parties, including the competent authority, a period of at least 30 days to submit comments on each of the basic assessment report, EMPr, scoping report and environmental impact assessment report, and the closure plan in the case of a closure activity, as well as the report contemplated in regulation 32, if such reports or plans are submitted at different times.	
2.	The public participation process contemplated in this regulation must provide access to all information that reasonably has or may have the potential to influence any decision with regard to an application unless access to that information is protected by law and must include consultation with — a) the competent authority;	As part of the pre-application Scoping phase, an initial notification letter was sent to — a) The Western Cape Department of Environmental Affairs and Development Planning (WCDEADP) is identified as the Competent Authority.
	b) every State department that administers a law relating to a matter affecting the environment relevant to an application for an environmental authorisation;	

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended in 2021)	Applicability to the development
	c) all organs of state which have jurisdiction in respect of the activity to which the application relates; and	b & c) The following state departments that administer a law relating to a matter affecting the environment relevant to an application and organs of state that have jurisdiction in respect of the activity to which the application relates: − Department of Agriculture − Department of Water and Sanitation − Department of Water and Sanitation: Water Resource Management – Berg/Olifants − Western Cape Department of Environmental Affairs and Development Planning (WCDEADP) − Department of Rural Development and Land Reform Spatial Planning − Department of Transport and Public Works − Heritage Western Cape (HWC) − Cape Nature: Land Use & Conservation Planning − Local Municipality − District Municipality d) All potential, or, where relevant, registered interested and affected parties. These initial notification letters were sent to inform the parties described above about the proposed activity/development and to invite their input.
	d) all potential, or, where relevant, registered interested and affected parties.	

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended in 2021)	Applicability to the development
3.	Potential or registered interested and affected parties, including the competent authority, may be provided with an opportunity to comment on reports and plans contemplated in subregulation (1) prior to submission of an application but must be provided with an opportunity to comment on such reports once an application has been submitted to the competent authority.	During the pre-application Scoping phase, potential and/or registered Interested and Affected Parties, including the Competent Authority and Commenting Authorities, were notified and given the opportunity to comment on the proposed development. However, no reports or plans, as outlined in subregulation (1), were available at that time Nevertheless, an opportunity for potential registered Interested and Affected Parties, including the Competent Authority and Commenting Authorities, to comment on such reports and plans will be given once an application has been submitted to the Competent Authority.
Regulation 41 – Public participation process		
1.	This regulation only applies in instances where adherence to the provisions of this regulation is specifically required.	Noted.
2.	The person conducting a public participation process must take into account any relevant guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of an application or proposed application which is subjected to public participation by— a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of — i. the site where the activity to which the application or proposed application relates is or is to be undertaken; and	During the pre-application Scoping phase, an English A2-sized notice board was fixed on the boundary / fence of the site where the activity to which the proposed application relates is to be undertaken. Additionally, multiple English A3 sized notice boards were placed at various locations around the site.
	ii. any alternative site	There is no alternative site.
	b) giving written notice, in any of the manners provided for in section 47D of the Act, to— i. the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken	As part of the pre-application Scoping phase, initial notification letters were sent to occupiers and persons in control of the site via email and/or mail drops conducted during the site visit.

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended in 2021)	Applicability to the development
	ii. owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken	As part of the pre-application Scoping phase, initial notification letters were sent to identified occupiers of land adjacent to the site via email and/or mail drops conducted during the site visit.
	iii. the municipal councillor of the ward in which the site and alternative site is situated and any organisation of ratepayers that represent the community in the area	As part of the pre-application Scoping phase, an initial notification letter was sent to the relevant municipal ward councillor at the Witzenberg Local Municipality. No ratepayer organisation was identified for the community in the area.
	iv. the municipality which has jurisdiction in the area	As part of the pre-application Scoping phase, an initial notification letter was sent to a representative of the Witzenberg Local Municipality and the Cape Winelands District Municipality.
	v. any organ of state having jurisdiction in respect of any aspect of the activity; and	As part of the pre-application Scoping phase, initial notification letters were sent to the following organs of state having jurisdiction in respect of any aspect of the activity: - Department of Agriculture - Department of Water and Sanitation - Department of Water and Sanitation: Water Resource Management – Berg/Olifants - Western Cape Department of Environmental Affairs and Development Planning (WCDEADP) - Department of Rural Development and Land Reform Spatial Planning - Department of Transport and Public Works - Heritage Western Cape - Cape Nature: Land Use & Conservation Planning - Local Municipality - District Municipality

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended in 2021)	Applicability to the development
	vi. any other party as required by the competent authority	Noted. Should the competent authority require any other party to receive written notice, then this will be duly carried out.
	c) placing an advertisement in— i. one local newspaper; or	An English advertisement was placed in the *Witzenberg Herald*, a local newspaper, on 09 August 2024.
	ii. any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;	Noted. Not applicable to this proposed development.
	d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official Gazette referred to in paragraph (c) (ii); and	Noted. Not applicable to this proposed development.
	e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to — i. illiteracy;	Noted. In instances where a person desires to participate in the process but is unable to do so due to illiteracy, disability, or any other disadvantage, and makes such a desire known to the EAP, then reasonable alternative methods will be used, as agreed upon by the competent authority.
	ii. disability; or	
	iii. any other disadvantage	
3.	A notice, notice board or advertisement referred to in subregulation (2) must— a) give details of the application or proposed application which is subjected to public participation; and	The written notices — specifically, notification letters, notice boards, and advertisements — that form part of the pre-application Scoping phase's 30-day commenting period, contain details of the proposed application, which is subject to public participation. Please refer to Appendix 4 for proof of the written notices.
	b) state — i. whether basic assessment or S&EIR procedures are being applied to the application;	
	ii. the nature and location of the activity to which the application relates;	
	iii. where further information on the application or proposed application can be obtained; and	

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended in 2021)	Applicability to the development
	iv. the manner in which and the person to whom representations in respect of the application or proposed application may be made.	
4.	A notice board referred to in subregulation (2) must— a) be of a size of at least 60cm by 42cm; and	The notice boards measured 60cm by 42cm in size and displayed the required information in a legible format. Please refer to Appendix 4 for proof of the notice boards.
	b) display the required information in lettering and in a format as may be determined by the competent authority.	
5.	Where public participation is conducted in terms of this regulation for an application or proposed application, subregulation (2) (a), (b), (c) and (d) need not be complied with again during the additional public participation process contemplated in regulations 19 (1) (b) or 23 (1) (b) or the public participation process contemplated in regulation 21 (2) (d), on condition that— a) such process has been preceded by a public participation process which included compliance with subregulation (2) (a), (b), (c) and (d); and	Noted.
	b) written notice is given to registered interested and affected parties regarding where the— i. revised documents as contemplated in regulation 19 (1) (b);	Noted.
	ii. revised documents as contemplated in regulation 23 (1) (b); or	Noted.
	iii. environmental impact assessment report and documents as contemplated in regulation 21 (2) (d); may be obtained, the manner in which and the person to whom representations on these reports or plans may be made and the date on which such representations are due.	Noted.
6.	When complying with this regulation, the person conducting the public participation process must ensure that— a) information containing all relevant facts in respect of the application or proposed application is made available to potential interested and affected parties; and	Noted.
	b) participation by potential or registered interested and affected parties is facilitated in such a manner that all potential or registered interested and affected parties are provided with a reasonable opportunity to comment on the application or proposed application.	Noted.

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended in 2021)	Applicability to the development
7.	Where an environmental authorisation is required in terms of these Regulations and an authorisation, permit or licence is required in terms of a specific environmental management Act, the public participation process contemplated in this Chapter may be combined with any public participation processes prescribed in terms of a specific environmental management Act, on condition that all relevant authorities agree to such combination of processes.	Noted.
Regulation 42 - Register of interested and affected parties		
1.	A proponent or applicant must ensure the opening and maintenance of a register of interested and affected parties and submit such a register to the competent authority, which register must contain the names, contact details and addresses of— a) all persons who, as a consequence of the public participation process conducted in respect of that application, have submitted written comments or attended meetings with the proponent, applicant or EAP;	A register of interested and affected parties was opened and is maintained.
	b) all persons who have requested the proponent or applicant, in writing, for their names to be placed on the register; and	
	c) all organs of state which have jurisdiction in respect of the activity to which the application relates.	
Regulation 43 - Registered interested and affected parties entitled to comment on reports and plans		
1.	A registered interested and affected party is entitled to comment, in writing, on all reports or plans submitted to such party during the public participation process contemplated in these Regulations and to bring to the attention of the proponent or applicant any issues which that party believes may be of significance to the consideration of the application, provided that the interested and affected party discloses any direct business, financial, personal or other interest which that party may have in the approval or refusal of the application.	This subregulation is communicated to registered interested and affected parties during the public participation process.
2.	In order to give effect to section 24O of the Act, any State department that administers a law relating to a matter affecting the environment must be requested, subject to regulation 7 (2), to comment within 30 days.	State departments that administer laws relating to environmental matters relevant to the application, as well as organs of state with jurisdiction over the activity, were notified of the proposed application and invited to comment within 30 days.

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended in 2021)	Applicability to the development
		However, should comments not be received within the prescribed timeframes, it would be assumed that no comments are forthcoming.
Regulation 44 - Comments of interested and affected parties to be recorded in reports and plans		
1.	The applicant must ensure that the comments of interested and affected parties are recorded in reports and plans and that such written comments, including responses to such comments and records of meetings are attached to the reports and plans that are submitted to the competent authority in terms of these Regulations.	Comments of interested and affected parties are recorded together with the responses in a Comment and Response report (CRR) and where applicable, incorporated into reports and plans.
2.	Where a person desires but is unable to access written comments as contemplated in subregulation due to— a) a lack of skills to read or write; b) disability; or c) any other disadvantage; reasonable alternative methods of recording comments must be provided for.	Noted. Where a person desires to but is unable to access written comments due to illiteracy, disability, or any other disadvantage, and makes such a desire known to the EAP, then reasonable alternative methods of recording comments will be provided for.

8 PLAN OF STUDY FOR THE EIA

8.1 TASKS TO BE UNDERTAKEN

Due to the nature of the proposed development, there are a number of activities that will still need to be undertaken during the next phase of the project. The proposed process is described as follows (this follows from a Scoping process to be accepted by the Western Cape Department of Environmental Affairs and Development Planning (WCDEADP):

The NEMA application form will be submitted to WCDEA&DP along with the Draft Scoping Report which will also be made available for viewing and comment for a 30-day comment period. Comments received during the Public Participation Process (PPP) will be incorporated into the Final Scoping Report, to be submitted to the WCDEADP 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 the WCDEA&DP.

Table 4: EIA process - Timeline

EIA Process	
Task	**Timeframes**
Notify members of the public through existing Interested and Affected Parties (I&AP) databases, site notices, and a newspaper advertisement about the intention to submit a National Environmental Management Act (NEMA) application for the proposed development as part of the initial Public Participation Process (PPP) phase.	September 2024
Distribute a Pre-application Scoping Report to registered Interested and Affected Parties and Commenting Authorities for their comments.	May 2025
Submit NEMA application and Draft Scoping Report (DSR) and Plan of Study for EIA to DEA&DP and distribute to registered I&APs and Commenting Authorities for comment.	June 2025
Submit the Final Scoping Report (FSR) and Plan of Study to DEA&DP for a decision.	July 2025
Receive approval for the FSR and the Plan of Study for EIA.	August 2025
Undertake/further specialist studies (if required) and compile the Draft Environmental Impact Report (EIR) for public comment based on specialist information.	September 2025
Submit Draft EIR for public comment.	October 2025
Receive responses to the Draft EIR.	November 2025
Preparation of a FINAL EIR and submission to DEA&DP.	December 2025

**Timeframes provided are estimates and are subject to change. They serve as a tentative indication and may be adjusted as the process progresses.*

8.2 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:

- Agricultural Assessment
- Biodiversity Assessment
- Freshwater Assessment
- Heritage / Archaeological & Palaeontological Assessment

Specialist studies are at various stages of completion—some are ongoing, others have been conducted, and some have been concluded. The findings of some the studies have already been included in this report, however, the studies will be finalised and the findings included during the EIA phase.

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 5. These impacts could either be positive or negative. This includes an assessment of the alternatives, including the option of not proceeding with the proposed development (see Section 4).

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 thus is also a judgment value made by the individual assessor.

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 end result to the extent indicated, is given on a scale of 1-5 (1 being totally uncertain and 5 being absolutely certain), taking into consideration uncertainties, assumptions and gaps in knowledge. Cognisance of the minimum report content requirements of the various specialist assessments as per the Assessment Protocols (Government Notice 320, Government Gazette No. 43110 of 20 March 2020).

Table 5: 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 implementation of all development components with mitigations); or permanent.	**Temporary:** < 1 year (not including construction) **Short-term:** 1 – 5 years **Medium term:** 5 – 15 years **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) **Permanent:** Impact will be where mitigation or moderation by natural course or by human interference will not occur in a particular means or in a particular time period that the impact can be considered temporary

Criteria	Category
Extent (Describe whether the impact occurs on a scale limited to the site area; limited to broader area; or on a wider scale)	**Site Specific:** Expanding only as far as the activity itself *(onsite)* **Small:** restricted to the site's immediate environment within 1 km of the site *(limited)* **Medium:** Within 5 km of the site *(local)* **Large:** Beyond 5 km of the site *(regional)*
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)	**Very low:** Affects the environment in such a way that natural and/or social functions/processes are not affected **Low:** Natural and/or social functions/processes are slightly altered **Medium:** Natural and/or social functions/processes are notably altered in a modified way **High:** Natural and/or social functions/processes are severely altered and may temporarily or permanently cease
Probability of occurrence Describe the probability of the Impact actually occurring as definite (Impact will occur regardless of mitigations	**Improbable:** Not at all likely **Probable:** Distinctive possibility **Highly probable:** Most likely to happen **Definite:** Impact will occur regardless of any prevention measures
Status of the Impact Describe whether the Impact is positive, negative (or neutral).	**Positive:** The activity will have a social/ economical/ environmental benefit **Neutral:** The activity will have no affect **Negative:** The activity will be socially/ economically/ environmentally harmful
Degree of Confidence in predictions State the degree of confidence in predictions based on availability of information and specialist knowledge	**Unsure/Low:** Little confidence regarding information available (<40%) **Probable/Med:** Moderate confidence regarding information available (40-80%) **Definite/High:** Great confidence regarding information available (>80%)
Significance (The impact on each component is determined by a combination of the above criteria and defined as follows) The significance of impacts shall be assessed with and without mitigations. The significance of identified impacts on components of the affected biophysical or socio-economic environment (and, where relevant, with respect to potential legal requirement/s) shall be described as follows:	**No change:** A potential concern that was found to have no impact when evaluated **Very low:** Impacts will be site specific and temporary, with no mitigation necessary. **Low:** The impacts will have a minor influence on the proposed development and/or the environment. These impacts require some thought to adjust the project design where achievable, or alternative mitigation measures **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. The impact can be lessened or improved by an amendment in the project design or implementation of effective mitigation measures. **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 a no-go proposition on portions of the development in spite of any mitigation measures that could be implemented.

Table 6: The stated assessment and information will be determined for each individual issue or related groups of issues and presented in a 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 ***WITH*** Mitigation	
Indication of the certainty of a mitigation measure considered, achieving the end result to the extent indicated, is given on a scale of 1-5 (1 being totally uncertain and 5 being absolutely certain), taking into consideration uncertainties, assumptions and gaps in knowledge:		
Legal Requirements (Identify and list the specific legislation and permit requirements which are relevant to this development):		

9 CONCLUSION

The proposed development of the Harmony Instream Dam and its associated agricultural expansion aims to enhance irrigation capacity on Farm Houdenbek 415, thereby supporting the growth of agricultural activities within the Witzenberg Local Municipality. The project entails the construction of an instream dam with a storage capacity of approximately 250,000 cubic metres, primarily supplied by catchment runoff and surplus winter water. Water will be conveyed via a pipeline connection to the existing irrigation network, enabling more efficient water use for the proposed fruit orchards on the farm.

Given the location, ecological sensitivity, and scale of the development, several key environmental considerations have been identified, most notably relating to biodiversity, freshwater ecosystems, heritage features, and the sustainable use of agricultural land. These issues require further detailed investigation to ensure that potential impacts are appropriately identified, assessed, and mitigated.

The Scoping Phase, together with the initial Public Participation Process, has highlighted both stakeholder concerns and the environmental sensitivities of the site. Consequently, the need for a full Environmental Impact Assessment (EIA) has been confirmed. A suite of specialist studies is currently underway, and their findings will be integrated into the Environmental Impact Report (EIR), should the project proceed to the next phase.

Based on the significance of potential impacts identified during scoping, it is recommended that the application for Environmental Authorisation (EA) proceed to the EIA Phase. This will enable a comprehensive, evidence-based assessment and ensure that informed decision-making can occur with due regard for legal obligations, environmental risks, and socio-economic considerations, in accordance with the National Environmental Management Act (NEMA) and its associated regulations.

The following findings have emerged from the Scoping exercise and specialist studies conducted thus far:

Positive Findings/Impacts

- Agricultural Development

  The proposed development will support agricultural expansion through the establishment of irrigated fruit orchards. This will contribute to increased agricultural productivity, enhanced food security, and broader economic development in the Witzenberg Local Municipality.

- Job Creation

  Employment opportunities will be created during both the construction and operational phases. The construction phase will generate short-term jobs for local labour, while the operational phase will result in permanent employment in agricultural operations, supporting local economic upliftment.

- Economic Empowerment

  The project directly supports a 100% black-owned B-BBEE farming entity, Harmony Trust. By facilitating the growth and long-term sustainability of this entity, the project promotes economic empowerment for historically disadvantaged individuals and aligns with national transformation goals in the agricultural sector.

- Groundwater Recharge

  Although limited, infiltration from the dam may contribute to localised groundwater recharge. While not a primary objective, this may offer secondary hydrological benefits, particularly in areas with permeable geological conditions.

- Visual Integration

  The proposed dam is visually consistent with the surrounding agricultural landscape, which is already characterised by orchards, cultivated fields, and similar water storage structures. As such, the dam is not expected to negatively impact the visual character or rural sense of place.

- Heritage Conservation

  Archaeological features identified on site (HMY1, HMY2, and HMY3) will be preserved through the implementation of a 40–50 metre no-go buffer zone. This protective measure has been integrated into the dam layout, ensuring no direct disturbance to the heritage resources.

- Water Security

  The proposed dam will provide a reliable and controlled water supply for irrigation. This will improve the sustainability and resilience of farming operations, particularly during dry periods or under conditions of climate variability.

- Institutional Support

  The Koue Bokkeveld Water User Association, under whose management the area and water use licence fall, has expressed support for the proposed development and associated water uses. This reflects alignment with local water resource planning and responsible allocation.

Negative Findings/Impacts

- Loss of Agricultural Land

  The construction of the dam will result in the permanent loss of approximately 5.4 hectares of agricultural land within the inundation area. While the broader project supports agricultural development, this specific loss must be weighed against the overall gains in irrigated land.

- Impact on Watercourses

  The proposed dam will be constructed within a delineated watercourse, an unnamed tributary of the Houdenbek River. This triggers Section 21(c) and (i) water use activities and poses potential risks to aquatic habitat, flow dynamics, and riparian function. Careful design and management will be required to avoid degradation of freshwater ecosystems.

- Biodiversity Impact (Harmony Dam Site)

  The Harmony Dam site is located in a relatively undisturbed area that falls within a designated Mountain Catchment Area. Preliminary ecological input suggests that the site may contain sensitive vegetation types and habitat for species of conservation concern. Further botanical and faunal studies are required to assess the significance and to guide mitigation or offset measures, if necessary.

- Potential Heritage Risk

  Although heritage sites will be protected through buffer zones, the presence of rock art (HMY1–HMY3) near the dam site elevates the heritage sensitivity of the area. Construction activities may pose an indirect risk through vibration, dust, or accidental access. Heritage monitoring during construction may be required to ensure full compliance with heritage legislation.

- Alteration of Sense of Place

  While the dam is visually compatible with the existing landscape, the transformation of a natural watercourse into a managed water body may alter the local sense of place for some stakeholders, particularly if the area has cultural or historical value beyond its visual character.

- Soil Erosion and Sedimentation Risk

  The construction phase may disturb soils, particularly on slopes or near drainage lines, increasing the risk of erosion and downstream sedimentation. This could temporarily affect water quality and downstream infrastructure if not properly managed.

- Construction-related Impacts

  Temporary impacts during construction may include dust generation, noise, increased traffic, and potential disturbance to local communities and wildlife. These impacts, while short-term, will need to be managed through the implementation of an Environmental Management Programme (EMPr).

- Downstream Flow Regulation

  Although abstraction is based on surplus winter water, dam operations may alter the natural timing and volume of downstream flows if ecological flow requirements are not strictly implemented and monitored. Compliance with Instream Flow Requirements (IFRs) will be critical to prevent ecological degradation.