

Agricultural Assessment

Amaoti Subsidised Housing Development

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PREPARED FOR:



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1 Introduction

1.1 Project Background

The eThekweni Metropolitan Municipality has, through its IDP process, and extensive consultation with respective beneficiary communities residing within the eThekweni Metropolitan Municipality, identified the need to provide subsidised housing in its area of jurisdiction. This process was initiated as a means to address the municipality's housing need and in doing so improve the living conditions and quality of life of its communities. The project initially commenced during 2016 upon which comments were received from the Department indicating that they have no objection in terms of the project (see **Annexure A**). This report is a review of the original report confirming that the situation on the ground has not changed since the comments received from the Department of Agriculture.

1.2 Site Description

The proposed development entails the formalisation and development of the Greater Amaoti area. The project area is approximately 1235.59Ha in extent is located on a portion of Wards 52, 53, 55, 56, 57, 59 and 102 of the eThekweni Metropolitan Municipality (see **Figure 1.1 and Figure 1.2**). The proposed development is made up of the following settlements:

- Amaoti
- Amaoti-E
- Amaoti Cuba
- Amawothi
- Amawoti-E
- Amawoti-F
- Goqokazi
- Langalibalele
- Lower Angola
- Lusaka
- Lusaka 1
- Lusaka 2

- Mocambique
- Namibia
- Nigeria
- Shastri Park
- Tanzania
- Upper Amaotana
- Westham
- Zambia
- Zimbabwe

The current yield of the development is unknown but it is estimated that the project will deliver approximately 20 000 Greenfield and Brownfield residential units together with supporting infrastructure and social facilities which include educational facilities, clinics, libraries, and sports facilities.

FIGURE 1.1: PROJECT AREA

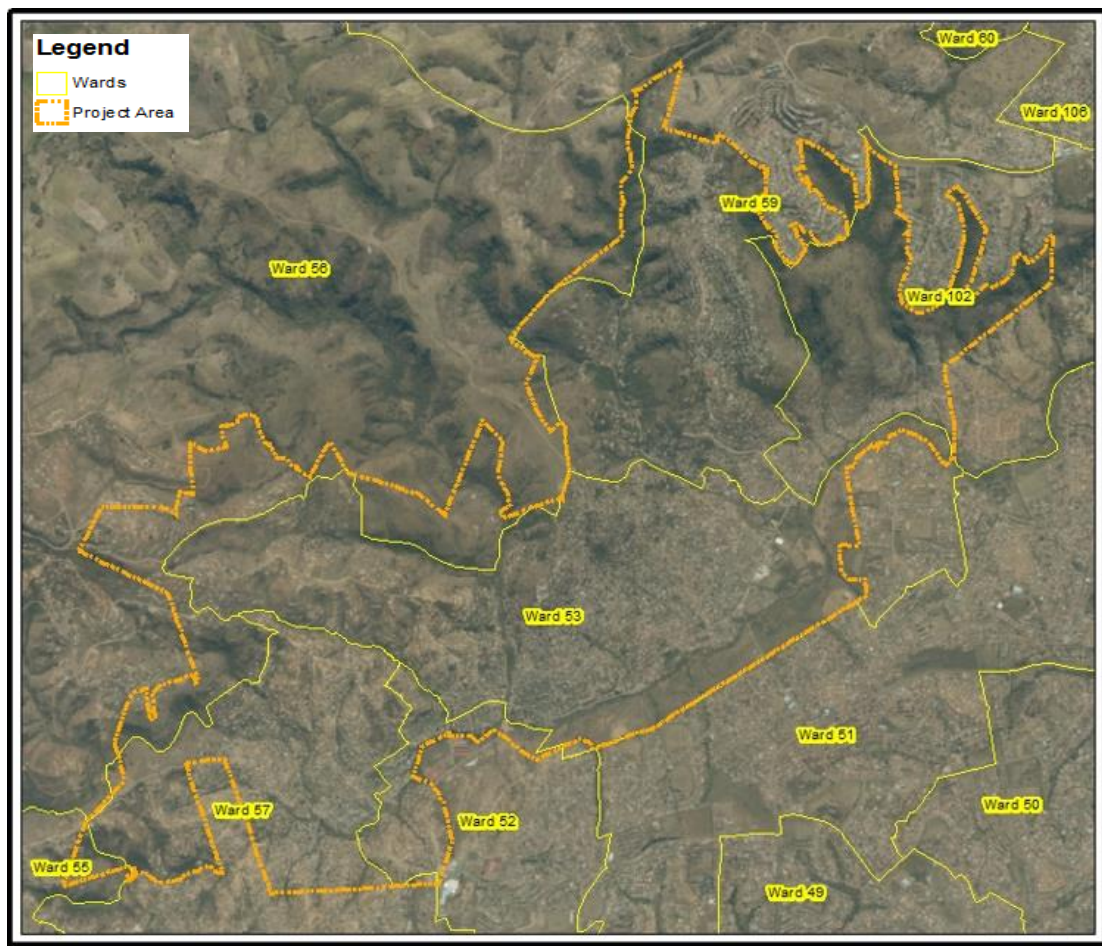


FIGURE 1.2: LOCALITY MAP



PHOTO 1: OVERVIEW OF PROJECT AREA



1.3 Methodology

1.3.1 Assessment Techniques and Tools

The study involved an initial desktop assessment of the study area, which was then followed by a field investigation.

1.3.2 Desktop Assessment

The desktop study conducted involved the examination of aerial photography, GIS databases as well as literature reviews of the study site in order to determine the agricultural potential of the area. The study made use of the following data sources:

- Google Earth™ satellite imagery was used at the desktop level;
- Relief dataset from the Surveyor General was used to calculate slope;
- KZN Environmental Potential Atlas;
- StatsSa;
- Vegetation type dataset from (Mucina & Rutherford, 2006) was used in determining the vegetation type of the study area.
- Land cover assessment utilising information from Ezemvelo KZN Wildlife

1.3.3 Agricultural Potential

Factors regarding the assessment of the agricultural potential of the site were undertaken including an assessment of the:

- Topography
- Climate
- Soil depth
- Soil Potential
- Geology

Information was also gathered from the Agricultural Land Potential Categories Report, which identified the different agricultural categories that occurred within the project area.

1.4 Report Structure

The report is structured as follows:

- Section 2 provides a description of the **socio-economic characteristics** of the project area.
- Section 3 provides a description of the **biophysical characteristics** of the project area.
- Section 4 provides a description of the **agricultural potential** of the project area.
- Section 5 provides **Mitigation Measures**.
- Section 6 is the **Conclusion**

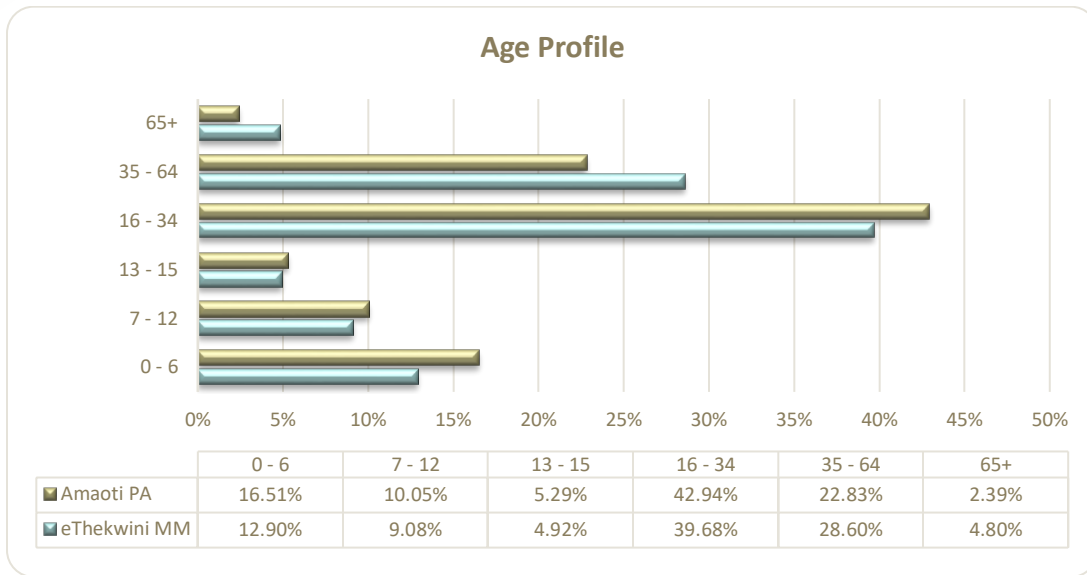
2 Socio-Economic

The figures illustrated below were prepared from the Census 2001 and 2011 data and present a socio-economic overview of the study area. The Amaoti Housing project area falls within the jurisdiction of the eThekweni Metropolitan Municipality; the figures of the study area are therefore presented together with the overall figures of the municipality to yield a comparative socio-economic overview of the study area. The total population of the study area is approximately 60 005 persons and the population of the municipality is estimated at 3 442 266 persons.

2.1 Age Profile

The age profile of the project area and of the eThekweni Metropolitan Municipality (MM) is depicted in Figure 2.1 below. It is evident from the graph that the majority of the population (31.85%) of the project area are younger than the age of 15 years. A total of 42.94% are between the ages of 16 and 34 years. 22.83% of the population fall in the age category of 35 – 64 years, while only 2.39% of the total population of the project area are older than the age of 65 years. The age distribution figures suggest that the population of the study area, consists mostly of young individuals who will become adults in the near future. The figures also indicate that 26.91% of the population within the eThekweni Metropolitan Municipality is younger than 15 years.

Figure 2.1: Age Profile

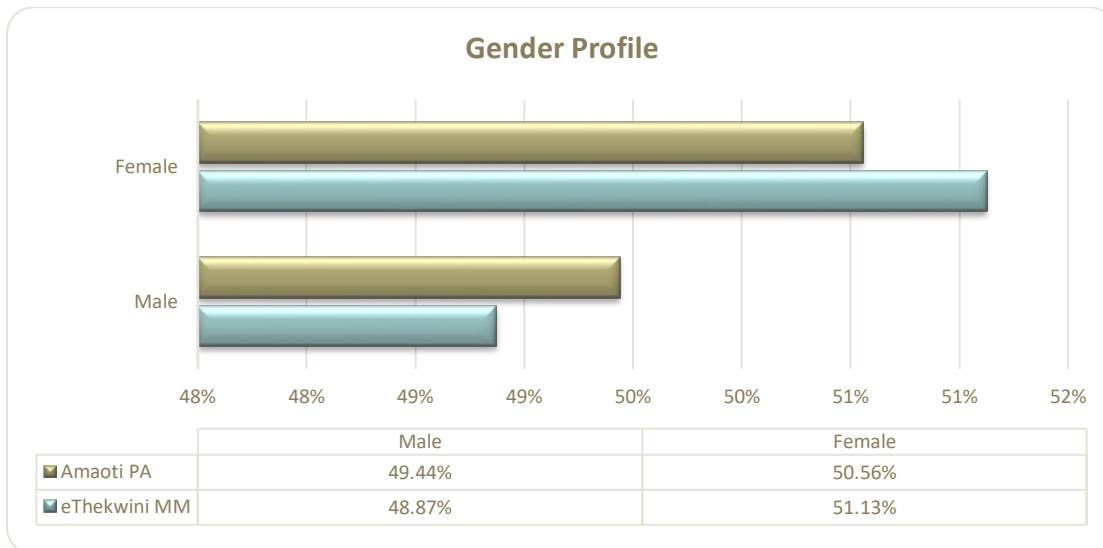


Source: Statistics SA, Census 2011

2.2 Gender Profile

According to the 2011 census information in Figure 2.2 below, as much as 50.56% of the total population of the study area is female and 49.44% are male.

Figure 2.2: Gender Profile

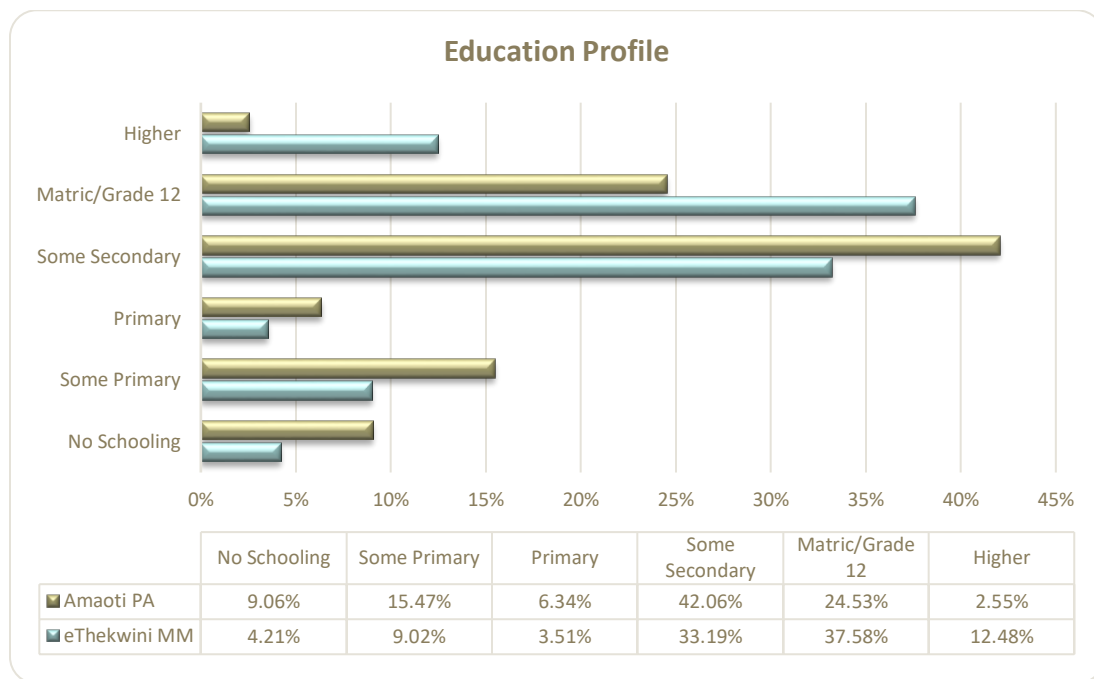


Source: Statistics SA, Census 2011.

2.3 Education Profile

The 2011 education profile of the study area and the eThekweni Metropolitan Municipality is illustrated in Figure 2.3 below. These figures illustrate the education levels of persons over the age of 20 years and therefore falling into the economically active categories of the population. The figures suggest relatively high education and literacy levels within the study area with as little as 9.06% of the population having no form of schooling. Approximately 15.47% of the population within the study area had undergone some form of primary school education, 6.34% completed primary school, 42.06% completed some form of secondary school and only 24.53% completed matric.

Figure 2.3: Levels of Education



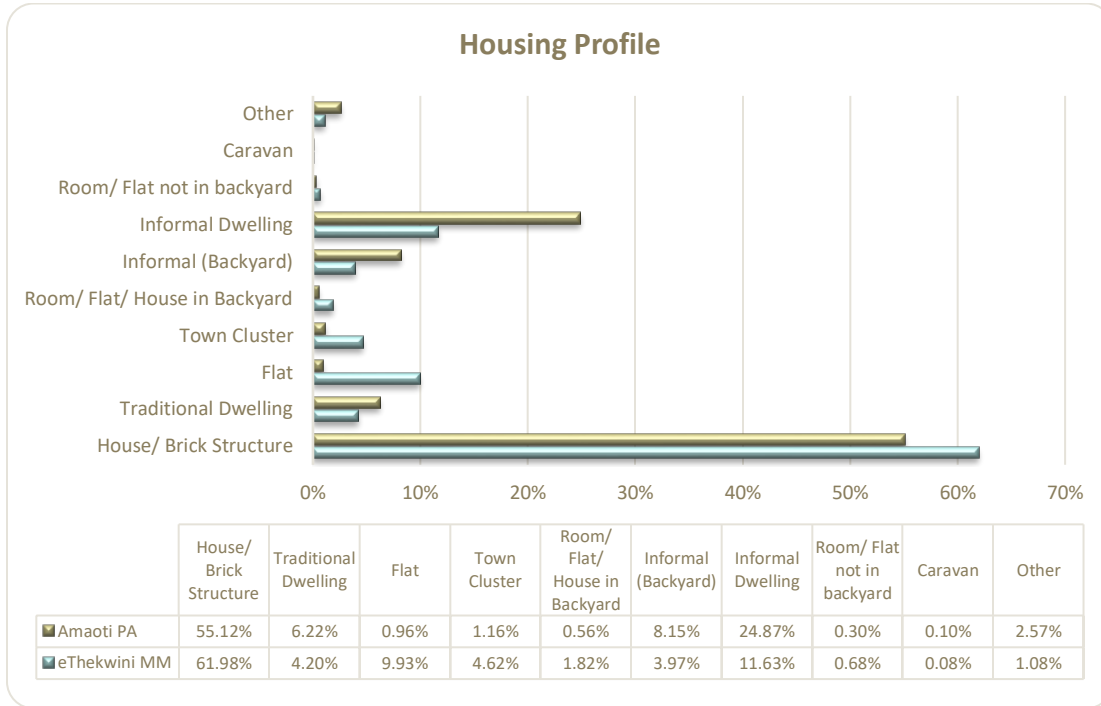
Source: Statistics SA, Census 2011.

2.4 Housing Profile

As can be seen from Figure 2.4, the most predominant housing type in the project area is the “House/Brick Structure” with 55.12% of houses falling into this category. The second predominant housing type is the “Informal dwellings” with 33.02% falling into this category. The figures indicate that within the eThekweni Metropolitan Municipality, approximately 61.98% of

houses fall in the “House/Brick Structure” housing category and 15.60% fall within the “Informal dwellings” category.

Figure 2.4: Housing Profile

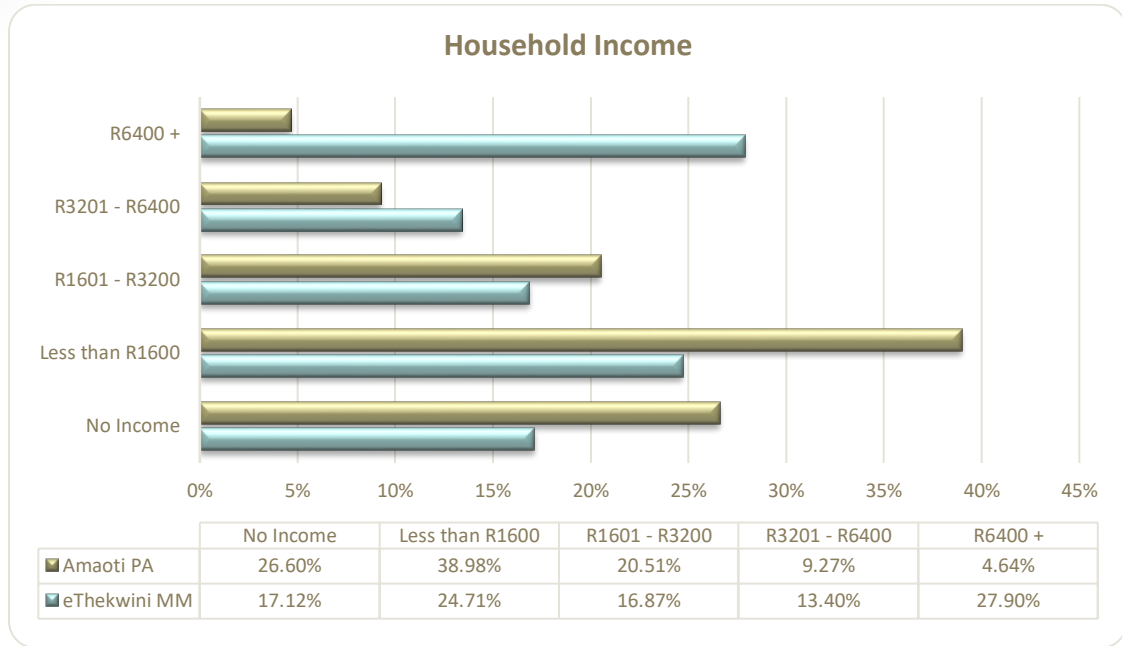


Source: Statistics SA, Census 2011.

2.5 Household Income and Affordability Profile

Figure 2.5 below illustrates a relatively low household income profile of the Amaoti Housing project area. As much as 26.60% of the total number of households within the study area indicated not to have an income. The figures also show that 38.98% of the total number of households indicated a collective monthly household income of less than R1600, with 20.51% falling within the income range of R1600 – R3200 and 9.27% falling between R3200 and R6400. Approximately 4.64% of households earn more than R6400, which is much lower as compared to the eThekweni Metropolitan Municipality percentage of 27.90.

Figure 2.5: Monthly household income

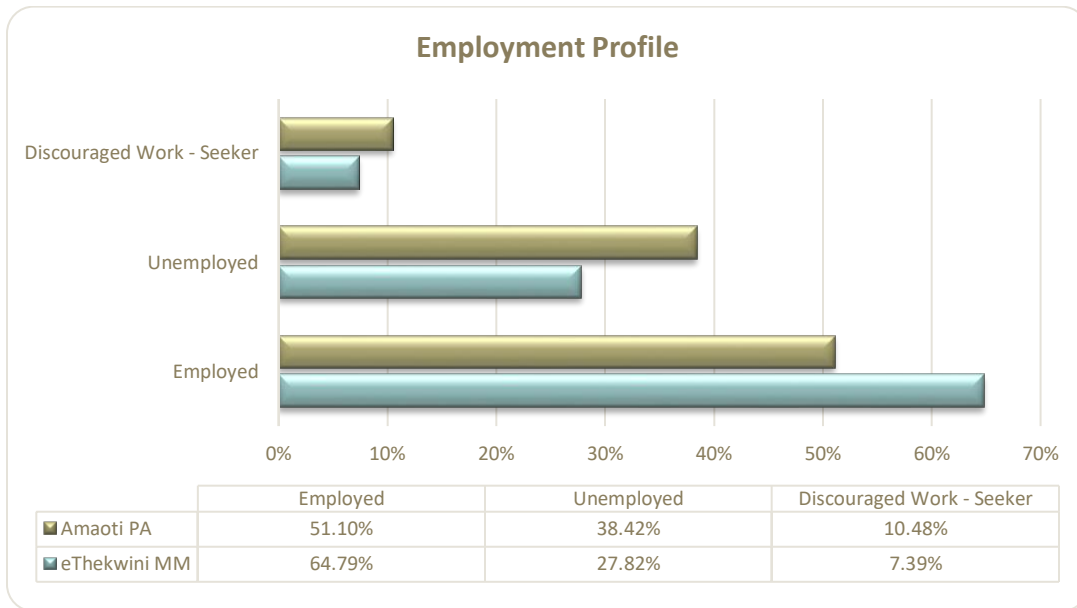


Source: Statistics SA, Census 2011.

2.6 Employment Profile

Figure 2.6 below illustrates the employment profile of the study area and the overall municipal profile. These figures illustrate the employment profiles of persons over the age of 16 years and therefore falling into the economically active categories of the population. As much as 51.10% of the active population indicated to be employed whilst 38.42% of the economically active population within the study area indicated that they were unemployed. The overall employment profile of the eThekweni Metropolitan Municipality indicated that 64.79% of the population was employed and as much as 27.82% was unemployed.

Figure 2.6: Percentage of Economically Active population unemployed



Source: Statistics SA, Census 2011

3 Bio-Physical

3.1 Current Land Use

The study area is characterized by formal and informal settlements, with a network of various tarred and gravel roads providing access to the settlements. Housing density is high to very high with few natural/untransformed habitats remaining in the area. Several agricultural fields (subsistence farming) are present along the banks of the Ohlanga River towards the south and in the northern section of the project area. Small fragmented pockets of natural and/or semi natural habitat are present on several areas, and are generally restricted to valleys with steep slopes.

PHOTO 2: HOUSES WITHIN PROJECT AREA



PHOTO 3: SUBSISTENCE AGRICULTURE



3.2 Vegetation

As indicated in Table 3.1 and Map 312, majority (71.28%) of the project area is categorised as KwaZulu-Natal Coastal Belt Grassland and is found throughout the project area. The second most dominant vegetation type is the KwaZulu-Natal Coastal Belt Thornveld which covers approximately 20.50% of the project area and is located on the western portions of the project area.

Table 3:1: Vegetation

Vegetation	Area (Ha)	Percentage of Total Area
Alluvial Wetlands : Subtropical Alluvial Vegetation	1,02	0,08%
Eastern Scarp Forests : Southern Coastal Scarp Forest	8,35	0,68%
Freshwater Wetlands : Subtropical Freshwater Wetlands	0,45	0,04%
KwaZulu-Natal Coastal Belt Grassland	880,68	71,28%
KwaZulu-Natal Coastal Belt Thornveld	253,28	20,50%
KwaZulu-Natal Coastal Forests : Southern Mesic Coastal Lowlands Forest	91,81	7,43%
Total Area	1235,59	100%

Source: KZN Environmental Potential Atlas

The vegetation unit which occurs within the Amaoti Housing project area is discussed in further detail below.

3.2.1 KwaZulu-Natal Coastal Belt (Mucina and Ruthford, 2006)

Distribution in KwaZulu-Natal Province: Long and in places broad coastal strip along the KwaZulu-Natal coast, from near Mtunzini in the north, via Durban to Margate and just short of Port Edward in the south. Altitude ranges from about 20 to 450m.

Vegetation and Landscape Features: Highly dissected undulating coastal plains which presumably used to be covered with various types of subtropical coastal forest (the remnants of one of which are described as Northern Coastal Forest). Some primary grassland dominated by Themeda triandra still occurs in hilly, high-rainfall areas where pressure from natural fire and grazing regimes prevailed. At present the KwaZulu-Natal Coastal Belt is affected by an intricate mosaic of very extensive sugarcane fields, timber plantations and coastal holiday resorts, with interspersed secondary Aristida grasslands, thickets and patches of coastal thornveld.

Geology and Soils: Ordovician Natal Group sandstone, Dwyka tillite, Ecca shale and Mapumulo gneiss (Mokolian) dominate the landscapes of the KwaZulu-Natal Coastal Belt. Weathering of old dunes has produced the red sand, called the Berea Red Sand, in places. The soils supported by the above-mentioned rocks are shallow over hard sandstones and deeper over younger, softer rocks.

Climate: Summer rainfall, but with some rainfall also in winter. High air humidity with no incidence of frost. Mean maximum and minimum monthly temperatures for Durban (airport) are 32.6°C and 5.8°C and for Port Shepstone 30.6°C and 8.8°C (both for January and July, respectively).

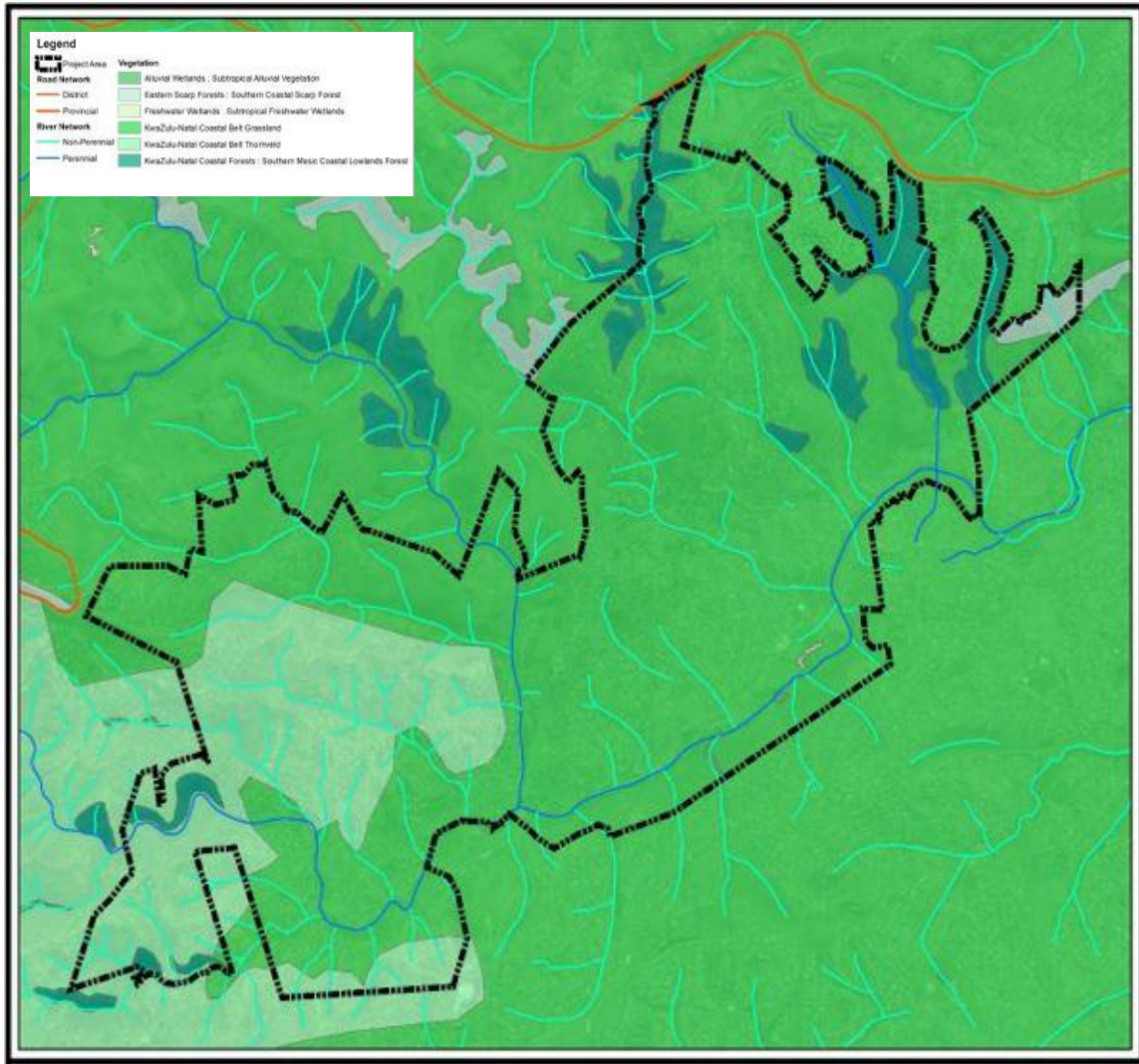
3.2.2 KwaZulu-Natal Coastal Belt Thornveld (Mucina and Ruthford, 2006)

Distribution: KwaZulu-Natal Province: From near Mandini in the north to Oribi Gorge in the south. Altitude 30 to 500m.

Vegetation and Landscape Features: Steep valley sides and hilly landscape mainly associated with drier larger river valleys in the rain shadow of the rain bearing frontal weather systems from the east coast. Bushed grassland, bushland and bushland thicket and open woodland.

Climate: Summer rainfall with some rain in winter. MAP about 740 to 940 mm. Summers are hot and humid and winters mild. Frost does not occur.

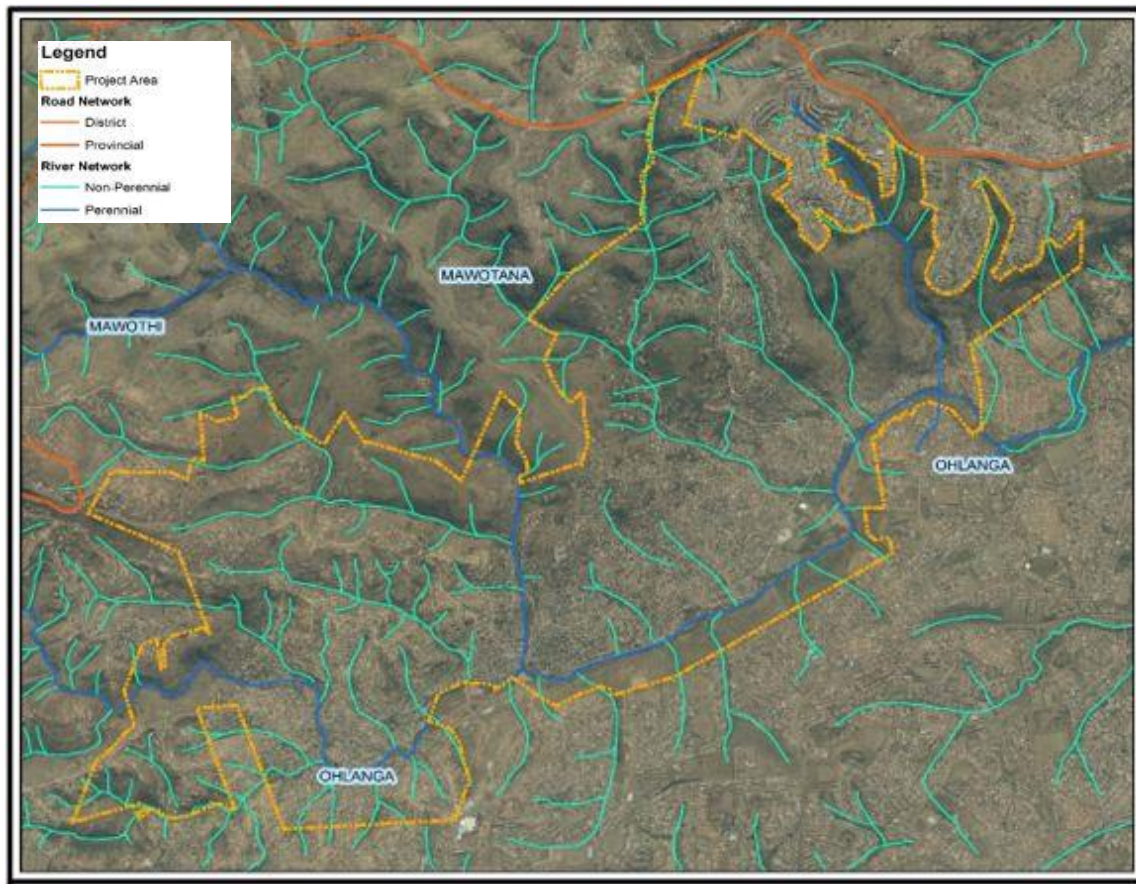
Map 3.1: Vegetation



3.3 Rivers and Streams

As indicated in Map 3.2, there are a number of perennial and non-perennial streams within the project area which may be subject to periodic flooding depending on the rainfall and subsequent runoff at any point in time, either within or upstream of the specific catchment area. Therefore, in terms of the National Water Act, as well as other developmental legislation which are applicable, the project area is subject to a 1:100-year flood line restriction and no development should occur within this area.

Map 3.2: River Network



3.4 Land Cover

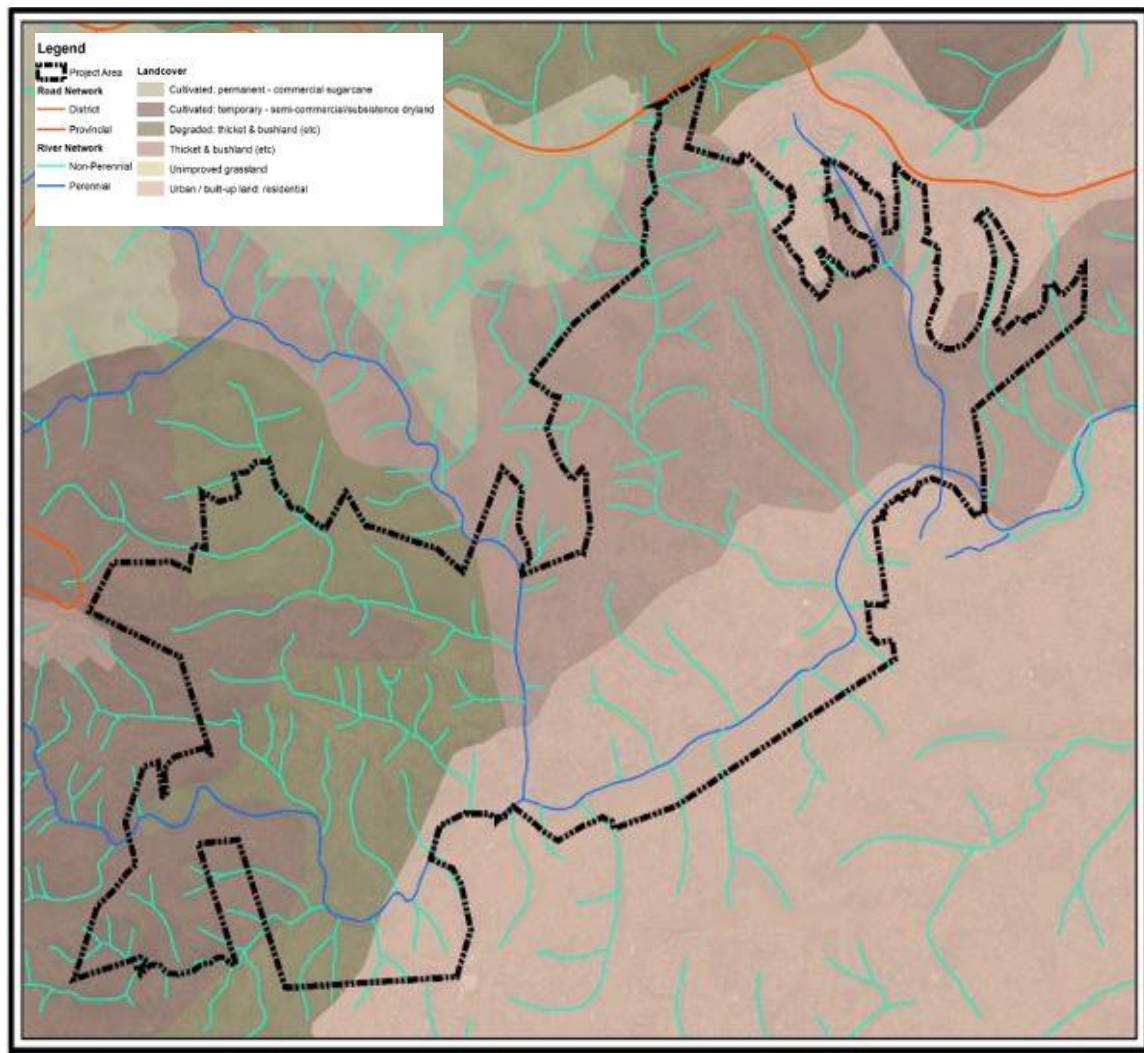
The overall land cover within the study area is summarized in Table 3.2 below and graphically depicted on the Map 3.3 below. The dominant land cover within the project area “Thicket and Bushland” which covers 37.42% of the project area and can be found in the northern and eastern portions of the project area. The second most dominant land cover type is the “Urban / built-up land: residential” which covers 26.58% of the project area located in the southern portion of the project area. Approximately 13.72% of the project area is classified as “Cultivated: temporary - semi-commercial/subsistence dryland”. This type of land cover is found the western section of the project area.

Table 3:2: Land Cover

Land Cover	Area (Ha)	Percentage of Total Area
Cultivated: temporary - semi-commercial/subsistence dryland	169,46	13,72%
Degraded: thicket & bushland (etc)	275,36	22,29%
Thicket & bushland (etc)	462,30	37,42%
Urban / built-up land: residential	328,45	26,58%
Total Area	1235,57	100%

Source: LANDSAT Landcover

MAP 3.3: LAND COVER



3.5 D'MOSS

eThekweni Metropolitan is richly endowed with natural capital owing to its location at the centre of the Maputaland-Pondoland-Albany Region which is described as a “Biodiversity Hotspot.” Biodiversity Hotspots are areas with high levels of endemism and threats. Due to increasing threats to the natural environment, arising concerns about biodiversity, climate change and issues of resilience, the Municipality adopted the Durban Metropolitan Open Space System (“D'MOSS”) which has been designed to protect the city’s core ecological infrastructure. Varied topography, climate conditions and the eThekweni Municipal Area’s (“EMA”) unique biogeographical position have resulted in a wide range of terrestrial and aquatic ecosystem within the D'MOSS that provide a sustained supply of free ecosystem services to the citizens of the municipal area.

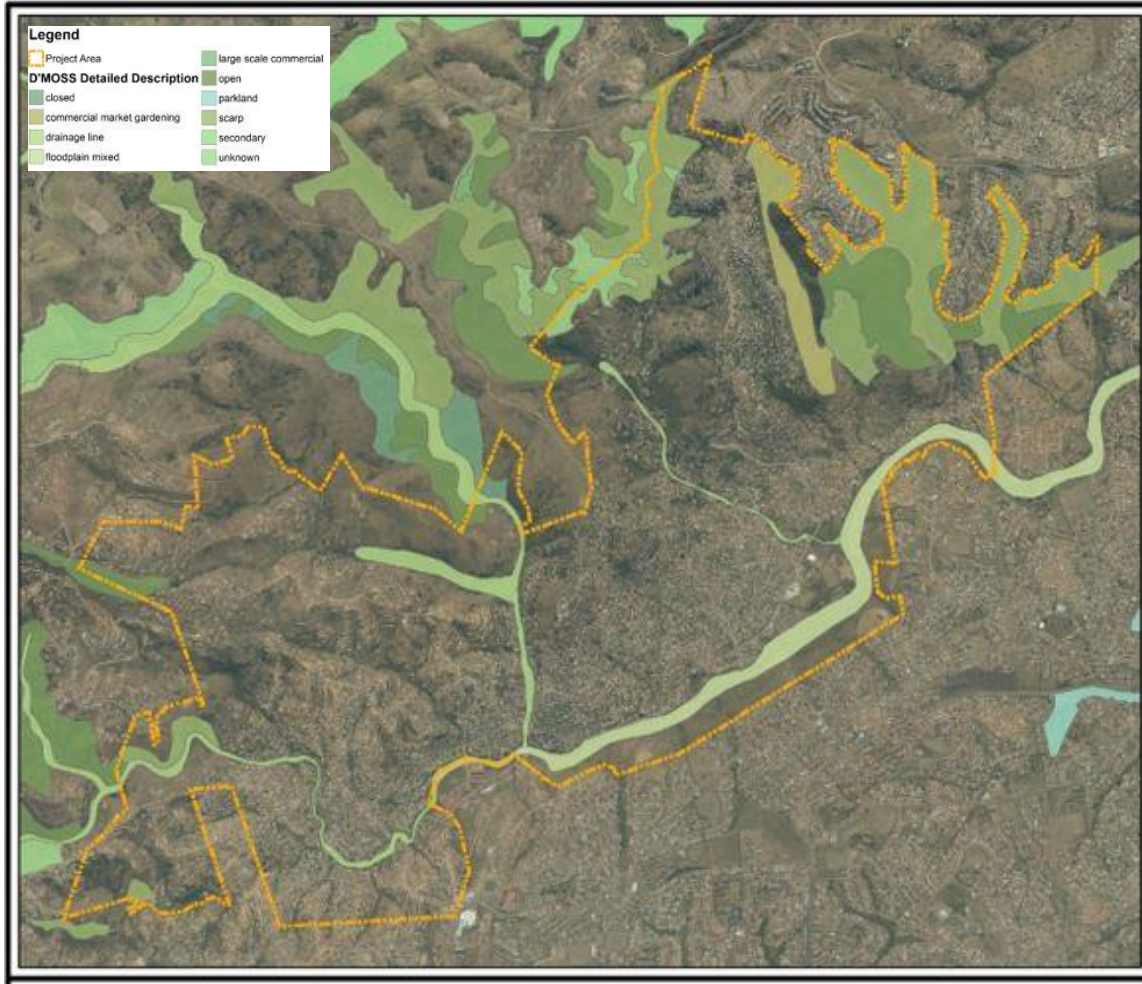
The continuous provision of the ecosystem services has been identified, in the Final 2016/17 IDP, to be of essence to sustainable development as well as being a major contributor to the Municipality’s social and economic wellbeing given that the ecosystem services supplied by D'MOSS were valued at R3.1 billion per annum in 2003 excluding contribution made to the tourism industry. According to the Municipal Final 2016/17 IDP, EMA contains 98 km of coastline, 18 major river catchments and 16 estuaries, 4 000 km of river and nearly 75 000 ha of land identified as part of the D'MOSS.

The project area, located approximately 21.95 km north west from the Durban CBD is characterised by terrestrial (transitional, scarp and open space) and freshwater ecosystems. The ecosystem service provided within the project area is food production through the commercial market gardening located within the Trenance Park Nature Reserve found in the northern portion of the Greater Amaoti project area **(See Photo 4 and Map 3.4).**

PHOTO 4: COMMERCIAL MARKET GARDENING



MAP 3.4: D'MOSS



4 Agricultural Assessment

4.1 CLIMATE DATA

The 2004 eThekweni Agricultural Status Quo Report (“Status Quo”) highlights that temperature and rainfall are two of the most important determining factors of the potential for agricultural production.

4.1.1 Temperature

The mean annual temperature for the Municipal area range from 16-20°C, with temperatures being highest along the coast and dropping towards the western area. According to the Status Quo, this decrease is inversely proportional to the elevation levels, such that when elevation increases the temperature decreases. Most of the municipal area is frost free, although a number of areas do experience occasional frosts.

4.1.2 Rainfall

Mean annual rainfall figures for the municipality range from <550mm to >1200mm per annum. Annual rainfall drops towards the west with drier areas being located inland.

4.2 Topography

The overall topography of the study area is summarized in Table 4.1 below and clearly depicted on Map 4.1 below. The slope analysis study indicates that the majority of the project area (30.71%) is characterized by slopes that are “Between 1:5 - 1:3”. Approximately 20,71% of the area’s topography has a slope character “Steeper than 1:3” while 16,19% of the project area is characterised by slopes “Between 1:7.5 - 1:5”. Given that majority of the project area in the

northern, southern, western and central sections are steeper than 1.:7.5, it will be extremely difficult to farm on these hills.

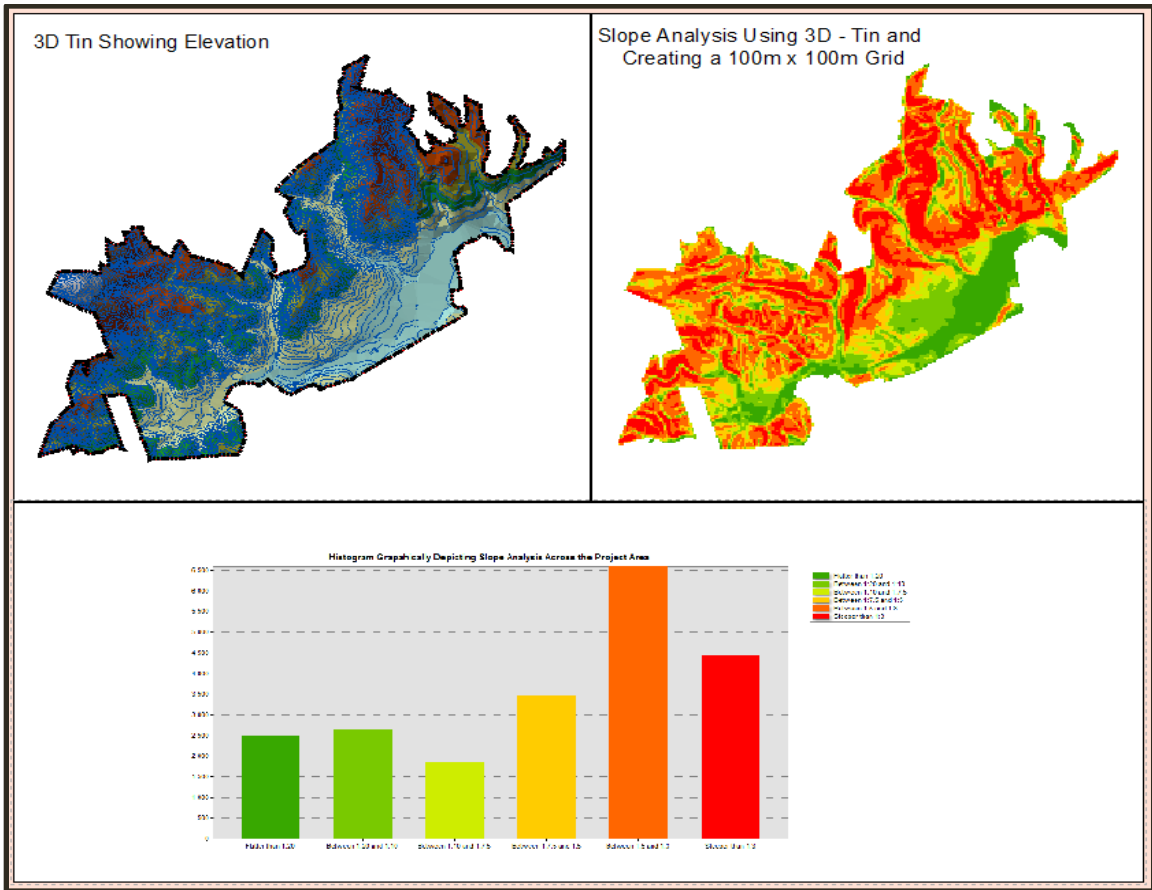
Table 4:1: Slope Analysis

Slope Analysis	Area (Ha)	Percentage of Total Area
Flatter than 1:20	144,58	11,58%
Between 1:20 - 1:10	153,8	12,32%
Between 1:10 - 1:7.5	106	8,49%
Between 1:7.5 - 1:5	202,03	16,19%
Between 1:5 - 1:3	383,29	30,71%
Steeper than 1:3	258,49	20,71%
Total Area	1248,19	100,00%

PHOTO 5: TOPOGRAPHY OF PROJECT AREA



Map 4.1: Slope Analysis



4.3 GEOLOGY AND SOILS

4.3.1 Land Type

According to the land type database (Land Type Survey Staff, 1972 - 2006) the development falls within four land types namely; the Fa491, Fa494, Fa496, and Aa9 land types. These are described in table 4.1.

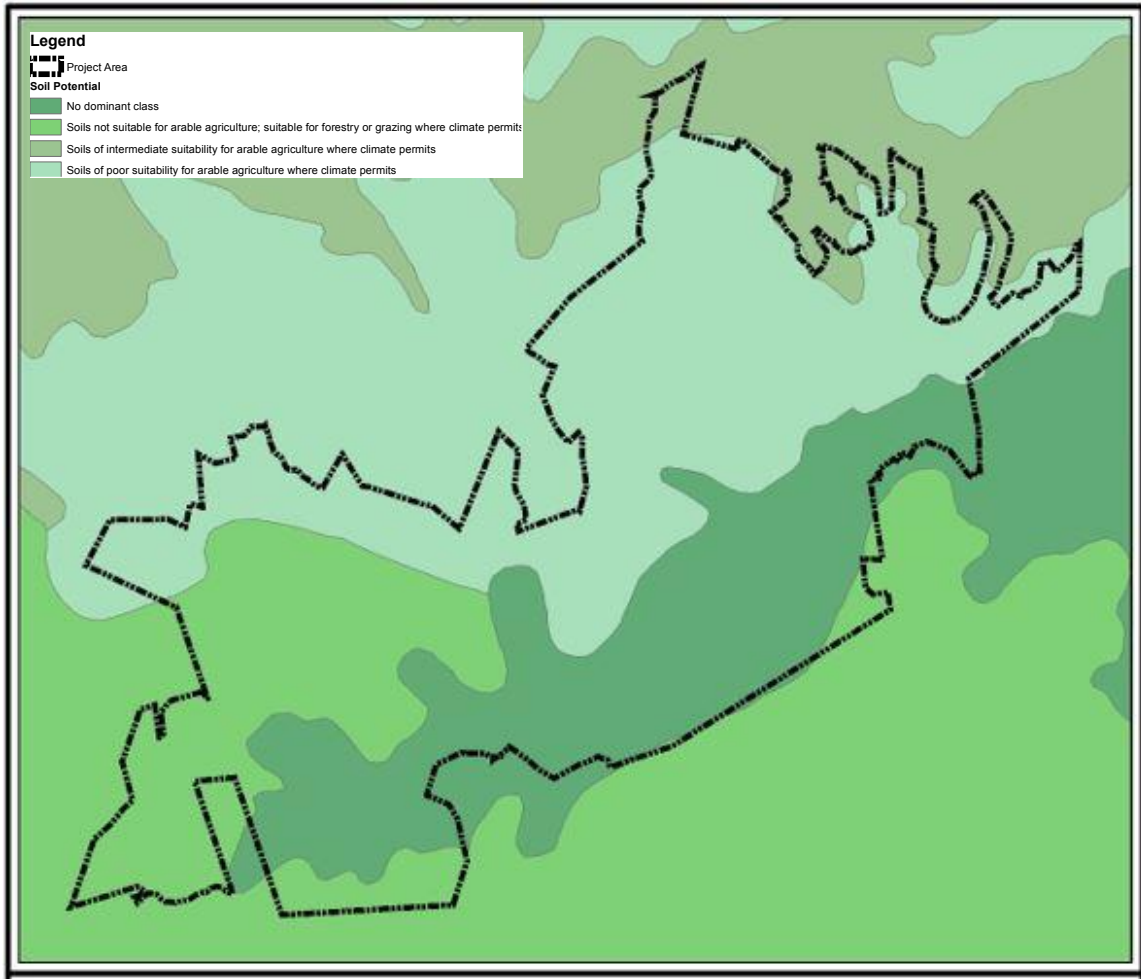
TABLE 4:2: THE LAND TYPES FOR THE AMAOTI PROJECT AREA

Land Type	Geology	Soil Description
Fa491	Mainly alluvium, with small areas of sandstone of the Vryheid Formation, Ecca Group.	Glenrosa and/or Mispah Forms (other soils may occur); Lime rare or absent in the entire landscape
Fa494	Mainly tillite of the Dwyka Formation with small areas of shale of the Pietermaritzburg Formation, Ecca Group, sandstone of the Natal Group and isolated dolerite Dykes.	Glenrosa and/or Mispah Forms (other soils may occur); Lime rare or absent in the entire landscape
Fa496	Sandstone of the Natal Group.	Glenrosa and/or Mispah Forms (other soils may occur); Lime rare or absent in the entire landscape
Aa9	Sandstone of the Natal Group, with isolated occurrences of dolerite.	Red-Yellow Apedal, Freely Drained Soils; With a humic horizon

4.3.2 Soil Potential

The implication of the soil descriptions outlined above together with the other influencing physical factors from an agricultural point of view are depicted in Map 4.2. The soil potential of the predominant soil within the study area is described as “Soils of poor suitability for arable agriculture where climate permits”, which occurs in the northern sections of study area. The second soil type can be described as “No dominant class” which occurs in the eastern and southern section of project area. The third soil type is “Soils not suitable for arable agriculture; suitable for forestry or grazing where climate permits” and occurs in the western section of the project area. Based on the soil potential assessment, the soils found within in the project area is not conducive for arable agricultural.

MAP 4.2: SOIL POTENTIAL



4.3.3 Soil Depth

As indicated in Map 4.3, the approximate depths of the various soil types occurring across the project area are depicted on the attached thematic map. The information provided indicates that the soil depths of the various soil types of the project area range from <450mm - >750 mm. The soil depth in the northern, central and southern sections of the project area are between 450mm and 750mm, whilst in the eastern and southern portions it is >750mm.

Map 4.3: Soil Depth



4.3.4 Bedrocks

Soil parent material, information and data has been sourced from the Council for GeoScience. The following is the geology analysis of the bedrocks occurring with the project area that have been identified.

TABLE 4:3: THE GEOLOGY OF THE BEDROCKS OCCURRING WITHIN THE AMAOTI PROJECT AREA

LITHSTRAT	LITHRANK	PARENT	LOCATION	DESCRIPTION
NATAL	GRP	-	Covers a large section of the project area from the south west towards the north-eastern portion of Amaoti.	Generally reddish, feldspathic and micaceous sand stone with subordinate quartz arenite, mudrock, granulestone and conglomerate
DWYKA	GRP	KAROO	Covers the a small area of the project area along the south west to the north east portions	Diamicite (polymictic clasts, set in a poorly sorted, fine grained matrix) with varved shale, mudstone with dropstones and fluvio-glacial gravel common in the north.

4.4 Agricultural Potential Category

According to the Agricultural Land Potential Categories External Report, agricultural potential refers to, the potential of the land to produce sustainably over a long period without degradation to the natural resources base. This includes land under production for cultivation purposes (arable land) and for grazing purposes.

There are eight agricultural potential categories, namely:

- Category A (Irreplaceable): Very High Agricultural Potential
- Category B (Threatened): High Agricultural Potential
- Category C (Primary Agricultural Land Use): Moderate Agricultural Potential
- Category D (Secondary Agricultural Land Use): Low Agricultural Potential
- Category E (Mixed Land Use): Very Low Agricultural Potential
- Waterbodies
- Permanently Transformed
- Proclaimed reserves

As indicated in Table 4.4 below and Map 4.4, majority (68.25%) of the project area is categorised as Permanently Transformed and is distributed throughout the project area. Areas demarcated as Permanently Transformed, applies to land that has been converted irreversibly to non-agricultural land uses. This includes urban/built up areas, roads, mines and quarries and which can therefore no longer be utilized for agricultural production purposes. This Category will also require regular updates due to on-going non-agricultural development. This may also include previously mined areas which are polluted and/or degraded to the point that safe utilization of the land for food production is not possible (Collett and Mitchell, 2013).

Approximately 24.18% of the project area is categorised as Category C: Moderate Agricultural and is located in the northern sections of the project area. Land with moderate agricultural potential would be required to achieve viable and sustainable food production, although agriculture is the still the majority land use in the rural landscape (Collett and Mitchell, 2013). This Category is more limited in the extent of arable land available for cultivation. These areas are more suitable for extensive grazing, the production of fodder crops in support of livestock

production, and, from a natural rangeland grazing perspective, additional feed may be required during winter months to supplement the seasonal grazing provided by existing rangeland (Collett and Mitchell, 2013).

Approximately 4.35% of the project area is categorised as Category B: High Agricultural and is located in the south eastern portion, along the Ohlange river. Due to the limited amount of high potential agricultural land in the municipality, all efforts should be focused on retaining land within this Category for predominantly agricultural use. Land within this category has the potential to be used sustainably, with very few limitations to agricultural production (Collett and Mitchell, 2013).

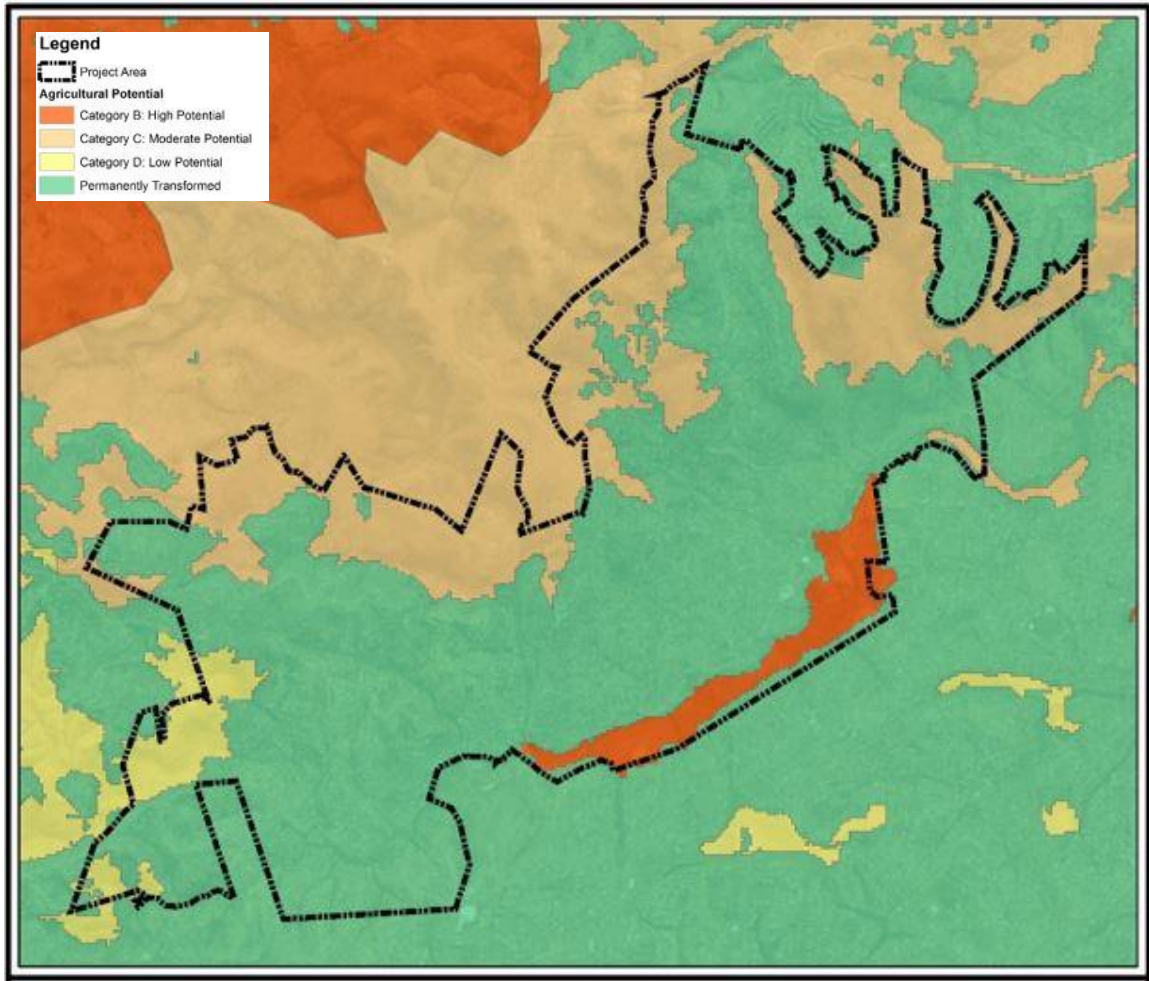
There is approximately 3.22% of Category D: Low Agricultural in the western section of the project area. This land requires significant interventions to enable sustainable agricultural production which could include terracing, contours, high levels of fertility correction, lower stocking rate, supplementary feed etc (Collett and Mitchell, 2013).

Change of land use may be supported from agriculture to other land uses as long as this change does not conflict with the surrounding agricultural activity. The activity must also not interfere with existing agricultural activities, especially where agricultural practices are still the main source of income (Collett and Mitchell, 2013).

Table 4:4: Agricultural Potential

Agricultural Potential	Area (Ha)	Percentage of Total Area
Category B: High Agricultural	53,78	4,35%
Category C: Moderate Agricultural	298,74	24,18%
Category D: Low Agricultural Potential	39,74	3,22%
Permanently Transformed	843,32	68,25%
Total Area	1235,58	100%

Map 4.4: Agricultural Potential



5 Mitigation Measures

The purpose of this section is to identify the potential impacts caused by the proposed development and to provide a description of the mitigation required so as to limit the identified negative impacts on the natural environment.

Negative impacts identified during the construction phase are associated with the following:

- soil compaction and erosion;
- soil pollution as a result of construction activities; and
- continued spread of alien invasive species as a result of the disturbance.

Each of these identified impacts are discussed below and a list of mitigation measures have been provided in Table 5.1 below.

TABLE 5:1: IMPACTS AND MITIGATION

Impact	Description of Impact	Mitigation Measures
Soil Compaction and Erosion	The use of heavy machinery or vehicles during construction will lead to the compaction of disturbed soils. Further to this the exposure of the soil to environmental factors increases the likelihood of erosion particularly on the steep slopes associated with the site. Compacted soils will erode more quickly than natural soils.	<ul style="list-style-type: none"> • Demarcate all sensitive ecological areas outside of the construction servitude and ensure that these areas remain off-limits during construction. • The creation of any new roads in the site must take into account all sensitive areas and must work around these areas. • Erosion control measures must be implemented in areas sensitive to erosion and where erosion has already occurred such as edges of slopes, exposed soil etc. These measures include but are not limited to - the use of sand bags, hessian sheets, silt fences, retention or replacement of vegetation and geotextiles such as soil cells which must be used in the protection of slopes. • Do not allow surface water or storm water to be concentrated, or to flow down slopes without erosion protection measures being in place. • Vegetation clearing must not be undertaken more than 10 days in advance of the work front. The entire construction area must not be stripped of vegetation prior to commencing construction activities. • All disturbed areas must be rehabilitated as soon as construction in an area is complete or near complete and not left until the end of the project to be rehabilitated. • Where any construction will take place adjacent to any wetlands, drainage channels or the river, install sediment barriers along the edge of the construction servitude to contain sediment and spoil within the construction area.
Pollution of Soil Resources	Mismanagement of waste and pollutants like hydrocarbons, construction waste and other hazardous chemicals will result in these substances entering the soil resources and polluting sensitive natural environments either directly through surface runoff during rainfall events, or subsurface water movement through the soil profile.	<ul style="list-style-type: none"> • All waste generated during construction is to be disposed of as per an Environmental Management Programme (EMPr) and no washing of containers,

		<p>wheelbarrows, spades, picks or any other equipment adjacent to or in any of the channels including the Mvoti River is permitted.</p> <ul style="list-style-type: none"> • Proper management and disposal of construction waste must occur during the lifespan of the project, including during the operational phase of the project. • No release of any substance i.e. cement, oil, that could be toxic. • Place the construction camp or any depot for any substance which causes or is likely to cause pollution outside of sensitive areas including the steep slopes. • Spillages of fuels, oils and other potentially harmful chemicals must be cleaned up immediately and contaminants properly drained and disposed of using correct solid/hazardous waste facilities (not to be disposed of within the natural environment). Any contaminated soil must be removed and the affected area rehabilitated immediately.
<p>Alien Invasive Species</p>	<p>The removal of soils and vegetation will lead to a further disturbance within the receiving environment and this will have negative impacts on the functionality of the vegetation community in this area. This makes them more vulnerable to encroachment by invasive alien species and further erosion. Alien invader plant species pose an ecological threat as they alter habitat structure, lower biodiversity (both number and “quality” of species), change nutrient cycling and productivity, and modify food webs</p>	<ul style="list-style-type: none"> • Protect as much indigenous vegetation as possible. • Rehabilitate disturbed areas as soon as construction in this area has ended. • Ongoing alien plant control must be undertaken during the operational phase after the construction phase and particularly in the disturbed areas. Areas which have been disturbed will be quickly colonised by invasive alien species. An ongoing management plan must be implemented for the clearing/eradication of alien species. • The following guidelines apply to re-vegetation: <ul style="list-style-type: none"> - Utilise erosion and sediment control techniques where needed. - Grade the disturbed area to a stable uniform slope. Vegetative cover will not develop on an unstable slope. - Loosen the soil by hand. - Plant when the weather will permit e.g. suitable temperatures and moisture for plant growth. Spring plantings give the best results. - On unstable soils use a soil saver as described above to protect the bare soil before the planted vegetation has become established.

6 Conclusion

The proposed development is not expected to have an impact on agricultural production in this area due to the agricultural limitations of the site, which include the steepness of the site and the fact that the area has been transformed due to human inhabitants. Apart from the small scale subsistence gardens there is no large scale agricultural production taking place within the project area.

Documentation was submitted to the Department of Agriculture and Rural Development. As per their letter dated the 29th of November 2016 (**Annexure A**), the Department has no objection to the project subject to strict adherence to the provisions of the Conservation of Agricultural Resources Act (43 of 1983). The object of CARA is to conserve the natural agricultural resources by combating and preventing erosion and weakening or destruction of water sources, and by the protection of the vegetation and the combating of weeds and invader plants.

Annexure A: Response from DARD



agriculture & rural development

Department:
agriculture
& rural development
PROVINCE OF KWAZULU-NATAL

AGRICULTURAL RESOURCES MANAGEMENT

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ReferenceNumber 2016/11/4458
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RE: PROPOSED HOUSING DEVELOPMENT WITHIN THE GREATER AMAOTI AREA.

1. PURPOSE

- 1.1 To provide comments in response to the Draft Scoping Report for the proposed housing Development within the greater Amaoti area of the eThekweni Metropolitan Municipality.

2. BACKGROUND

- 2.1 The development entails the formalisation and development of the greater Amaoti area. The population of the the area is approximately 60 005 persons. This project area is approximately 1235.59 Ha in extent which is located on a portion of Wards 52, 53, 55, 56, 57, 59, and 102 of the eThekweni Metropolitan Municipality. The proposed development is made up of the following settlements; Amaoti, Amaoti-E, AmaotiCuba, Amawothi, Amawoti-E, Amawoti-F, Goqokazi, Langalibalele, Lower Angola, Lusaka, Lusaka1, Lusaka 2, Mocambique, Namibia, Nigeria, Shastri Park, Tanzania, upper Amaotana, Westham, Zambia and Zimbabwe.
- 2.2 The project is anticipated to deliver approximately 20 000 Greenfield and Brownfield residential units together with supporting infrastructure and social facilities. The current Land use of the project area is on a low to medium residential purposes which consists of houses that are both formal and informal.
- 2.3 The overall topography of the study area can be analysed as follows; majority of project area (30.71%) is characterised by slopes that are between 1:5-1:3. Approximately 20.71% of the area's topography has a slopes character steeper than 1:3 while 16.19% of the project area is characterised by slopes between 1:7.5-1:5. Appropriate planning and design principles suitable for the topography of the area will be applied during planning stages of the envisaged housing process.
- 2.4 It is envisaged that Storm water will be diverted by means of channels and /or below ground storm water pipes which will be routed and attenuated to reduce its speed before entering into the nearest wetland area or stream/river to prevent impact on this natural water sink.

3. COMMENTS

- 3.1 An inspection visit was conducted to the proposed housing development sites on the 28 of November, 2016.

- 3.2 The project site is situated on a permanently transformed Land which is currently used for low to medium residential purposes consisting of houses that are sited on mostly very steep slopes that are both formal and informal.
- 3.3 The entire area is an urban setting and no agricultural activity of any significance is taking place in the project area. Due to the very sloppy nature of this area it is necessary that adequate care be taken to prevent soil degradation of the land during or after housing development in terms of CARA (43 of 1983).

4. RECOMMENDATION.

- 4.1 This office is has **no objection** to this application subject to strict adherence to the provisions of the conservation of Agricultural resources Act (43 of 1983) to prevent potential Land degradation on this project site.


.....
For HEAD OF DEPARTMENT
AGRICULTURE AND RURAL DEVELOPMENT

Signed by: P. Mans
Designation: Caretaker Scientific Manager: Land Use and Regulatory Unit

Date:.....

Cc: Mashudu Marubini; LAND USE AND SOIL MANAGEMENT, PRIVATE BAG X120 GESINA, PRETORIA 0001. Tel: 012 319 7564/ Fax:012 329 5938.