Hi my name is Carbopoka. 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 of the Environmental and Sustainability Studies at the University of the Western Cape and I am looking to build a Jersey cattle milk production facility.
Qarbon Campus Industrial Milk Farm
A radical new way of farming!

The identified farm portion will be converted into a Jersey cattle milk production facility with milking sheds. The cows will be held in a one Hectare sheds and fed genetically modified soya imported from Argentina. The milk will be sold to a large Italian dairy company. The farm will have positive impact in the fight to sustain food and water security.

With the dairy production yields decreasing over the years due to reasons that include availability of adequate feed to produce milk that will meet daily dairy demands.

This project will produce high yields of milk in relatively shorter time than normally.

With unemployment just over 39% in the Ndlambe municipality this project will help reduce this percentage and thus help put food on the table for more families.

It will help develop the local economy of the Ndlambe Municipality
Qarbon Campus Experimental Farm
Where will it be located!

A potential property for the location of the Qarbon Campus Experimental Farm has been identified (highlighted in red) just South of the Glen Shaw homestead located on the Boknes rive. This area is well known for farming.
Industrial Milk Farming is practiced very successfully in Indonesia. This country used to rely mostly on imports for dairy products and the development of Industrial milk farming has allowed the country to produce their own milk to sell to both locally and abroad and thus improve their economy and improve food security status in the country. Therefore this development can also yield the same results for the Ndlambe Municipality.
Ndlambe Municipality
Profile

Description
Ndlambe Municipality is a local municipality located within the Cacadu District Municipality, in the Eastern Cape province of South Africa. This area’s economy mostly generated by the tourism and agricultural sectors, as it is dominated by rural areas. Some of its tourist attractions are its pristine coastal area, well-preserved river mouths and inter-tidal areas, diverse vegetation and it is the host what is believed to be the oldest inn and third oldest bar in South Africa. It is also famous for it chicory farming industry and is the hub of one of the larges pineapple growing areas.

General statistics
Area: 1 840.64 km²
Total Population 2011: 61 176
Population density: 33/km²

Summary of Cacadu Integrated Development Plan IDP
The Cacadu district municipality believes that “Biodiversity is the mainstay of our agricultural economy, providing ecosystem services such as grazing for livestock and insect pollination for food and fruit crops. Every aspect of our livelihoods depends on these services.” Therefore it is important to ensure that this development does not harm the ecosystem which can have negative effects on the biodiversity and thus further increase the food security problems.
Ndlambe Municipality

Transformation and protection

Total area: 184 064ha

Landscape transformation

Only less than a fifth of the municipal area has been altered to a state where not natural habitat remains.

Protected areas

Formal land-based protected areas:
10 reserves covering 7046.4ha (3.8%)

Marine Protected Areas (MPA's):
There are no marine protected areas adjacent to the municipality

[Map of Ndlambe Municipality with marked protected areas]
Ndlambe municipality
Vegetation types – original extent

Main vegetation types (>10% of municipal area)
- Albany Coastal Belt 47.39%
- Kowie Thicket 39.36%

Other vegetation types (<10% of municipal area)
- Albany Dune Strandveld 3.28%
- Bhisho Thornveld 2.02%
- Cape Coastal Lagoons 0.14%
- Cape Estuarine Salt Marshes 0.06%
- Cape Lowland Freshwater Wetlands 0.23%
- Cape Seashore Vegetation 1.03%
- Great Fish Thicket 3.49%
- Southern Coastal Forest 0.49%
- South Misbelt Forest 0.21%
- Suurberg Quartzite Fynbos 1.69%
- Suurberg Shale Fynbos 0.6%
Ndlambe Municipality
Nationally listed threatened ecosystems

Percentage of municipal area now covered by threatened ecosystem shown

- **Critically Endangered (EC)**
  - There were no critically endangered ecosystems

- **Endangered (EN)**
  - There were no critically endangered ecosystems

- **Vulnerable (VU)**
  - There were no vulnerable ecosystems
The Addo 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 Carbonpoka Industrial Milk Farm in Glen Shaw.

**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 Overberg District Conservation Plan.
The Adddo Conservation Plan Assessment
Ecosystems, forests and soils

**Threatened Ecosystems**

Section 1.1.1 of the report does not lists any national threatened ecosystems which occur within the assessment area. However, it must be noted that the area does intersect a critical biodiversity area.

Note the results for the National vegetation types section 1.1.2 show that the vegetation types that occur within the assessment area are the Albany Coastal Belt (highly abundant) and the Southern Coastal Forest which is poorly represented in the municipality, but forms part of the critical biodiversity area.

**Soils**

The soil class encountered (section 1.1.4) is probably associated with one ecosystem. Further investigation into their properties revealed that

1. Freely drained, unstructured soil is not suitable for vegetation that prefers moisture, as water runs through it freely and faster and is likely to be single grained. Therefore the area is suitable for vegetation that can withstand dry areas.

**Indigenous Forest Patches**

The results in section 1.1.3 show that there is one forest patch within the assessment area, the Zonal and Intrazonal Forests.
The Addo Conservation Plan Assessment
Rivers, wetlands and protected areas

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

**Wetlands**
Two wetlands occur in the analysis area (section 2.1.1), both are artificial with condition Z3 where the percentage natural land cover <25%. Both wetlands have the lowest FEPA rank of 6. **Note:** this percentage excludes unmapped wetlands

**Rivers Units Sub-quaternary catchments**
The analysis area intersected a single sub-quaternary catchment (section 1.2.2) which has no FEPA status.

**Protected Areas (NBA 20011)**
The analysis area intersected a formal protected area Addo Elephant National Park (Section 1.3) It should be redrawn to avoid this intersection.

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

CBAs and ESAs

In The Addo 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 21 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 8 on natural or 10 degraded land 18 units in total.

Ecological Support Areas (ESAs)

The analysis area intersected two artificial wetlands which can play a role in biodiversity conservation although they are not classed as ESAs.

Protected Areas (PAs)

The analysis area did not intersect any other protected area, except for the one mentioned above.
Carboncampus

In staying in line with the Addo conservation plan to conserve biodiversity the development site:

- will have to be shifted towards the east a little just enough to avoid intersection with the Addo Elephant National Park and the critical diversity area

If the above can be achieved successfully there two very complex issue that can stand in the way of this development, the fact that cattle will be fed genetically modified soya from Argentina and that they will be constantly kept in one hectare sheds.

The issue of using genetically modified material is a very controversial subject in the food sector all over the world.

- It is widely believed that it leads to major health complications and that it can also contaminate other neighbouring crops
- And is thus against the production of good quality healthy food
- However the producers of genetically modified foods argue that this is not true and that more importantly they produce produces large quantities of food in less amount of time, that lasts longer and costs less, which is more in line with the food demands of today’s world

Therefore it is vital for the Ndlambe Municipality to take into consideration these important factors and take the best possible decision to ensure that every individual’s food consumption needs are met.