Hi my name is CarbonSimone. 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 farmer located in the Cascada District of the Eastern Cape, and I am looking to build a new Dexter Cattle research farm to assess new methods of foods production given the growing food prices and increased popularity for organic foods.
Due to the increasing food prices and the growing demand for organic foods, I will be establishing a new Dexter Cattle research farm.

Dexter Cattle are a small breed, but with regards to milk, meat quality, and disposition, the breed is a productive animal. They produce 10% more milk than Friesians and it is also organic, hormone-free milk. The meat is of high quality, lean and tender.

The benefits of Dexter Cattle are astounding, as they do not require huge spaces of land, they thrive on rough/coarse ground and have a smaller impact on the land as oppose to the bigger breeds. These cattle have longer life spans and they are easy to breed, as they are not easily susceptible to cattle disease. Another benefit of Dexter Cattle is that they are able to survive through harsh weather conditions. The Karoo usually consists of dry summer conditions and low winter rainfall, thus a cattle being able to survive tough conditions is a key element to the success of this farm.
Qarbon Campus Research Farm
Where will it be located!

A potential property for the location of the Qarbon Campus Research Farm has been identified at the coordinates $32^\circ 53' 56''$ S $24^\circ 34' 24''$ E. This area in the Cacadu District of Ikwezi is well suited for the research farm as it located in an open area with lots of space required for the farm, and it is isolated from predatory disturbances to the cattle.
The establishment of the Dexter Cattle Farm will provide the local community with an alternative and cost effective source of food. The Dexter Cattle itself is a sustainable farming approach, as the cattle does not require large spaces of land, they do not have a big impact on the land and they are easy to maintain.

The farm covers an area of 120 hectares, which will be divided into 8 sections. This gives the land a chance to recover, while the cattle goes through the rotational cycle. Dexter Cattle are known for their calm nature, however fencing is still required. The fencing used for the farm is a 7 strain plain wire. This fencing protects the Dexter Cattle, but it also does not harm any other animals in the surrounding area.

Due to the harsh weather conditions of the Karoo, the Dexter Cattle requires shelter from the heat during the day, and from the wind in the evening. The shelter prepared for my farm is a small hayshed, and a few trees will be planted in the surroundings.
The small haystack shelter for the Dexter Cattle

Breeding used during the breeding season, otherwise also used as a shelter and the fencing for protection.
Ikwezi Municipality

Profile

Description
Ikwezi Municipality is one of nine municipalities located within the Cacadu District, in the Eastern Cape province of South Africa. It includes four settlements, namely Jansenville, Klipplaat, Waterford and Wolvefontein. It is an area characterized by low population density and high levels of poverty. This area is renowned for its simplicity, wide open spaces and hunting opportunities for local and foreign hunters.

General statistics
Area: 445313.8 ha
Total Population 2011: 10 537
Population density: 43/ha

Summary of Ikwezi Integrated Development Plan IDP

The Ikwezi integrated Development Plan main focus in terms of food security lies under the Provisional Growth and Development Plan (PGDP):

The PGDP three foundation objectives that create the conditions and support for development and growth:

*Systematic poverty eradication through a holistic, integrated and multi-dimensional approach to pro-poor programming.

*Agrarian transformation and strengthening household food security.

*Consolidation, development and diversification of the manufacturing base and tourism potential.
Overstrand Municipality
Transformation and protection

Total area: 445313.8 ha

Landscape transformation
One third of the municipal area has been altered to a state where not natural habitat remains.

Protected areas
Formal land-based protected areas
1 reserves covering 160615.6ha (3.6%)
Ikwezi municipality

Vegetation types – original extent

Main vegetation types (>10% of municipal area)

- Sundays Thicket 40.52%
- Sundays Noorsveld 17.54%
- Lower Karoo Gwarrieveld 16.44%
- Eastern Lower Karoo 14.88%

Other vegetation types (<10% of municipal area)

- Great Fish Thicket 2.52%
- Groot Thicket 2.62%
- Grootrivier Quartzite Fynbos 0.63%
- Southern Karoo Rivier 2.53%
- Suurberg Quartzite Fynbos 1.29%
- Suurberg Shale Fynbos 1.02%
Ikwezi Municipality
Nationally listed threatened ecosystems

• **THERE ARE NO THREATENED ECOSYSTEMS WITHIN THE IKWEZI MUNICIPAL AREA**

However, extant vegetation include:
• Sundays Noorsveld - occurs on flat lowlands where the vegetation is dense, tall succulent thicket consisting of a mosaic of noors and low Karoo shrubland.

• Sundays Thicket - occurs on undulating plains and low mountains covered with tall, dense thicket, where trees, shrubs and succulents are common.

• Lower Karoo Garriesveld- occurs on hills and gentle slopes, supporting shrubland with sparse canopy of *Euclea undulata*

• Eastern Lower Karoo – occurs on extremely irregular to slightly undulating plains covered with dwarf spiny shrubland, dominated by Karoo dwarf shrubs and rare low trees
Ikwezi Municipality
Extant Vegetation

Lower Karoo Garriesveld

Sundays Noorsveld

Eastern Lower Karoo

Sundays Thicket
Ikwezi District Conservation Plan Assessment
Assessment location and Conservation Plan

Assessment location
The map to the left shows the assessment area which was run for the identified potential location of the Qarbon Campus Research Farm in Ikwezi

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 Cacadu District Conservation Plan.
Ikwezi District Conservation Plan Assessment
Ecosystems, forests and soils

**Threatened Ecosystems**

Section 1.1.1 of the report lists *no national threatened ecosystems* which occur with the 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. The ecosystems include:

1. Albany Thicket

**Although not critically endangered**

Note the results for the National vegetation types section 1.1.2 confirms that the only vegetation types (ecosystems) which may occur is this ecosystem

**Soils**

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

1. Freely drained and structureless soil

**Indigenous Forest Patches**

There were no indigenous forest patches (section 1.1.3)
Overberg District Conservation Plan Assessment
Rivers, wetlands and protected areas

**National Fresh Water Priority Areas (NFEPA)**

**Wetlands**

One wetland occurs in the analysis area (section 2.1.1), which is artificial with condition Z3 where the percentage natural land cover <25. This wetland NFEPA rank of 6.

**Rivers Units Sub-quaternary catchments**

Note: The analysis area showed no intersecting river units within the designated plot which has been allocated.

**Protected Areas (NBA 20011)**

Note: The analysis area had no intersection with any protected areas within the municipality.
Overberg District Conservation Plan Assessment
CBAs and ESAs

In the Cacadu 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 analysis area intersected 3 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.

Critically Endangered ecosystems (CBAs)

Most of the analysis area intersected with lookup layer units which were classified as Critical Biodiversity Areas, all are natural. These units corresponds with no critically endangered ecosystems which were listed above.

Ecological Support Areas (ESAs)

The analysis area intersected three CBA map lookup layer units which were classed as ESA or important for maintaining aquatic processes and may be transformed from natural e.g. farmland.

Protected Areas (PAs)

Note: The analysis area had no intersection with any protected areas within the municipality
98% of the land is natural, while 2% of the land has been transformed. This is a good indication as the proposed development will not have a negative impact on the environment.

There are no threatened ecosystems in the area and thus, this also is a good indication of the development not impacting the environment,