



**SECTION 24G ENVIRONMENTAL AUTHORISATION  
PROCESS FOR THE CONCENTRATION OF POULTRY IN 2004  
ON PORTION 27 OF THE FARM SUDWALAASKRAAL 271-JT,  
CITY OF MBOMBELA, MPUMALANGA PROVINCE**

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## EXECUTIVE SUMMARY

Mikon Farming CC is applying for Environmental Authorisation and Water use License by means of a Section 24G application process, for the concentration of poultry in 2004 on portion of the farm, prior to obtaining Environmental Authorisation (EA) from DARDLEA. Environmental authorisation and water use license application process for the concentration of poultry already commenced without obtaining the required approval from the DARDLEA, a Section 24G Environmental Authorisation Application is being applied for in accordance with the National Environmental Management Act 107, 1998.

Mikon Farming CC subsequently appointed Core Environmental Services to apply for the EA by means of conducting a Section 24G Environmental Authorisation Process and Water use license.

The operation of the poultry farm is likely to result in environmental and socio-economic impacts. The identified impact areas are listed below and discussed thereafter:

- *Generation of dust*
- *Generation of waste*
- *Odour*
- *Pests*
- *Impact on soil.*
- *Impact on water resources*
- *Health and safety.*
- *Socio-economic*

The table below summarises the impacts identified and assessed for the operational of the project:

**TABLE 1: ENVIRONMENTAL IMPACT STATEMENT**

IMPACT	SIGNIFICANCE BEFORE MITIGATION MEASURES	SIGNIFICANCE AFTER MITIGATION MEASURES
<b>Operational phase impact</b>		
Generation of dust	Low	Very Low
Waste generation and management	Low	Very Low
Odour	Low	Very Low
Pests	Medium	Low
Impact on soil (soil erosion)	Low	Very Low
Water pollution	Low	Very Low
Depletion of water resource	Low	Very Low
Health and Safety	Medium	Low
Socio-economic Impact	Neutral	High (+)

The assessment of the possible impacts associated with the operational activities, concluded that the impact on the surrounding environment is of **medium to low significance**. Recommendations have however been made to address the impacts which could affect the biophysical and socio-economic

spread of alien invasive vegetation. Recommendations for the mitigation of impact are included within Section 6 and the Draft Environmental Management Plan attached.

It is the opinion of the EAP that the EA for this project should be granted, and the proposed mitigation included as the conditions of the authorisation.

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## ABBREVIATIONS

BAR	Basic Assessment Report
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioners Association South Africa
I&AP	Interested and Affected Party
GDP	Gross Domestic Product
MDARDLEA	Mpumalanga Department of Agriculture, Rural Development, Land and Administration
MTPA	Mpumalanga Tourism and Parks Agency
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
PPP	Public Participation Process
SACNASP	South African Council for Natural Scientific Professions

# 1. OVERVIEW OF THE PROJECT

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## 1.1 Introduction.

Mikon Farming CC is applying for Environmental Authorisation by means of undertaking a Section 24G Environmental Authorisation application process, as three poultry houses were constructed in 2004 without obtaining Environmental Authorisation as required in terms of the National Environmental Management Act 107, of 1998 (NEMA 107, of 1998).

Mikon Farming CC have been in operation for several years. As part of their operation prior to 1998, the following activities were undertaken:

- Operation of 27 poultry houses with 15 000 poultry per unit.
- Poultry abattoir with a slaughtering capacity of 8 500 units per day.

In the year 2004, Mikon Farming CC commenced with the construction of three additional poultry houses, accommodating 15 000 poultry per unit (thus accommodating an additional 45 000 poultry). In accordance with GNR1182 and GNR1183, of 1997, promulgated by the Environmental Conservation Act of 1989 (Act No. 73 of 1989), Environmental Authorisation is required from the competent authority, prior to commencing with any construction activities associated with the concentration of livestock for the purpose of mass commercial production. It is also noted that Mikon Farming is operating a poultry abattoir on the property, however, with the slaughtering capacity of 8500 units per day, no Environmental Authorisation was required prior to commencing with the activities. For this reason, an application is made to the Competent Authority (Department of Agriculture, Rural Development, Land and Environmental Affairs – DARDLEA), for the commencement of the construction of the three poultry houses only. The application in terms of Section 24G of the Environmental Management Act 107, of 1998 (NEMA 107, of 1998) allows for the rectification of the commencement of a listed activity conducted in the absence of the requisite Environmental Authorisation.

This Section 24G Environmental Authorisation process is therefore submitted for the three additional poultry houses constructed in 2004, and not for the 27 poultry houses which were operating prior to the promulgation of the ECA 73, of 1989.

As for the water used during the operation of the agricultural activities, it is noted that water is abstracted from one spring located on the property. The water abstracted from the spring is used for the poultry houses as well as the poultry abattoir. In accordance with the National Water Act 36 of 1998 (NWA, 1998), a Water Use License (WUL) is also required in terms for the respective water uses.

Mikon Farming CC subsequently appointed **Core Environmental Services** to apply for the EA and WUL by means of conducting a Section 24G Environmental Authorisation Process in accordance with the NEMA 107 of 1998 as well as a Water Use Licensing process in accordance with the NWA 36 of 1998.

## 1.2 Location

All activities associated with the poultry houses and poultry abattoir is located on portion 27 of the farm Sudwalaaskraal 271-JT, City of Mbombela, Mpumalanga Province.

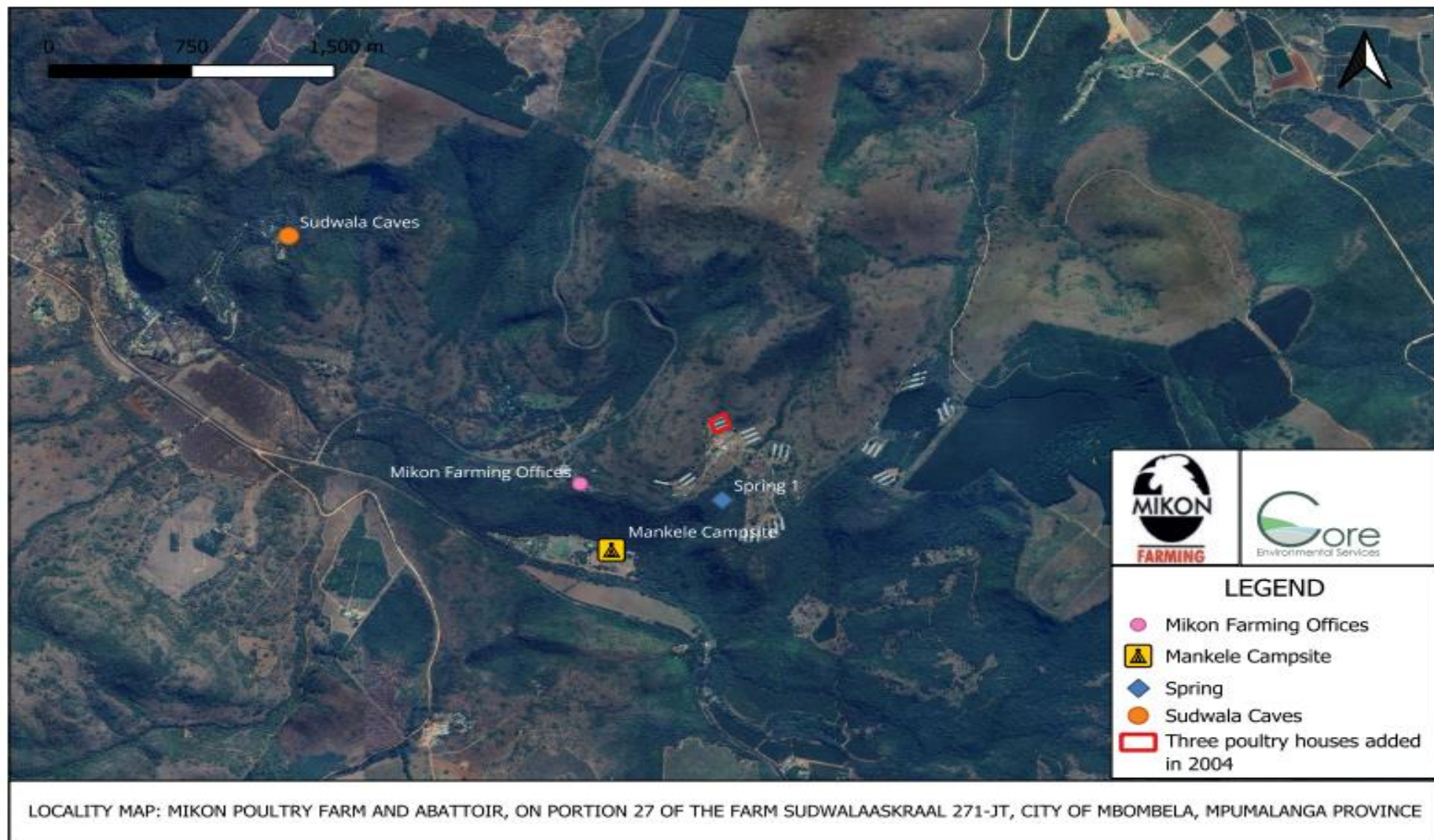
Coordinates:

25°22'53.83"S,

30°43'20.97"E

Please refer to the locality map below, Figure 1.





**FIGURE 1: LOCALITY MAP - MIKON POULTRY FARM AND ABATTOIR, ON PORTION 27 OF THE FARM SUDWALAASKRAAL 271-JT, CITY OF MBOMBELA, MPUMALANGA**

## 1.3 Details of the EAP

Ms. Anne-Mari Hitge is an Environmental Specialist, who started her studies at the North-West University (NWU) and completed her Bachelor of Science: Environmental Management at the University of South Africa (UNISA) in 2007. Ms. Hitge is registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA Reg No: 2020/602) as well as the South African Council for Natural Scientific Professionals as a Certificated Natural Scientist (Reg. No 300067/15). In addition to her qualification, she completed short courses in soil classification and wetland delineations (Terrasoil Science), Geographic Information Systems (University of KwaZulu-Natal), and Environmental Impact Assessments (NWU).

## 1.4 Policy Legal and Administrative Framework

### 1.4.1 National Environmental Management Act 107, 1998

In accordance with GNR1182 of 1998, the following listed activity was applicable for the addition of the three poultry houses which commenced in 2004 and therefore a Section 24G Environmental Authorisation application is submitted for the following listed activity:

GNR 1182, 1998, Activity 3:

*The concentration of livestock in a confined structure for the purpose of mass commercial production*

As the above activity have already commenced and is currently in operation, Environmental Authorisation is applied for by means of conducting a Section 24G Environmental Authorisation application process in accordance with GNR982, of 2014 (as amended).

Other national, provincial or local legislation applicable to the proposed project, is indicated in Table 1, below.

**TABLE 1: LEGISLATION APPLICABLE TO THE PROJECT**

Applicable legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments considered	Project application and type (permit / licence / authorisation / comment)
The Constitution of South Africa, Act No. 108 of 1996	<p>Mikon Farming CC will be required to adhere to the Environmental Management Programme (EMPr) requirements to ensure that social and environmental management considerations are considered and implemented.</p> <p>As per Section 25 the Constitution, a public participation process (PPP) was and will continue to be undertaken, as this is an essential mechanism for informing stakeholders of their rights and obligations in terms of the project.</p>
National Environmental Management Act, 1998 (Act No. 107 of 1998)	Environmental Authorisation was however not applied for prior to the construction and operation of the three poultry houses and therefore a Section 24G rectification process is undertaken to obtain Environmental Authorisation for the above listed activity in accordance with NEMA 107, of 1998.
National Water Act, 1998 (Act No. 36 of 1998)	<p>Water is a scarce resource and must subsequently be managed in accordance with the National Water Act 36 of 1998.</p> <p>It is also noted that water is currently being abstracted from a spring located on the property and therefore application is also made in terms of Section 21 of the National Water Act 36 of 1998.</p>

National Biodiversity Act, 2004 (Act no 10 of 2004)	<p>The act provides for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998; the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources, the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resource; the establishment and functions of a South African National Biodiversity Institute; and for matters connected therewith.</p> <p>The National Biodiversity Act, 2004, must therefore be considered prior to the clearance of vegetation to minimise the impact on the terrestrial biodiversity.</p>
Animal Health Act, 2002 (Act No. 7 of 2002)	This act is central to managing and preventing diseases in poultry, ensuring biosecurity measures are followed to protect poultry health.
Meat Safety Act, 2000 (Act No. 40 of 2000)	This legislation governs the safety of meat products, including poultry, from farm to market, ensuring that all poultry products meet health and safety standards.
Animal Diseases Act, 1984 (Act No. 35 of 1984)	This act provides the framework for controlling diseases that can impact poultry, including avian flu, which is critical for maintaining poultry farm biosecurity.
Mbombela Local Municipality Integrated Development Plan (IDP)	<p>The primary objectives of the IDP are to foster economic growth that creates jobs and improve infrastructure within the province.</p> <p>Job opportunities has been created by the proposed agricultural activities which supports economic growth within the area.</p> <p>The livelihood of individuals is therefore impacted positively.</p>

## 1.5 Description of the project.

Mikon Farming CC have been in operation for several years. As part of their operation prior to 1998, the following activities were undertaken:

- Operation of 27 poultry houses with 15 000 poultry per unit.
- Poultry abattoir with a slaughtering capacity of 8 500 units per day.

In the year 2004, Mikon Farming CC commenced with the construction of three additional poultry houses, accommodating 15 000 poultry per unit (thus accommodating an additional 45 000 poultry).

A poultry house is a specialized facility designed to manage and support poultry health and productivity through effective environmental control, feeding, and waste management. Key elements include maintaining optimal temperature and humidity, using efficient ventilation and heating systems, and providing balanced feed and clean water. Housing can range from caged to floor systems, each tailored to specific poultry types and purposes. Health and biosecurity measures are critical to prevent disease, while waste management systems handle manure responsibly. Proper lighting, energy efficiency, and adherence to regulatory standards ensure a successful and sustainable poultry operation.

The poultry house is kept warm by using a biomass boiler fueled by macadamia nutshells which is an efficient and sustainable solution. The water pipelines surrounding the poultry house is then heated by this boiler which assists with keeping the broilers at an acceptable temperature. The temperature is then monitored with thermostats. Proper ventilation, insulation, and regular maintenance of the poultry houses are undertaken as it is crucial for safety and efficiency, while managing emissions.

This Section 24G Environmental Authorisation process is therefore submitted for the three additional poultry houses constructed in 2004, and not for the other 27 poultry houses which were operating prior to the promulgation of the ECA 73, of 1989.

It is also noted that Mikon Poultry Farm is operating a poultry abattoir on the property, however, with the slaughtering capacity of 8500 units per day, no Environmental Authorisation was required prior to commencing with the activities.

As for the water used during the operation of the agricultural activities, it is noted that water is abstracted from one spring located on the property. The water abstracted from the spring is used for the poultry houses as well as the poultry abattoir. In accordance with the National Water Act 36 of 1998 (NWA, 1998), a Water Use License (WUL) is also required in terms for the abstraction of water from the spring and is subsequently being applied for. A Geo-Hydrological Assessment was undertaken, and it was established that sufficient water is available for the operations on portion 27 of the farm Sudwalaaskraal. According to the assessment undertaken, it was noted that the spring delivers 0.93Mm<sup>3</sup> per annum. The water demand for the operations on portion 27 of the farm Sudwalaaskraal equates to 0.146Mm<sup>3</sup> per annum. For this reason, the spring delivers sufficient water for the operations undertaken on portion 27 of the farm Sudwalaaskraal 271-JT.

## 1.6 Need and Desirability.

Chicken/Poultry is the meat which is mostly consumed in South Africa, valued for its affordability, nutritional benefits, and cooking versatility. Consumption of poultry is growing yearly and this

increase is driven by population growth, urbanization, and rising incomes, with the average person consuming about 40 kg annually. Poultry remains a preferred choice even during economic downturns due to its lower cost compared to other meat products.

Poultry farming is labour-intensive, generating jobs across the value chain, especially in rural areas with limited employment. It is accessible to small-scale farmers due to low start-up costs and quick returns, promoting entrepreneurship and community upliftment. Increasing local production reduces the need for imports, saving foreign exchange and improving South Africa's trade balance, particularly important given the country's reliance on poultry imports.

A poultry farm in South Africa is both highly desirable and essential due to the high demand for poultry products, its significant economic benefits, and the social advantages it offers. Setting up a poultry farm can greatly boost the local economy, create stable jobs, improve food security, and provide opportunities for growth and sustainability in agriculture. With careful planning and adherence to best practices, such a farm can be a profitable and influential enterprise in South Africa's evolving market.



## 2 PUBLIC PARTICIPATION PROCESS

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The purpose of this chapter is to provide an outline of the public participation process (PPP) to date and the way forward with respect to the Section 24G Environmental process.

Consultation with the public forms an integral component of the EA process. This process enables Interested and Affected Parties (I&APs) (e.g. directly affected landowners, national-, provincial- and local authorities, and local communities etc.) to raise their issues and concerns regarding the proposed activities, which they feel should be addressed in the 24G Environmental Rectification process. The PPP has thus been structured such as to provide I&APs with an opportunity to gain more knowledge about the proposed project, to provide input through the review of documents/reports, and to voice any issues or concerns at various stages throughout the 24G Environmental Authorisation process.

I&APs were identified during the public participation phase of the project. All the parties identified as an I&AP (surrounding landowners, relevant departments, stakeholders, local and district authorities) have automatically been registered in the I&APs database for the project. The registered I&AP list is attached as **Annexure C.1**.

In effort to engage potential stakeholders, different communication methods were used to inform them about the project and how to get involved in the BA process. These methods include:

- Distributing English Background Information Documents (BIDs) to all registered I&APs, proof of which is attached in **Annexure C.2**;
- Placement of media advert in a local newspaper (The Lowvelder) on **8 August 2024** (see **Annexure C.3**).
- Placing of a notice at the proposed site took place on **6 August 2024** (see **Annexure C.4**);

The draft Section 24G Report will be made available for public review during September – October 2024.

To date, no comments have been received from identified and registered I&AP's.

## 3 CONSIDERATION OF ALTERNATIVES

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The EIA process requires the developer to identify and investigate/assess feasible and reasonable alternatives. The project alternatives range from the location where the activity is proposed, type of activity to be undertaken, design of the activity, technology to be used in the activity to the option of not implementing the activity (No-Go Alternative).

The assessment of the alternatives is a complicated and multi-faceted issue, which is essential to the success of this application and ultimately to the proper, responsible and sustainable operation of the proposed project.

### 3.1 Alternative Selection

#### 3.1.1 Location alternatives

No other locality alternatives could be investigated as the application is for a S24G Environmental Authorisation application of which construction for the farm poultry houses already exist.

#### 3.1.2 No-Go alternative

The no-go alternative would be to not authorise the application for environmental authorisation and water use license application for the concentration of poultry. Should this alternative be favourable, the current expanded area must be removed, and rehabilitation of the area will have to be undertaken. The impacts associated with the proposed expansion were not found to be so severe for the no-go alternative to be further investigated.



## 4 DESCRIPTION OF THE AFFECTED ENVIRONMENT

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The description of the affected environment below draws on existing knowledge from published data, previous studies, specialist investigations, and site visits to the area.

### 4.1 Topography

The topography of Mpumalanga region is a varied one, comprising of the Highveld (high lying) and the Lowveld (low lying) regions. Mpumalanga is mainly situated on the high plateau grassland known as Highveld. The Highveld stretches for hundreds of kilometres eastwards, until it rises towards mountain peaks and deep valleys of the Escarpment in the north-east. From the escarpment, it plunges hundreds of meters down to the low-lying area known as the Lowveld. The Lowveld region is mostly flat with some rocky outcrops.

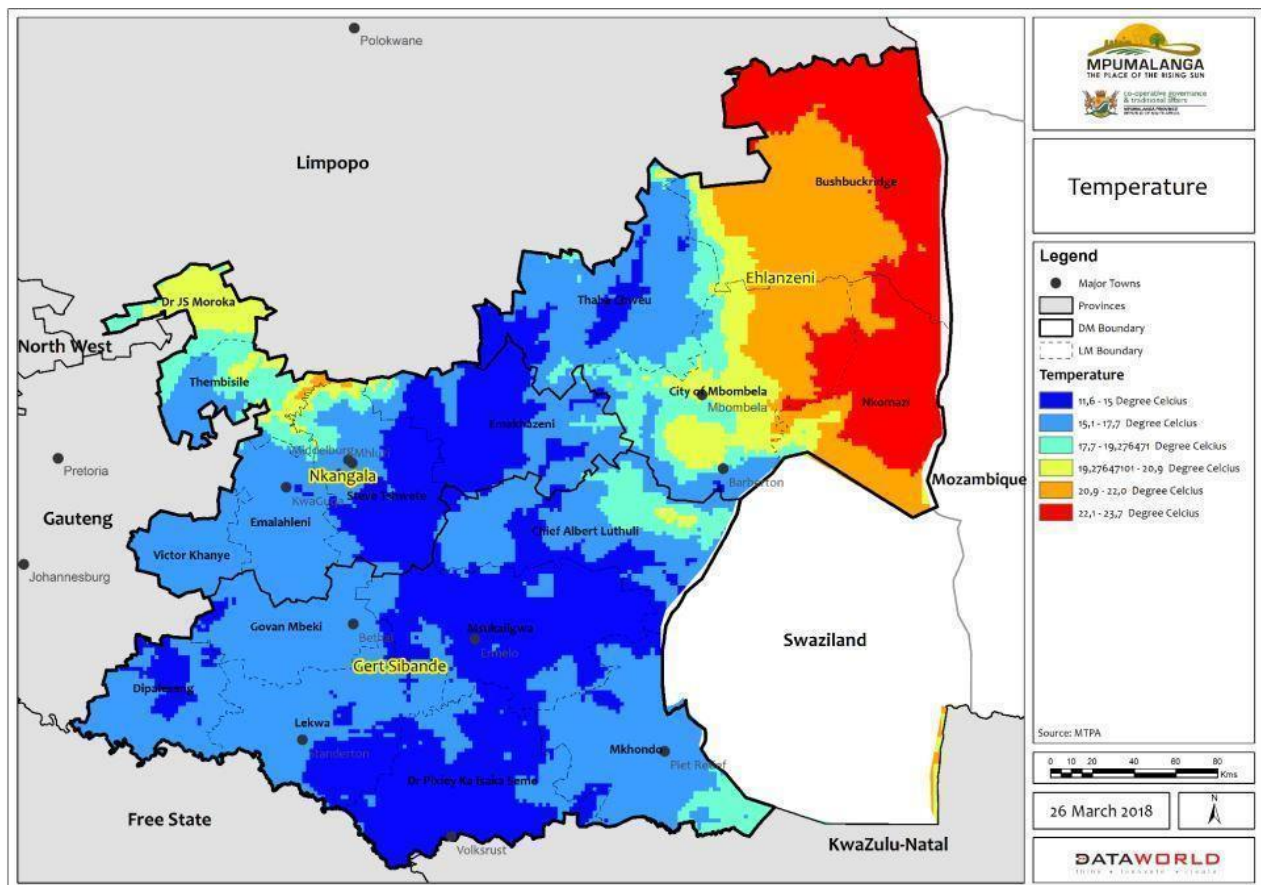
The topography of the area where Mikon Poultry Farm is located, is consist of undulating hills and valleys

The Area has an elevation that typically ranges between 600 and 1,400 meters above mean sea level.

### 4.2 Climate

Mpumalanga has a sub-tropical climate characterised by hot summers and mild to cool winters shifting to cold and frosty conditions in the Highveld regions. World Climate Data presented in the province's Vulnerability Assessment Report shows that the current mean annual temperatures are highest in the north-west and northeast regions of the province, while mean annual precipitation tends to increase towards the eastern regions of the province. The province is characterised by summer rainfall and thunderstorms, except the escarpment area which receives fair levels of precipitation throughout the year (MCCVA, 2015).

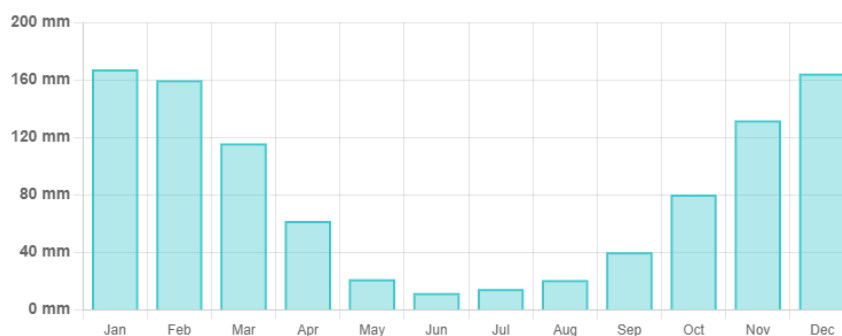
Mbombela has a temperate highland tropical climate with dry winters climate (Classification: Cwb). The district's yearly temperature is 23.45°C and it is 2.23% higher than South Africa's averages. Mbombela typically receives about 75.3 millimetres of precipitation in its driest months but overall, the yearly precipitation is approximately **458 mm** and has 126.1 rainy days (34.55% of the time) annually. Figure 3 shows the temperature of Mpumalanga.



**FIGURE 2: TEMPERATURE IN MPUMALANGA (MPUMALANGA DEVELOPMENT SPATIAL FRAMEWORK, 2018)**

Mbombela Municipality experiences a subtropical climate with a distinct wet and dry season. The monthly precipitation is highest during the summer months, typically from November to March, when the area receives most of its rainfall. During these months, average monthly precipitation can range from about 80 to 150 mm, with January and February often being the wettest months. In contrast, the winter months from May to August are much drier, with monthly precipitation dropping significantly, often to below 20 mm. This seasonal pattern reflects the region's reliance on summer rains, which are critical for agriculture and water supply.

The mean monthly precipitation over the year, including rain, snow, hail etc.



**FIGURE 3: AVERAGE PRECIPITATION FOR MBOMBELA LOCAL MUNICIPALITY**

(link: <https://weather-and-climate.com/average-monthly-Rainfall-Temperature-Sunshine,nelspruit,South-Africa>).

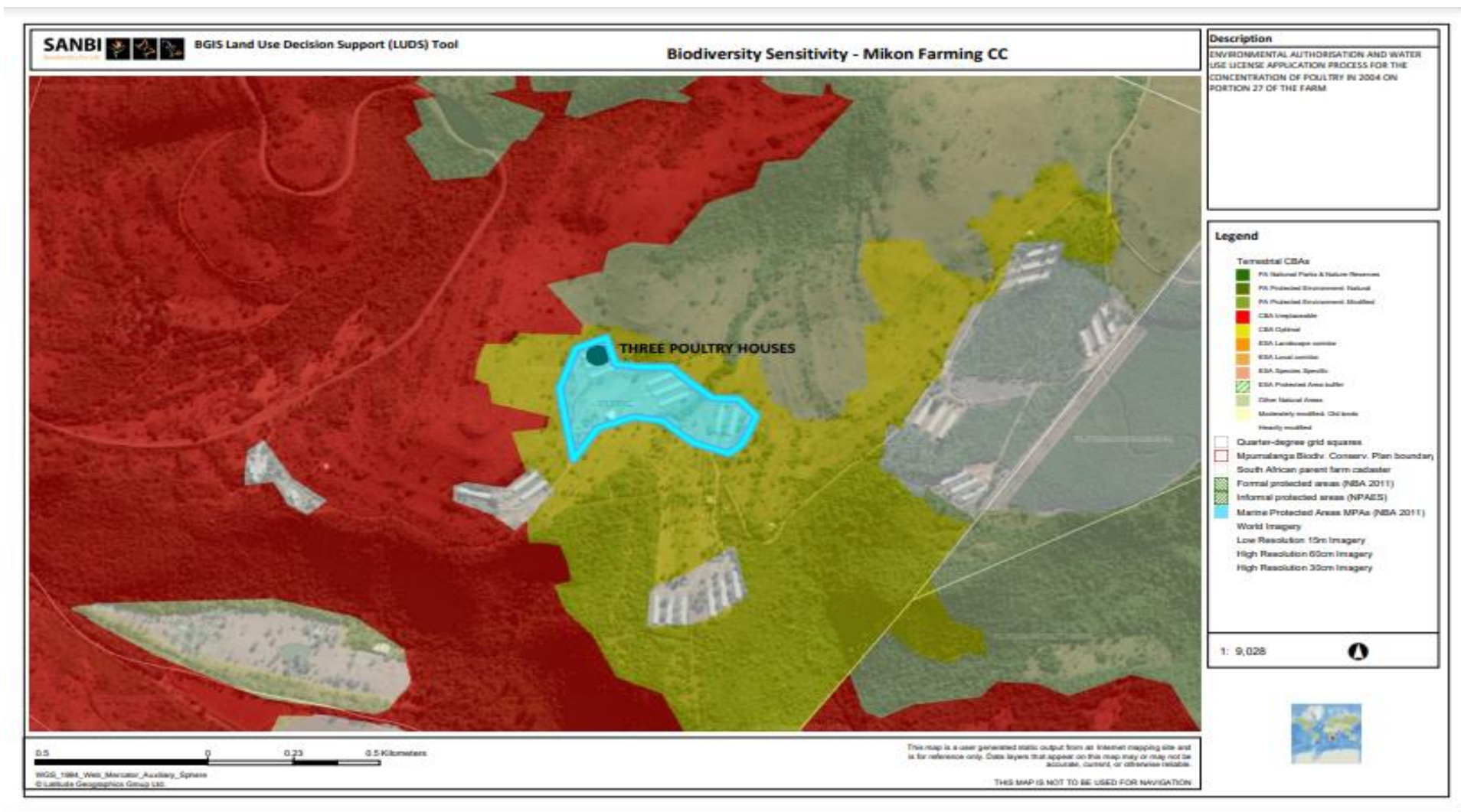
### 4.3 Terrestrial Ecology.

Terrestrial Ecology: According to Acocks (1988) the study Area is classified as a Lowveld (A10). Furthermore, it falls within the **Savanna biome**, specifically within the **Lowveld** region of the Savanna biome. This biome is characterized by a mix of grasslands and scattered trees, and it features a subtropical climate with hot, wet summers and mild, dry winters.

The Savanna biome is the largest biome in South Africa and is known for its rich biodiversity, including a wide variety of plant species, large herbivores, and their predators. In Mbombela, the vegetation typically includes species like *Acacia* (now *Vachellia* and *Senegalia*), *Marula* trees (*Sclerocarya birrea*), and various grasses that thrive in the region's climate.

According to the Mpumalanga Biodiversity Sector Plan, 2014, most of the terrestrial ecosystems within the study area, is classified as **Heavily or Moderately Modified Areas**. The three poultry houses for which the Section 24G Application is lodged falls within an area classified as **heavily or moderately modified**. The scattered untransformed sections are classified as Other Natural Areas as well as Critical Biodiversity Areas. The Mpumalanga Biodiversity Sector plan of 2014 describe the classes as follows:

- **Heavily Modified Areas** - Are those most altered by human activity, with low ecological value.
- **Moderately Modified Areas** – Areas that still retain some ecological function and biodiversity, suitable for sustainable land use.
- **Other Natural Areas** - Are largely unmodified and important for maintaining broader ecological networks.
- **Critical Biodiversity Areas**- Are of the highest conservation priority, crucial for preserving the region's biodiversity and ecological processes.



**FIGURE 4: TERRESTRIAL ECOLOGICAL SENSITIVITY OF THE PROJECT AREA ACCORDING TO THE MPUMALANGA BIODIVERSITY SECTOR PLAN,**

## 4.4 Surface and Groundwater

The nearest surface water body from the project site is the Houtbosloop. The river is approximately 50 to 70 km long. This length accounts for its course from its origins in the mountainous regions of the Mpumalanga escarpment, where it flows through various terrains, including valleys and lowveld areas, before it joins the Elands River. Despite its modest length, the Houtbosloop River plays a significant role in the local hydrology and ecology, contributing to the Crocodile River catchment.

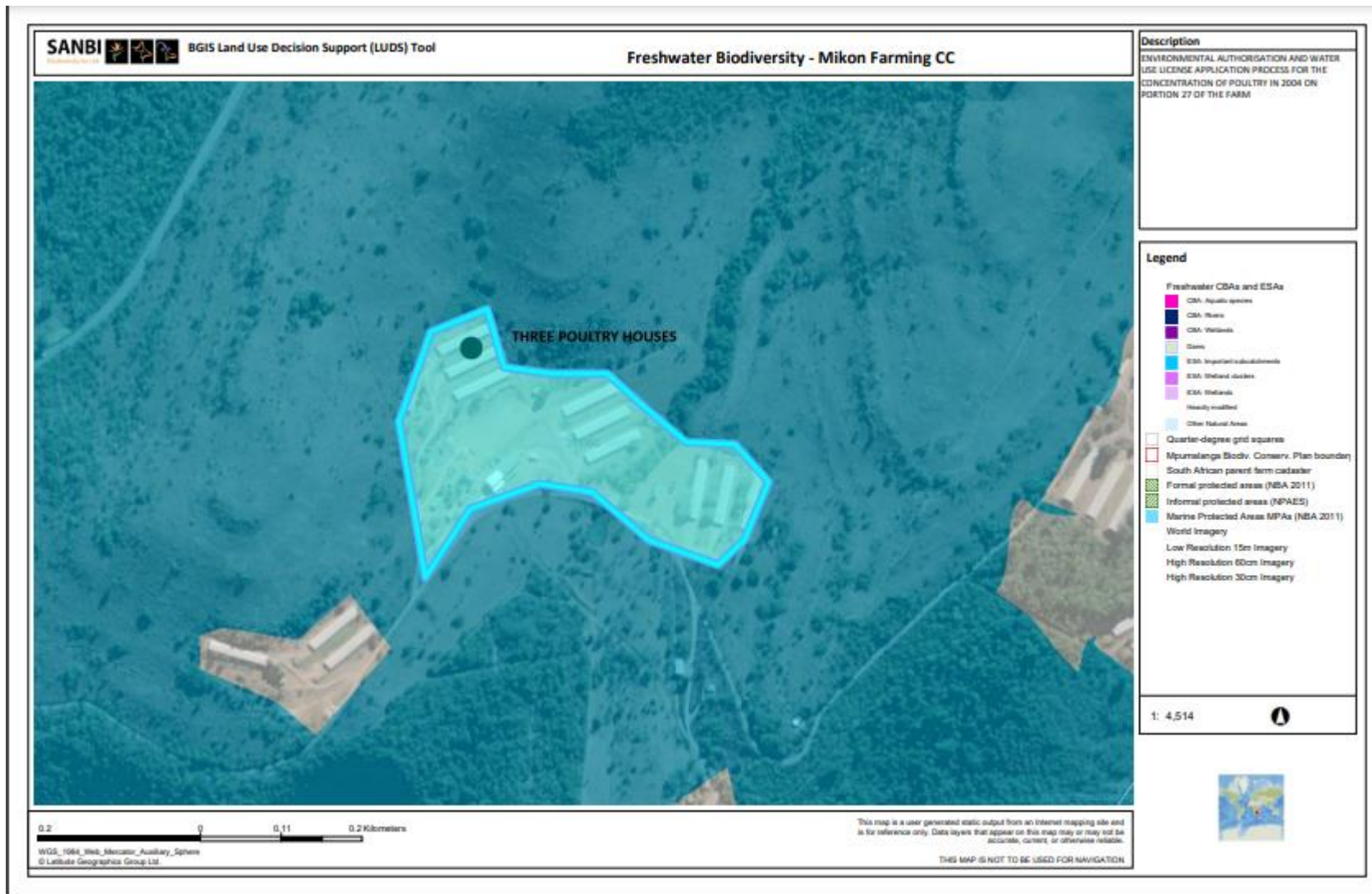
The distance between the poultry houses and the Houtbosloop is notable which is approximately 1.576 km north which indicates that the activities of the Mikon Farming CC will not directly have an impact on the characteristics or quality of the river. However, there is a spring that is used by the farm as the main source of water, the spring is located approximately 0.4 km south the three poultry houses.

The impact on water resources during the operational phase could be the use of septic tanks, which could lead to possible groundwater contamination. Septic tanks are used for sanitation purposes, and therefore, special care must be taken to ensure that groundwater quality is not affected. The other impact which is further investigated within the report is the possible over abstraction from the spring which could result to the depletion of a water resource.

A Geo-Hydrological Assessment was undertaken, and it was found that the quality of the water complies with the SANS241-1:2015 drinking water quality standards. According to the assessment, it was found that the spring yields 20-30 litres/second, thus delivering 2549m<sup>3</sup>/day (930 385m<sup>3</sup>/annum). According to the assessment undertaken, the spring will be able to supply the approximately 200 000m<sup>3</sup>/annum which is the total volume of water requirements for the farming operations. The impact on the spring would be negligible.

Freshwater ecology - According to the Mpumalanga Biodiversity Sector Plan, 2014, Most of the freshwater ecosystems within the study area is classified as heavily modified and other natural areas. No wetlands were identified within the proposed project area.





**FIGURE 5: FRESHWATER SENSITIVITY OF THE PROJECT AREA ACCORDING TO THE MPUMALANGA BIODIVERSITY SECTOR PLAN, 2014**

## 4.5 Land use

Mikon Poultry Farm is located close to Mankele Campsite and this campsite is surrounded by natural, protected areas with untransformed vegetation. The Sudwala Caves is also located approximately 2.618km west of the Mikon Poultry Farming operations. This facility serves as a great tourist attraction.

The general area is mountainous, and the land cover is natural woodland. Large areas in the surrounding mountains have been transformed to forestry plantations. Several surrounding areas are also being used for agricultural purposes and is being used for fruit and nut production.

## 4.6 Geology and Soils

Based on the published 1:250 000 Geological map, Mbombela is underlain with the Granite Group with highly permeable and erodible, colluvial sands and residual soils overlaying the granitic bedrock. The soil can be described as red and yellow soils with low to medium base status. The soil is freely drained and structureless. May have restricted soil depth, excessive drainage, high erodibility, and low natural fertility.

## 4.7 Heritage.

In accordance with information obtained from the Department of Environmental Affairs' screening tool, the property has been identified to be of low archaeological significance. As the poultry farm has been in operation for many years, it is unlikely that any artefact of archaeological or historical value would have been impacted during the expansion activities

## 4.8 Socio-Economic Environment

The project area is located within the City of Mbombela. The larger portion of the 695 913 individuals within the Mbombela Local Municipality, live in peri-urban and rural areas. Approximately 75% of the people live within communal areas on the eastern axis of the city which is far from the city.

The City of Mbombela currently has an unemployment rate of 28% with 50% of the people living below the poverty line. The levels of skill and qualifications of the population are also low which is problematic for future economic development. The socio-economic context of the surrounding environment can therefore be described as a community with a low percentage of education and high unemployment rate.

## 5 METHODOLOGY OF ASSESSING THE SIGNIFICANCE OF IMPACTS

This section outlines the method used for assessing the significance of the potential environmental impacts.

For each impact, the **EXTENT** (spatial scale), **MAGNITUDE** and **DURATION** (time scale) would be described, as shown in **Table 2**. These criteria are then used to determine the **SIGNIFICANCE** of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The mitigation described in the Report represents the full range of plausible and pragmatic measures but does not necessarily imply that they would be implemented.

The following tables show the scale used to assess these variables and defines each of the rating categories.

**TABLE 2: ASSESSMENT CRITERIA FOR THE EVALUATION OF IMPACTS**

Criteria	Category	Description
Extent or spatial influence of impact	<b>Regional</b>	Beyond a 30km radius of the candidate site.
	<b>Local</b>	Within a 30km radius of the candidate site.
	<b>Site-specific</b>	On site or within 100 m of the candidate site.
Magnitude of impact (at the indicated spatial scale)	<b>High</b>	Natural and/ or social functions and/ or processes are <i>severely</i> altered
	<b>Medium</b>	Natural and/ or social functions and/ or processes are <i>notably</i> altered
	<b>Low</b>	Natural and/ or social functions and/ or processes are <i>slightly</i> altered
	<b>Very low</b>	Natural and/ or social functions and/ or processes are <i>negligibly</i> altered
	<b>Zero</b>	Natural and/ or social functions and/ or processes remain <i>unaltered</i>
Duration of impact	<b>Long-term</b>	More than 10 years after construction
	<b>Medium-term</b>	Up to 5 years after construction
	<b>Construction-term</b>	Up to 3 years

The **SIGNIFICANCE** of an impact is derived by considering magnitude, duration and extent of each impact. The criteria employed in arriving at the different significance ratings is shown in Table 3.



**TABLE 3: DEFINITION OF SIGNIFICANCE RATINGS**

Significance ratings	Level of criteria required
High	<ul style="list-style-type: none"> <li>• High magnitude with a regional extent and long-term duration</li> <li>• High magnitude with either a regional extent and medium-term duration or a local extent and long-term duration</li> <li>• Medium magnitude with a regional extent and long-term duration</li> </ul>
Medium	<ul style="list-style-type: none"> <li>• High magnitude with a local extent and medium-term duration</li> <li>• High magnitude with a regional extent and construction period or a site-specific extent and long-term duration</li> <li>• High magnitude with either a local extent and construction period duration or a site-specific extent and medium-term duration</li> <li>• Medium magnitude with any combination of extent and duration except site specific and construction period or regional and long term</li> <li>• Low magnitude with a regional extent and long-term duration</li> </ul>
Low	<ul style="list-style-type: none"> <li>• High magnitude with a site-specific extent and construction period duration</li> <li>• Medium magnitude with a site-specific extent and construction period duration</li> <li>• Low magnitude with any combination of extent and duration except site specific and construction period or regional and long term</li> <li>• Very low magnitude with a regional extent and long-term duration</li> </ul>
Very low	<ul style="list-style-type: none"> <li>• Low magnitude with a site-specific extent and construction period duration</li> <li>• Very low magnitude with any combination of extent and duration except regional and long term</li> </ul>
Neutral	<ul style="list-style-type: none"> <li>• Zero magnitude with any combination of extent and duration</li> </ul>

Once the significance of an impact has been determined, the **PROBABILITY** and **CONFIDENCE** of this impact are determined using the rating systems outlined in **Table 4** and **Table 5**. The significance of an impact should always be considered in concert with the probability of that impact occurring. Lastly, the **REVERSIBILITY** of the impact is estimated using the rating system outlined in **Table 6**.

**TABLE 4: DEFINITION OF PROBABILITY RATINGS**

Probability ratings	Criteria
Definite	Estimated greater than 95 % chance of the impact occurring.
Probable	Estimated 5 to 95 % chance of the impact occurring.
Unlikely	Estimated less than 5 % chance of the impact occurring.

**TABLE 5: DEFINITION OF CONFIDENCE RATINGS**

Confidence ratings	Criteria
Certain	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

**TABLE 6: DEFINITION OF REVERSIBILITY RATINGS**

Reversibility ratings	Criteria
Irreversible	The activity will lead to an impact that is in all practical terms permanent.
Reversible	The impact is reversible within 2 years after the cause of the impact is removed.

## 6 OPERATIONAL PHASE IMPACTS

Seeing that the poultry farm is already in operation, only operational impacts are to be assessed within the section below.

### 6.1 Operational Phase Impacts

During operation, the activities associated with Mikon Farming CC are likely to result in the following environmental and socio-economic impacts:

- *Generation of dust*
- *Generation of waste*
- *Odour*
- *Pests*
- *Impact on soil.*
- *Impact on water resources*
- *Health and safety.*
- *Socio-economic*

#### 6.1.1. Generation of dust

##### Description of the potential impacts

During farming operations, dust will be generated. This dust primarily consists of fine particulate matter, which may include feed particles, feathers, litter, and dried manure. Dust generation can occur at various stages of poultry farming, including during feed handling, bird activity, cleaning operations, and transportation

##### Significance of the impacts

Besides the employees and the houses on the farm property, there are no surrounding land users who could be affected by the generation of dust. The impacts associated with the generation of dust is also of short duration and therefore the significance of the impact is low. Mitigation measures must however be implemented to minimise the possibility of the impact occurring.

TABLE 7: SIGNIFICANCE OF DUST GENERATION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Dust generation <b>[NEGATIVE]</b>	Low	Site specific	Short-term	Probable	Low	Very Low

## Mitigation measures

- Using water sprays, misting systems, or dust suppressants to reduce airborne dust (if required).
- Recommendations included within the Environmental Management Plan must be adhered to.

### 6.1.2. Generation of waste

#### Description of the potential impacts

The different sources of waste in a poultry farm that can impact the environment includes waste from:

- **Poultry manure:** A primary waste consisting of droppings, feathers, and spilled feed, rich in nutrients like nitrogen and phosphorus.
- **Poultry litter:** Bedding material such as sawdust, wood shavings, or straw mixed with chicken excrement.
- **Carcass waste:** Refers to the bodies of deceased chickens or other poultry unsuitable for human consumption.

#### Significance of the impact

Improper disposal of waste will have a significant impact on the surrounding environment as it could have the following impacts:

- Increase the health risk;
- Contaminate ground water resources; and
- Cause landfill airspace shortages

#### Significance of the impact

At present, waste generated by the operational activities on site is managed appropriately as waste generated is reduced, reused or recycled before it is disposed of. Poultry manure and litter is a good source for fertilizers and is currently also being used for this purpose. Deceased chickens are collected daily by a nearby crocodile farm for feed.

Taking the above into consideration, it is evident that the generation of waste during the operational phase is regarded to be of medium magnitude, site specific extent and short-term duration. For this reason, the impact is regarded to be of low significance prior to the implementation of mitigation measures.

**TABLE 8: SIGNIFICANCE OF GENERATION OF WASTE**

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Waste generation and management <b>[NEGATIVE]</b>	Medium	Site specific	Short term	Probable	Low	Very Low

### Mitigation measures

- Poultry litter should be stored with proper cover and containment to reduce environmental impacts. Farmers should use leak-proof storage pits or lagoons capable of holding the maximum waste volume between cleanouts. Covering these areas helps manage odors and prevents rainwater from washing nutrients into waterways.
- Poultry litter must only be stored temporarily until it can be sold to adjacent farms as fertilizer.
- Recommendations included within the Environmental Management Plan must be adhered to.

### 6.1.3 Odour

#### Description of the potential impact

Unwanted odours emanating from the farm could include odours from livestock operations and temporary manure storage facilities. Many of the foul-smelling compounds emitted from animal production operations are as a result of decomposition of livestock and poultry wastes in the absence of air. Aerobic decomposition (decomposition in the presence of air) generally produces fewer odorous by-products than anaerobic decay, but aerobic decay can enhance volatilization of gaseous compounds that produce some odors and degrade environmental quality (*Powers, 2003*). Odor from animal feeding operations is not caused by a single compound, but is rather the result of a large number of contributing compounds including NH<sub>3</sub>, volatile organic compounds (VOCs), and H<sub>2</sub>S (*National Academy of Sciences, 2003*).

The most common odor complaint by the public associated with poultry production is related to accumulation of chicken manure and the land application of manure. However, it must be noted that the poultry houses are cleaned regularly and no manure is applied to land on the property. Manure is sold as fertilizer.

#### Significance of the impact

Due to the current practises of the poultry operation, the impact of odours emanating from the site is minimised and managed appropriately. For this reason, the magnitude of the impact is regarded as low, the extent of the impact is site specific, while the duration of the impact could be medium term if not mitigated. For this reason, the impact is regarded to be of low significance prior to the implementation of mitigation measures.

**TABLE 9: ODOUR**

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Odour <b>[NEGATIVE]</b>	Low	Site specific	Medium term	Probable	Low	Very Low

### Mitigation measures

- Poultry houses must be cleaned regularly and poultry litter and manure must be stored only temporarily until it can be sold as fertilizer;
- Measures included within the Environmental Management Programme must be adhered to.

### 6.1.4 Pests

#### Description of the potential impact

Pests can significantly impact poultry operations by transmitting diseases, causing physical harm to the livestock and reduce productivity. They also lead to economic losses due to increased pest control costs and potential biosecurity breaches, which can result in regulatory penalties and market reputation damage.

One of the largest poultry pest management problems facing the poultry producer today is fly control. Large poultry operations have as a byproduct a large volume of waste that cannot be removed immediately, and this provides breeding ground for flies.

Effective pest management is essential to maintaining the health of the birds, the farm's productivity, and its economic viability.

#### Significance of the impact

The significance of pest impacts on poultry operations is high due to the potential for severe health issues, substantial economic losses, and long-term productivity declines. The likelihood of occurrence is also high, especially in poorly managed environments, and the duration and extent of infestations can lead to widespread and persistent effects. Effective pest management is essential to mitigate these significant risks.

It is however noted that the operations being undertaken at Mikon Poultry Farm is currently taking all measures to ensure effective pest management and therefore, if all the measures are continued to be undertaken, the significance of the impact will be reduced to low following the implementation of mitigation measures.

**TABLE 10: PEST**

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Pest <b>[NEGATIVE]</b>	High	Local	Medium term	Probable	Medium	Low

### Mitigation measures

- Implementing an Integrated Pest Management (IPM) approach involves a combination of strategies to prevent pest infestations. This includes maintaining clean and hygienic farm environments, properly storing feed to avoid contamination, and eliminating standing water and manure accumulation where pests might breed.
- Conducting regular inspections of poultry houses and surrounding areas can help in the early detection of pests. This allows for prompt intervention before infestations become severe.
- Ensuring that manure is removed regularly (at least 4-to-5-day intervals) which prevents fly breeding because it breaks the fly breeding cycle.
- Training farm workers on pest identification, prevention strategies, and the correct use of pest control measures is crucial for effective pest management. Educated staff can act promptly when pests are detected, reducing the impact on the operation.

## 6.1.5 Impact on soil

### Description of the potential impact

During operation, the areas surrounding the poultry houses, including access roads, could become eroded if areas are not managed appropriately.

Areas that were previously cleared of vegetation as well as paved surfaces may increase the possibility of soil erosion on site if stormwater is not managed appropriately. When a surface is smooth and cleared of natural vegetation, stormwater reaches a higher velocity which increases the effect of erosion. Soil erosion decreases the quality of soil and the ability of soil to support natural vegetation.

### Significance of the impact

During operation and as a result of the transformation of land, soil could be impacted during storm events by means of erosion. However, the farm is surrounded by untransformed landscapes which currently acts as a natural buffer in the form of natural vegetation, reducing the velocity of stormwater.

All areas surrounding the poultry houses are also vegetated and therefore the natural vegetation reduces the flow of water during storm events and lessens the effect of erosion.

The significance of the impact of soil erosion is therefore of very low significance following the implementation of mitigation measures.

**TABLE 11: IMPACT ON SOIL**

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Erosion <b>[NEGATIVE]</b>	Medium	Site specific	Short duration	Probable	Low	Very Low

### Mitigation measures

- Permanent measures must be taken on areas prone to erosion. These measures can include gabions or revegetation with indigenous plant species as discussed above.
- All areas that are susceptible to erosion must be protected by introducing drainage systems to prevent runoff water from concentrating. These include:
  - Using indigenous plants to cover areas with bare ground.
  - Using gabions in areas of higher risk (steep slopes)
- Implementing storm water drainage systems to control runoff.

### 6.1.6 Impact on water resources

#### Description of the potential impact.

Although no activities are taking place within any watercourse or wetland area, water resources could be impacted by the following:

- Contamination of groundwater resources caused by the use septic tanks which might not be in optimal working condition;
- Excessive abstraction from the groundwater resource which leads to depletion of ground water resources

#### Significance of the impacts

If septic tanks are found to be working ineffectively, it could have an impact on the quality of groundwater resources. The magnitude of this impact is therefore medium. However, with the successful maintenance and management of all septic tanks on site, this impact can be reduced to be of very low significance.

The operation on site requires quite a significant volume of water on a daily basis. All water is currently being abstracted from a spring located on the property and this has been the main source of water for the operations for the past 40 years. A Geo-Hydrological Assessment was undertaken,



and it was found that the yield of the spring can deliver more than sufficient water for the operation. As the Geo-Hydrological Assessment noted, the spring is able to deliver sufficient water for the operation of the poultry farm and therefore the impact on the water resource would be negligible. It is however recommended that water abstracted, is metered and recorded to ensure that the water resource is not over abstracted.

**TABLE 12: IMPACT ON WATER RESOURCES**

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Water pollution [NEGATIVE]	Medium	Site specific	Short-term	Probable	Low	Very Low
Depletion of the groundwater resource [NEGATIVE]	Very Low	Local	Long-term	Unlikely	Low	Very Low

### Mitigation measures

- Stipulations of the Environmental Management Program (EMPr) should be adhered to during the operational phase of the project.
- The septic tank and grey water systems should be inspected on a regular basis to prevent pollutants from entering the ground water through leakage.
- The applicant must ensure that no untreated waste water is discharged into the surrounding environment.
- Water abstracted must be metered and monitored to prevent over abstraction.

## 6.1.7 Health and Safety

### Description of the potential impact

A licensed poultry house must adhere to specific hygiene and sanitary conditions to ensure the effective management, health, and safety of poultry and their products. The poultry operations must therefore consider relevant regulations, such as the Meat Safety Act (Act 40 of 2000), Poultry Regulations No. 8402 of 2006, and the Animal Diseases Act of 1984. Key areas for sanitation include infrastructure, equipment, surrounding areas, and the health of workers and visitors. Inadequate facilities and hygiene can lead to contamination of poultry products and pose occupational hazards. Improper disposal of contaminated poultry or waste can also adversely affect human health and the environment, highlighting the need for strict adherence to health and safety standards.

There are four types of disease causing organisms which could ultimately affect human health:

- Viruses – Reproduces in live cells and can contaminate healthy birds. Viruses can be present in exhaled air and saliva;
- Bacteria – Survives in any kind of material and feeds on wet bedding and uric acid and produce ammonia. Bacteria attacks cell membranes and causes infections in air sacs and abdomen;
- Protozoa – These are hardy organisms which can be spread by people that carry them into a building with boots. (Footbaths are essential for controlling protozoa);
- Fungi – Reproduces by forming spores which can survive under harsh conditions. It deposits poisonous substances, mycotoxins during growth, which suppresses growth and immune development.

The birds could also be affected by stress which would ultimately affect their health and development. The stress factors include feed (feeders being out of reach), light (overcrowding in brightly lit areas, thus lighting is not evenly distributed within the poultry house), air (under or over ventilation), and water (dehydration). In order to ensure that poultry is healthy, various factors must be considered.

### Significance of the impact

Various diseases are associated with the breeding of poultry in poultry houses and could ultimately affect human health. Mikon Farming has however been operating successfully for the past 40 years and is taking all measures to ensure the safety of poultry as well as human health. The impact associated with the health and safety of poultry is regarded to be of high magnitude, local extent and short-term duration. For this reason, the impact is regarded to be of medium significance prior to the implementation of mitigation measures.

**TABLE 13: HEALTH AND SAFETY**

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Health and Safety <b>[ NEGATIVE ]</b>	High	Local	Medium-term	Probable	Medium	Low

### Mitigation measures

- Avoid overcrowding within poultry facilities;
- Ensure feed and water is easily accessible;
- Ensure lighting within the poultry facilities are spread evenly;
- Workers must conduct activities in accordance with the Occupational Health and Safety Act 85, of 1993, Meat Safety Act 40 of 2000 and Animal Diseases Act 35 of 1984.

## 6.1.8 Socio-economic Impact

### Description of the potential impact

The addition of the poultry houses had a positive socio-economic impact on the surrounding environment as more job opportunities were created by the increase in production. The increase in production, also led to an increase in revenue which resulted to an increase in the GDP of the region.

### Significance of the impacts

Based on the methodology detailed in **Section 5**, the following ratings have been assigned to the positive socio-economic impact associated with the expansion of the poultry facilities.

**TABLE 14: SOCIO-ECONOMIC IMPACT**

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Job opportunities [POSITIVE]	High	Local	Long-term	Definite	Neutral	High (+)

### Mitigation measures

- Throughout the duration of the Mikon Farming operations, it must be ensured that local residents receive preference for job opportunities where local labour might be required.

## 6.2 Environmental Impact Statement

The table below summarises the impacts identified and assessed for the operational phases of the project:

**TABLE 15: ENVIRONMENTAL IMPACT STATEMENT**

IMPACT	SIGNIFICANCE BEFORE MITIGATION MEASURES	SIGNIFICANCE AFTER MITIGATION MEASURES
<b>Operational phase impact</b>		
Generation of dust	Low	Very Low
Waste generation and management	Low	Very Low
Odour	Low	Very Low
Pests	Medium	Low
Impact on soil (soil erosion)	Low	Very Low
Water pollution	Low	Very Low
Depletion of water resource	Low	Very Low
Health and Safety	Medium	Low
Socio-economic Impact	Neutral	High (+)

## 7 CONCLUSION AND WAY FORWARD

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### 7.1 Assumptions and Limitations

In undertaking this investigation and compiling the Section 24G Report, the following has been assumed:

- The information provided by the proponent is accurate and unbiased, and that no information that could change the outcome of the Environmental Authorisation process has been withheld.
- As the area has already been cleared and impacted, no specialist investigation was conducted.
- The scope of this investigation is limited to assessing the environmental impacts associated with the operational phases of the project.
- The conclusion and recommendations proposed are based solely on the information, scope of works as agreed with the proponent.

### 7.2 Conclusion

The essence of all environmental assessment processes is aimed at ensuring informed decision-making and environmental accountability. Furthermore, it assists in achieving environmentally sound and sustainable development. The impact assessment for this project has been undertaken in line with the requirements prescribed in the NEMA regulations.

The assessment of the possible impacts associated with the establishment and operational activities, concluded that the impact on the surrounding environment is of **medium to low significance**. Recommendations have however been made to address the impacts which could affect the biophysical and socio-economic environment. Recommendations for the mitigation of impacts are included within Section 6 and the Draft Environmental Management Plan attached. The significance of the potential environmental (biophysical and social) impacts associated with the proposed project are discussed in detail under **Section 6**.

It is the opinion of the EAP that the EA for this project should be granted, and the proposed mitigation included as the conditions of the authorisation.

### 7.3 Way Forward

The next steps of the Section 24G process will be to distribute the Draft Section 24G Report and make it available to the public (including the registered I&APs) for 30 days to comment, during which the competent authority will also provide comments on the report. After the 30-day comment period, all comments will be addressed by the EAP and incorporated within the Final Section 24G Report to be submitted to the DARDLEA for decision making. All registered I&APs will be notified of the decision and will be given an opportunity to appeal as per the NEMA requirements.

## 8 REFERENCES

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*National Environmental Management Act 107 of 1998 (NEMA 107, 1998)*

*General Notice Regulation 982, 983, 984 and 985 of 2014 (as amended in 2017)*

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