Oudtshoorn Municipality

Proposed development to address food security and protect biodiversity

Environmental and Sustainability Studies

Ostrich Holding Farm

Just outside the city of Oudtshoorn, Oudtshoorn, Western Cape, South Africa

Hi my name is Qarbon Shevara. I am a Second Life Avatar representing the Qarbon Qampus Virtual World. Today we will be doing a real world assessment for a development. My Role is that of a student of the Environmental and Sustainability Studies at the University of the Western Cape and I am looking to build an ostrich holding farm for the pre-slaughtering queueing of ostriches. This will create jobs, decrease the stress for the animals and thus increase the meat quality.
Qarbon Shevara Ostrich Holding Farm
A radical improved way of farming!

What is the Qarbon Campus Ostrich Holding Farm and why is it different?

The Qarbon Shevara Ostrich Holding Farm is a storage facility where ostriches are queued before they are brought to the abattoir. The farm will be made up of 20 paddocks, each 50m x 50m and accommodating 25 individuals up to a week before transported to the abattoir. Recommended is 20 individuals per 100m², therefore it will be four times less than suggested. Since ostriches have a territorial behaviour and are easily stressed, the larger size of the paddocks will reduce stress. By developing a holding farm just outside the city of Oudtshoorn, the time for transport will be decreased. The transportation trucks are going to be of newest standard. Both these factors will decrease the stress. The stress reduction will result in a better meat quality.

The farm will benefit the local community by creating new jobs. The new holding facility may allow breeding farms to produce more ostriches as they have more available space. This will help the local economy.
Qarbon Shevara Ostrich Holding Farm
Where will it be located!

A potential property for the location of the Qarbon Shevara Ostrich Holding Farm has been identified near the city of Oudtshoorn. This area is well known for its abundant ostrich farms, which are visited by many tourists all year around.
Using top quality transportation for ostriches to increase meat quality

Research has shown that ostriches are extremely prone to stress induced by loading processes and transportation, which can be fatal. The Qarbon Shevara Ostrich Holding Farm aims to become a flagship holding facility, by maintaining paddocks and transportation of highest standard.

Loading:
• The loading and offloading should always be done by well trained handlers. To reduce the stress, a hood is put on the bird’s head for the time of loading process. All individuals will be brought into the trailer, which is made up of compartments, each accommodating 8 – 10 birds.

Transportation:
• Transporting ostriches in groups rather than individually reduces stress. There will be enough space for a few handlers to travel with the animals and for the birds to sit down. The latter keeps the animals calmer than when standing, due to their struggle to keep balanced during transport (bipedal and high center of gravity). The flooring is covered by a non-slip material. The handlers are there to ensure the welfare of the animals. In case of birds slipping, handlers are there to prevent trampling and therefore trauma and injuries.

Offloading:
• The ramp of the transporter has battens to prevent the birds from slipping and hurting themselves, especially during offloading.

The above description is only an overview of the most important factors the Qarbon Shevara Ostrich Holding Farm will incorporate. There are many other factors that are of concern, which will be addressed as well.
Oudtshoorn Municipality Profile

Description
Oudtshoorn Municipality is a local municipality located within the Eden District Municipality, in the Western Cape province of South Africa. The town Oudtshoorn is the largest within the little Karoo region. It is well known for its magnificent mountain ranges and the largest ostrich population worldwide. The unique Karoo vegetation, ostrich riding, crocodile cage diving, the Cango Caves, safaris, excellent wine industry and top-class game reserves make it one of the top tourist destinations in South Africa.

General statistics
Area: 1,708 km²
Total Population 2011: 95,933
Population density: 27 persons/km²

Summary of Oudtshoorn Integrated Development Plan IDP
The Oudtshoorn municipality has created a long-term vision for the guidance of municipal and community decision making. In regard to food security, the focus area is an agricultural economic town in which farming and food production thrives. The IDP sets out what the Oudtshoorn Municipality aims to accomplish within the period of 2013 - 2014 between local governments elections. The IDP is the most strategic plan of the municipality and supersedes all other plans that guide development in the municipality. The success of implementing the plan is measured locally, but impacts on the broader Eden District region, the Western Cape Province, and the National Development Plan, with clear delivery targets by 2017. The goal connected to food security is to eradicate extreme poverty and hunger, yet care for the earth by ensuring environmental sustainability.
Oudtshoorn Municipality
Transformation and protection

Total area: 353706.9ha

Landscape transformation
One third of the municipal area has been altered to a state where no natural habitat remains.

34% Natural  66% Transformed

Protected areas
Formal land-based protected areas
10 reserves covering 70059.9ha (19.8%)

Water Management Areas (WMA's)
1 in the municipality (Gouritz)
Oudtshoorn municipality

Vegetation types – original extent

Main vegetation types (>10% of municipal area)
- Eastern Little Karoo 21.54%
- Gamka Thicket 15.35%
- Kango Limestone Renosterveld 11.04%
- North Outeniqua Sandstone Fynbos 10.11%

Other vegetation types (<10% of municipal area)
- Cape Lowland Freshwater Wetlands <0.1%
- Central Inland Shale Band Vegetation 0.5%
- Kango Conglomerate Fynbos 9.1%
- Montagu Shale Renosterveld 1.79%
- Muscadel Riviere 6.27%
- North Kammanassie Sandstone Fynbos 3.85%
- North Rooiberg Sandstone Fynbos 1.24%
- North Swartberg Sandstone Fynbos 0.34%
- South Kammanassie Sandstone Fynbos 1.32%
- South Outeniqua Sandstone Fynbos 1.73%
- South Rooiberg Sandstone Fynbos 2.47%
- South Swartberg Sandstone Fynbos 8.05%
- Southern Afrotetemperate Forest <0.1%
- Swartberg Altimontane Sandstone Fynbos 0.37%
- Swartberg Shale Fynbos 0.53%
- Uniondale Shale Renosterveld 0.45%
- Western Gwarrieveld 1.01%
- Western Little Karoo 1.15%
- Willowmore Gwarrieveld 1.79%
Oudtshoorn Municipality
Nationally listed threatened ecosystems

Percentage of municipal area now covered by threatened ecosystem shown

- **Critically Endangered (EC)**
  - Muscadel Riviere 0.26%

- **Endangered (EN)**
  - no endangered ecosystems

- **Vulnerable (VU)**
  - Eastern Little Karoo 13.35%
  - Kango Limestone Renosterveld 4.98%
  - Montagu Shale Renosterveld 0.55%
Oudtshoorn Municipality
Nationally listed threatened ecosystems

Map showing the original extent of the ecosystems which are now threatened
Assessment location

The map to the right shows two assessment areas, one ‘original’ assessment location which has been suggested at first and a ‘new’ assessment location. Both are located near the city of Oudtshoorn.

The original location was ruled out because it contains two threatened ecosystems and borders a protected area. The impact of an ostrich holding farm in this location would be too damaging on the already threatened ecosystems.

The new location is closer to Oudtshoorn and does not contain any threatened ecosystems. Therefore it is a much better location for the planned development.

Assessment results

The assessment report is a compilation of data of various spatial biodiversity data sets and planning production. These are:

1. National terrestrial or aquatic spatial data sets and protected area boundaries and
2. The most relevant Biodiversity Conservation Plan BCP for the municipality in which the assessment is located. In the case the most relevant SCB is the Eden District Conservation Plan.
Eden District Conservation Plan Assessment

Ecosystems, forests and soils

Threatened Ecosystems

Section 1.1.1 of the report lists two national threatened ecosystems which occur within the original assessment area. Although this information is extracted from the original extents of these ecosystems both the SCP results discussed below and examination of imagery confirm that natural vegetation may well exists within the area of the assessment. If this is the case it is critically endangered CR. The ecosystems in question are:

1. Muscadel Riviere (CR)
2. Eastern Little Karoo (VU)

Soils

The soil classes encountered (section 1.1.4) are probably associated with the two ecosystems. Further investigation into their properties revealed that

1. Association of Classes 13 and16: Undifferentiated shallow soils and land classes. These soils are soils with negligible to weak profile development, usually occurring on deep alluvial deposits.

2. Freely drained, structureless soils, associated with minimal development, usually shallow, on hard or weathering rock, with or without intermittent diverse soils. Lime generally present in part or most of the landscape.

Indigenous Forest Patches

There were no indigenous forest patches (section 1.1.3)
National Fresh Water Priority Areas (NFEPA)

Wetlands

There were no wetlands in the original assessment location (section 1.2.1).

The closest wetland belongs to the Eastern Kalahari Bushveld Group. It is the closest wetland to the borders of the analysis area (40-50m), but ca. 300m from the actual development. This wetland is artificial with condition Z3 and has the lowest FEPA rank of 6. Other nearby wetlands of the same group have similar or same conditions and ranks.

Protected Areas (NPAES 2010)

There were no protected areas within the analysis area (section 1.3). Yet the assessment location borders an informal protected area, called Ortmansgat Private Nature Reserve. It should be avoided to build an ostrich holding farm right next to a protected area.

Note: The analysis area was not located in one of the focus areas for Protected Area.
Eden District Conservation Plan Assessment

CBAs and ESAs

In the Eden District Conservation Plan a lookup layer is provided which divides the area of the plan into units each of which gives biodiversity feature information responsible for the classification of the unit’s CBA map category CBA, ESA or PA. The list combines both terrestrial and aquatic biodiversity feature information.

The analysis area intersected 31 such units (section 2). In the report each unit is listed separately rather than in a table due to the amount and complexity of information it contains.

Critical Biodiversity areas (CBAs)

Most of the analysis area intersected with lookup layer units which were classified as Critical Biodiversity Areas. 17 units were classed as CBAs. The biodiversity features responsible for this classification indicated potential occurrence of both endangered species and national threatened ecosystems. Also, at least 15 of these units have important catchments (NFEPA). These units corresponds with the two critically endangered ecosystems which were listed above (section 1.1.1).

Ecological Support Areas (ESAs)

The analysis area intersected 14 CBA map lookup layer units which were classed as ESA or important for maintaining aquatic processes.

Protected Areas (PAs)

The analysis area did not intersect CBA map lookup layer units which were classed as Protected Area and therefore corresponds with section 1.3.
Moving the Development from the original assessment location to a new assessment location

The LUDS report shows that building a ostrich holding farm on the original assessment location would not be very sustainable and environmental friendly. Intense ostrich diversities have a great negative impact on the vegetation. Therefore it is not advisable to build the development in a location containing threatened ecosystems, CBAs, and bordering a protected area.

Based on the information generated from the LUDS report, I as an environmentally friendly farmer can not support the ostrich holding farm being build on the original assessment location. Therefore I searched for a new location where a development does not heavily impact the environment, especially already threatened ecosystems and protected areas.

A new assessment location has been proposed. The generated LUDS report showed that the new location does not contain any protected areas, indigenous forest patches, not wetlands and rivers. The distances to such areas/habitats are much greater than the original assessment location. The new analysis area contains one critically threatened ecosystem, but it occupies only very little land in the south and won’t be impacted by the development. The new location is closer to the city of Oudtshoorn where the abattoir is located. This results in less stress for the animals due transportation time, and therefore a meat of greater quality. As an eco-friendly farmer, my recommendation is to build the ostrich holding farm in this new analysis area. The main soil class is a freely drained, structureless soil.
Qarbon @Home

Prepared by your Second Life Ambassador

Biodiversity & Conservation Biology
Environmental & Sustainability Studies