Like the SDF, but at a more macro level, the PGDS provides a framework for public and private sector investment by highlighting areas of development opportunity. It also addresses key issues of implementation blockages whilst providing strategic direction.

IMPLICATIONS FOR THE SDF

- The SDF aligns with the following provincial priorities:
- Strengthening governance and service delivery;
- Sustainable economic development and job creation;
- Integrating investment in community infrastructure; and
- Fighting poverty and protecting vulnerable groups in society.

3.1.10 Provincial Spatial Economic Development Strategy

The KZN provincial government prepared a provincial as well as District profiles as a basis for understanding the province. Issues considered included:

- An analysis of the levels of social service provision in each district;
- Population dynamics;
- The Gross Value Added (GVA) per district and local municipality; and
- Levels of water and sanitation provision.

The PSEDS is a response to these profiles and it sets out to:

- Focus where government directs its investment and development initiatives;
- Capitalising on complementarities and facilitating consistent and focussed decision making; and
- Bringing about strategic coordination, interaction and spatial alignment.

The PSEDS identifies priority sectors in the KZN economy which include:

- The agricultural sector (including agri-processing) and land reform;
- The industrial sector;
- The tourism sector; and
- The service sector (including government services)

The implications of this for the e'Dumbe municipality are as follows:

- In terms of the agricultural sector, it is the main economic driver and economic opportunity.
- In terms of industrial development, there should be linkages identified within the municipal (routes linked to industrial development) and seek to provide development proposals with further analysis.

- The Paulpietersburg Town identified as the main nodes supporting the rural hinterland and development of poor rural areas.

In terms of corridors, the PSEDS identifies the

IMPLICATIONS FOR THE SDF

- In terms of industrial development, there should be linkages identified within the municipal (routes linked to industrial development) and seek to provide development proposals with further analysis.

Threats

Agriculture and Land Reform

Loss of productive commercial agricultural land to residential development

The protection of productive agricultural land from unplanned residential / urban development is essential to maintain the future productivity and efficiency of rural farming communities. Good quality agricultural land is a finite resource that must be protected and managed for the long term.

As a general scale plans should aim at protecting productive agricultural land from development that leads to its diminished productivity.

Residential development should be planned with a view to abide by these principles in the spirit of integrated and sustainable development as these will be a need to develop land for this purpose.

Loss of land with agricultural potential in poor rural areas

The survival of South Africa's rural communities and the health of the rural economy depends upon the condition and availability of natural resources. The traditional and widespread view that land is almost a limitless resource is a myth.

Over-crowding, poverty and poor farming methods amongst other reasons have led to loss of significant areas of good agricultural and land degradation is now widely regarded as one of the greatest challenges facing rural areas.

Land reform resulting in a loss of productive commercial agriculture

- Land reform encompasses three distinct components which are restitution, tenure reform, and the redistribution programmes. Land reform should not necessarily equate in a loss of products agricultural land.
- The Land Redistribution for Agricultural Development sub –programme (LRAD) amongst others recognises the need to provide grants for agricultural projects.

Amongst the types of projects that can be catered for include: Food safety nets, equity schemes, production for markets.

With respect to agriculture in communal areas it is evident that many people already have secure access to agricultural land but may not have the means to make productive use of that land: LRAD assists in the process of minimising the loss of good potential agricultural land by providing schemes to make productive investments in communal land such as infrastructure or land improvements through the Department of Land Affairs.

Municipal rates on agricultural land

The municipal rating system is geared to levy rates on all land countrywide.

The new rates system to be levied by all municipalities will be open to public scrutiny, accountability and involvement in planning and decision making.

The rating basis of property will be based on a use value (economic activity) or where this cannot be determined on market value.

It can be expected that any new rural tax will considerably alter land use decision and the status of unproductive or idle land as well as the financial viability of marginal agricultural businesses.

Provision of adequate water supplies.

Some possible starting points for improving rural communities' standard of living which could also be of benefit to agriculture are to improve access to water by means of piping, windmills, subsidization of water tanks and canals. This would save time spent on fetching water and make limited irrigation of gardens possible. It would also improve health condition.

Other aspects to improve conditions would be improved transport facilities, access to credit, improved health services and provision of training courses in the optimal use of scarce agricultural resources.

Tourism

Safety and Security

As a result of tourism' multi-disciplinary nature and dependency on a range of variables, the tourism industry will always remain susceptible to external influences, including amongst others the safety and security of tourists.

The absence of detailed statistics relating to crime on tourists in particular makes it difficult to get a true picture of the situation as the South African Police Services (SAPS) does not distinguish between crime against tourists and against the general public.

In line with sustainable development, it should be noted that tourism can also become a danger to the safety and security of a peoples' culture and way of life.

The main focus of government structures in South Africa should be on the planned creation of safe environments, the creation of jobs and the empowerment of communities and individuals with respect to tourism developments.

Land Invasion and illegal activities affecting tourism assets.

There is a widespread perception that tourism in remote areas (eco-tourism) is a high risk industry. Some of the risks include illegal activities and land invasion in particular where the rights of communities may be affected.

Land invasion can be curbed using the relevant legislation available, however ways and means to reduce the possibility of land invasions should be addressed at the planning stage in consultation with most communities living adjacent to the proposed tourism development.

Industry

Reliability of services

Technology, water, electricity, transport network, waste disposal are some of the services that industrial development requires to remain sustainable.

The reliability of these services are factors which decide investors to locate industries in certain areas. Therefore in order to attract industrial development service providers should endeavour to ensure that reliable services are available.

Social support services

Social support services cover a broad spectrum which can be directly or indirectly associated with industry, industrial development and job creation. These range from social services support for workers, family, children, people seeking housing etc.

A lack of such services within the municipality will affect industrial development.

Destructive Inter-Municipal competition

- Intergovernmental planning principles recognize the spirit of o-operative governance whereby plans of all sphere support those of another.
- From an investment and development perspective the principles of the NSDPs vision apply in which "SA will become a nation in which investment and infrastructure and development programmes support government's growth and development objectives".
- This is to be achieved by:

- focusing economic growth and employment creation in areas where it is most effective and sustainable
- supporting restructuring where feasible to ensure greater competitiveness
- fostering development to the basis of local potential
- by ensuring that development institutions are able to provide basic needs.

- It is clear that each municipality will have different potentials to providing the above.

Municipal rates on Industrial and Commercial development

- Excessive rating of commercial and industrial development will effect its viability and need not be a threat. The Municipality may also apply rebates.
- Rates are levied in accordance with the Act as an amount in the Rand based on the market value of all rateable property as reflected in the Municipal Valuation roll as contemplated in Chapters 6 and 8 respectively of the Act. Local Government: Municipal Property Rates Act 2004 (Act No. 60 of 2004)

Priority and Objectives for e'Dumbe Municipality

Agriculture and Land Reform

- Develop agricultural potential in low income peri-urban fringe
- Protection of high potential agricultural land for commercial production
- Support land reform beneficiaries to increase agricultural production (consider supply linkages and possible joint ventures with major companies such as Sappi, Mondi, etc).

Tourism

- The municipality has an existing tourism plan and the recommendations contained therein needs to be incorporated into the SDF. The importance of this sector in the development of the municipality should not be underestimated.
- Relevant information also needs to be extracted from the Municipality's Economic Study as the link between economic development and tourism is critically important.

Industry

Due to the important role of agriculture within the municipality, consideration should be given to the identification and promotion of agri-indusrty.

Services

Formalise and plan Urban Centres to position for investment

Services are essential to urban growth and development and should be planned an in place to readily allow for the development of urban centres and embrace investment opportunities.

IMPLICATIONS FOR THE SDF

- Industrial linkage areas nee to be identified and develop them further through the SDF.
- In terms of the agricultural sector, it is the main economic driver and economic opportunity.
- The Paulpeitersburg Town identified as the main nodes supporting the rural hinterland and

development of poor rural areas.

3.1.11 White Paper on Spatial Planning and Land Use Management

The Minister of Land Affairs, as the Minister responsible for land, proposes to introduce new legislation to parliament that provides a uniform, effective and efficient framework for spatial planning and land use management in both urban and rural contexts. This legislation will clear up the extraordinary legislative mess inherited from apartheid in this area of governance. The most dramatic effect of the White Paper is that it will rationalise the existing plethora of planning laws into one national system that will be applicable in each province, in order to achieve the national objective of wise land use.

The main elements of the new system proposed in the White Paper are as follows:

Principles. The basis of the system will be principles and norms aimed at achieving efficiency, equality, sustainability, fairness and good governance in spatial planning and land use management.

Land use regulators. The White Paper proposes a category of authorities able to take the different types of decision falling into the realm of spatial planning and land use management: land use regulators.

IDP-based local spatial planning. This element is of most use to this study. The White Paper spells out the minimum elements that must be included in a spatial development framework. It also proposes that the spatial development framework operate as an indicative plan, whereas the detailed administration of land development and land use changes is dealt with by a land use management scheme, which will actually record the land use and development permissions accruing to a piece of land. The inclusion of the spatial development framework, with a direct legal link to the land use management scheme, is an essential step towards integrated and coordinated planning for sustainable and equitable growth and development.

A uniform set of procedures for land development approvals. Where a proposed development is not permissible in terms of the prevailing land use management scheme, then permission is required from the appropriate land use regulator.

National spatial planning frameworks. In order to achieve more integrated and coordinated spending of public funds it is proposed that the Minister, in consultation, with cabinet, is able to prescribe national spatial planning frameworks around particular programmes or regions.

IMPLICATIONS FOR THE SDF

- This document is still a white paper and has no legislative status. Once adopted, the SDF has been aligned with its overall objectives and principles and will thus be in compliance.

3.1.13 NATIONAL SPATIAL DEVELOPMENT PERSPECTIVE

The National Spatial Development Perspective (NSDP) guides government in implementing its programmes in order to achieve the objectives of ASGISA of halving poverty and unemployment by 2014. The NSDP is built on four basic principles. These are:

Principle 1: Rapid economic growth that is sustained and inclusive is a pre-requisite for the achievement of poverty alleviation

Principle 2: Government spending on fixed investment should be focused on localities of economic growth and / or economic potential in order to gear up private sector investment, stimulate sustainable economic activities and create long-term employment opportunities

Principle 3: Where low economic potential exists investments should be directed at projects and programmes to address poverty and the provision of basic services in order to address past and current social inequalities

Principle 4: In order to overcome the spatial distortions of Apartheid, future settlement and economic development opportunities should be channelled into activity corridors and nodes that are adjacent to or link the main growth centres in order for them to become regional gateways to the global economy

The National Spatial Development Vision reads as follows:

"South Africa will become a Nation in which investment in infrastructure and development programmes support Government growth and development objectives:

- By focusing economic growth and employment creation in areas where this is most effective and sustainable
- By supporting restructuring, where feasible, to ensure greater competitiveness
- By fostering development on the basis of local potential
- By ensuring that development institutions are able to provide basic needs throughout the country."

The NSDP identifies Core Regions and Spatial Economic Linkages outside the country's three main Metropolitan Areas.

The clustering of economic activities in areas with high potential for economic development provide regional competitive advantages. At the same time, where feasible, economic benefits from those growth sectors which are not dependant on clustering should be spread to those parts of the municipality where relatively low economic potential exists.

3.1.14 Planning and Development Act 06 of 2008

In terms of the Provincial Gazette Notice No. 54 of 22 April 2010, the KwaZulu-Natal Planning and Development Act, Act No. 6 of 2008 came substantially into operation on 1 May 2010.

In terms of the preamble to the Act, the Act in its implementation as law is intended to:

(a) promote a uniform planning and development system that treats all citizens of the Province equitably;
(b) provide a fair and equitable standard of planning and development to everyone in the Province while accommodating diversity such as urban and rural needs;
(c) incorporate and build on good practices and approaches to planning and development which have evolved outside of the formal planning and development system;
(d) promote a planning and development system that redresses the historic injustices perpetuated by a fragmented planning and development system;
(e) favour lawful development;
(f) be clear, including the relationship between different laws;
(g) be practical;
(h) promote certainty;
(i) require timeous action by decision makers;
(j) guide decision makers;
(k) require decision makers to obtain expert advice before making a decision; and be enforceable.

The Act requires that planning and development decisions be taken by local government, with appeals being resolved be an independent tribunal appointed by the responsible Provincial Member of the Executive Council.

This Act provides for the adoption, replacement and amendment of a scheme. The purpose of a scheme is to regulate land use and to promote orderly development in accordance with the Municipality's Integrated Development Plan. The Act requires that a municipality must within five years from the commencement of the Act adopt a scheme or schemes for its whole area of jurisdiction. Once adopted a municipality must review a scheme within six months after it has adopted an Integrated Development Plan for its elected term as contemplated in section 25 of the Municipal Systems Act.

In terms of the transitional arrangements set in the Act, the provisions of a town planning scheme already adopted must be treated as a scheme adopted in terms of the Act. The Act provides for procedures for application for development of land outside of schemes.

IMPLICATIONS FOR THE SDF

- The adoption and review of a scheme or schemes for a municipal area of jurisdiction form a key component of a Land Use Management System. In terms of Section 26 of the Local Government Municipal Systems Act the Spatial Development Framework must include the provision of basic guidelines for a Land Use Management System. Accordingly, such guidelines will need to cover the preparation and review of schemes in terms of the Planning and Development Act, and measures to ensure that the municipality can effectively process applications for development in terms of this Act.

3.1.15 10 New National Priorities

1. Creation of decent work and economic growth
2. Social and economic infrastructure
3. Rural development linked to land reform
4. Skills and human resource base
5. Improving the nations health profile
6. Fight against crime and corruption
7. Cohesive and sustainable communities
8. International co-operation
9. Sustainable resource management
10. Democratic developmental state

IMPLICATIONS FOR THE SDF

- The SDF aligns itself with the new national priorities as it underlying principles are based on:
  Sustainable development
  Planning strategies: access routes as investment lines, a service centre strategy, integration, meeting land use needs and identification of areas of economic development potentials, restructuring of the Local Municipality

3.1.16 7 New Provincial Priorities

1. Create image of new administration
2. Caring and humane government
3. Good Governance
4. Inclusive Government
5. Present a practical, measurable program of action for government with time frames
6. Use agriculture as main platform for integration
7. Household food security

IMPLICATIONS FOR THE SDF

- This document is still a white paper and has no legislative status. Once adopted, the SDF has been aligned with its overall objectives and principles and will thus be in compliance.
- The SDF is in compliance with the DLGTA it seeks to achieve cross border alignment.
- The SDF identify suitable land usage and agricultural land is highly prioritised

4.0 SITUATIONAL ANALYSIS – EDUMBE LM CHARACTERISTICS

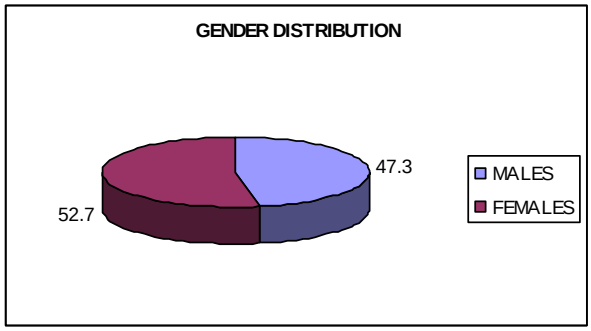
4.1 THE PEOPLE

The e'Dumbe Municipality measures an area of 1 947 km^2 with 7 wards, this area is said to be home to an estimated population of 101 607 people, residing in 15 024 households (increase from 11 611 of 2001).

4.1.1 Gender Distribution

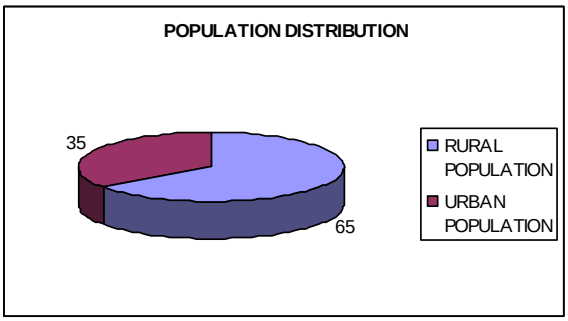
Gender distribution assists the government to focus investments especially to vulnerable groups like women and also provide appropriate facilities and social investments in line with gender demographics.

The following chart shows the gender distribution in e'Dumbe LM with females being the majority in the municipal area.



4.1.2 Population Distribution

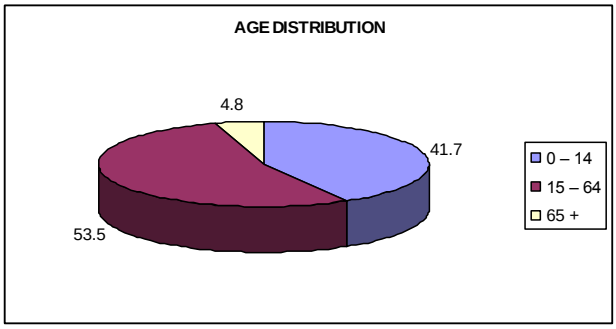
Much of the municipal population reside in rural parts of the municipality since much of the municipal area (more than half) is rural in nature however due to the nature of rural settlement (sparse) you find that houses are far apart where as in the urban areas there is much more compact development patterns houses are found close to each other many factors contribute to these kind of population distribution which include amongst others the issue of terrain in rural areas, where slopes compels people to build houses far apart and also there are no site cadastral boundaries in most parts of rural development thus ad hock developments takes place whereas in urban areas there are defined site boundaries that directs development.



Also refer to map 7 for population density.

4.1.3 Age Distribution

The age distribution in e'Dumbe Municipal area is dominated by the potential labour force age group of 15-64 years (adds up to 53.5%) while the dependant group of ages between 0-14 and 65+ accounts for the remaining 46.5%. The dominant age group of 15-64 suggests that there is a need to create more job opportunities for the inhabitants. Also the second highest age group of 0-14 reflects a need to increase social facilities such as schools and clinics to cater for this dependent group.



4.2 SERVICES & INFRASTRUCTURE

4.2.1 Health Services *(Refer to map 11)*

There are presently 7 clinics in the municipal area of which the Dumbe Community Health facility is the best equipped. There are 14 mobile clinic stopping points in the rural areas. The closest hospital is in Vryheid 50km away. The IDP highlights the need for a hospital and a further 8 clinics in e'Dumbe.

4.2.2 Solid Waste Disposal

There are no formal refuse removal services or landfill sites in the rural areas of e'Dumbe. There is one landfill site in Paulpietersburg that is in the process of being closed. The landfill site at Bilanyoni has a life of at least 50 years.

4.2.3 Electricity

Electricity is supplied by connection to the Eskom grid or by way of non-grid electricity. Backlogs in terms of connection to the Eskom grid for the District are estimated at 39%, and non-grid 9%.

The 2007 Community Survey indicates that 58% of Households in e'Dumbe used electricity for lighting.

4.2.4 Water and Sanitation

Zululand District Municipality is a Water Service Authority. There is a huge backlog in terms of water supply within the e'Dumbe municipal area as there is almost a 25% (24.7%) water backlog.

According to the Municipal IDP, the sanitation backlog has been addressed to a large extent during the past 5 years, and most households within the municipal area currently have access to at least a VIP service (the 2007 Community Survey indicates 5% of the population was without access to sanitation).

4.2.5 Roads

The District's Transportation Plan indicates that almost all households are within 1 km of a road.

The e'Dumbe IDP records that the state of roads is an area of concern. Only 6% of roads are paved. Many of the rural roads do not have bridges where rivers are crossed. The provision of bridges and the upgrade of roads is a priority. Most MIG funding sourced by e'Dumbe is used for upgrading of roads.

4.2.6 Education *(Refer to map 9 & 10)*

The e'Dumbe IDP indicates that 17% of residents over the age of 20 have no schooling at all, only 5% have a matric, and 1,5% some form of higher education qualification. The need for training and ABET programmes is highlighted.

The following school facilities are summarised in the e'Dumbe IDP:

Facility	Number
Crèche	20
Primary School	61
Secondary School	15
Combined School	14

Backlogs of 7 Primary Schools and 6 Secondary Schools are estimated in the e'Dumbe IDP.

4.2.7 Telecommunication

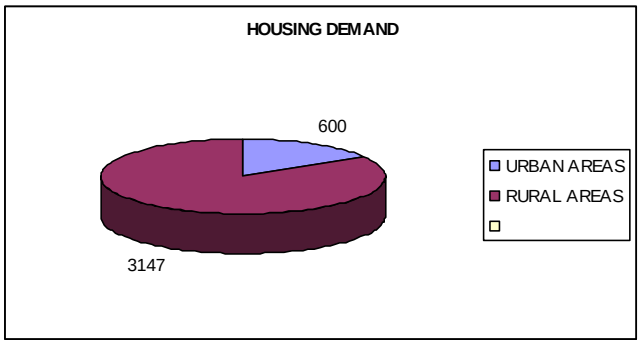
The telephone coverage in e'Dumbe is poor, with very limited coverage in the rural communities. Telkom, vodacom, cell c and mtn are the main service providers of telecom facilities within the e'Dumbe municipal boundary

Useful potentials/ resources

- Telkom
- Connections within nodal areas
- Cell phone connections

4.2.8 Housing

In terms of access to housing it is not surprising that there is a huge backlog in rural areas as compared to the urban as it has been revealed that there are more people residing in rural areas as to the 35% residing in urban areas.



4.3 SOCIAL FACILITIES

The following table indicates the availability of social facilities in e'Dumbe:

Social Facilities	
Schools	90
Clinics	6
Shops in Rural Areas	39
Police Stations	1
Recreation Facilities	9
Old Age Home	1
Community Halls	5
Post Offices	1
Crèches (Not verified)	20
Law Courts	1
Hotels, Resorts & Conference Facilities	9
Cemeteries	7
Municipal Offices	3

4.4 LAND REFORM

The current land ownership pattern in e'Dumbe reflects past practices of exclusion and favouritism. The majority of the land is privately owned farms which are located on the land with the highest agricultural potential whilst the majority of the poor population is located on land with the poorest quality in the eastern portion of the area.

There are several land claim applications in the municipal area. In terms of the Land Reform (Labour Tenants) Act 3 of 1996 labour tenants are granted the right to apply for ownership of that portion of the farm over which they historically had use rights. The land claims refer to any person or community who lost their land after 1913 because of an apartheid law that discriminated against them; they are being handled by the Land Claims Commission. Although some of the claims have been processed, the progress on others is going very slowly. There is the perception that nothing is being done as they have been kept waiting a long time.

In order to ensure that farming productivity is maintained in the study area, it is important to address the issue of skills and training programmes for the new farmers that may require them. Issues of equality and equal development need to be dealt with, however it is still important not to neglect the aims of economic growth and maximising output potential. Many of the land claim recipients are hoping to establish co-operatives and thus will require relevant co-operative and management training as well as skills training.

Land is a very serious issue in the municipal area as most of the heavily populated areas are located on land with the lowest agricultural potential. However, there are land redistribution projects in the municipality and other labour tenant projects. The Department of Rural Development and Land Reform has appointed Nyamazane Consulting to carry out the reinstitution and redistribution programme in the area of e'Dumbe.

4.5 LAND USE

Urban and Rural Land Use information was captured in 2003/2004 using aerial photography and land use surveys conducted in the urban areas in 2003. Further land use survey will be undertaken during December to update the status quo analysis and further SDF proposals.

There are some 1900 residential stands in Paulpietersburg/Dumbe, 46 of these have been designated as Urban Agriculture as they cannot be developed due to geo-hydrological conditions. A further some 50 residential stands were vacant in Paulpietersburg in 2004 while all residential stands in Dumbe were developed.

14 Worship sites are designated on the Scheme of which one was vacant in 2004. Businesses have established in the Central Area of Paulpietersburg. In Dumbe 20 spaza

shops were operating from homes, 4 taverns and 5 tuck-shops were recorded also operating from residential stands. The zoned industrial area lies adjacent to Dumbe in the south east. Those industrial stands closest to Dumbe have been developed at businesses. Only 7 out of the 57 industrial sites were developed with industries in 2004. The southernmost industrial sites were all vacant (35 small erven).

2 Cemeteries, a Police Station, Law Courts, Municipal Offices, Library, 24 Hour Clinic, Community Hall, and Post Office were provided according to the 2004 land use. There was a High School and 3 Primary Schools. 3 substantial open space squares were present in Paulpietersburg. In Dumbe a Sports Stadium and a further Sports Ground were recorded. An active open space area was recorded to the south east of Paulpietersburg centred round a small dam.

Riverine areas traverse the surrounding townlands which were predominantly used for agricultural purposes. On the outer townlands to the southeast is Dumbe Mountain and the southwest Dumbe dam.

In terms of transport facilities these included an airstrip, railway line and taxi rank. Provincial Main Roads connect this primary urban node in 6 separate directions to its rural surrounds and beyond.

Land Use in the formal town of Bilanyoni is primarily residential (some 1 500 erven). The average size of residential erven is 200m^2. Community land uses in 2004 included schools (two high schools and two primary schools), churches (fifteen), a crèche and a small graveyard. While numerous sites have been designated as “Public Open Space”, they have not been developed as such and are currently vacant. In 2004 there were a number of commercial land uses including a supermarket, bottle store, petrol filling station, and a brewery. Home Businesses comprised taverns and numerous tuck shops/ spaza shops. Administrative uses included municipal offices, a clinic and sewerage works. In 2004 there were a number of vacant residential sites in the north west, while many of the sites designated for industrial purposes in the north east were also vacant.

Mangosuthu Village is primarily residential (some 700 potential erven). In 2004, community land uses included a primary school, a high school and two sports fields. Home Businesses comprised several taverns, tuck shops/ spaza shops and a car repairs business. There was a small afforested area in the south west of Mangosuthu Village, and vacant areas scattered throughout particularly adjacent to water courses.

Rural land use: The portions of the municipality area characterised by;

- Formal Settlement
- Dense Rural Settlement
- Muzi’s (Groups of houses)
- Homesteads
- Industry / Mining
- Grassland
- Cultivated Land

- Forestry
- Natural Bush/ Bushveld
- Dams

The predominant rural land use is grasslands. Substantial forestation occurred centrally and to the west. In terms of the 2004 land use, cultivated land was scattered throughout e'Dumbe, but was predominantly prevalent in the central area. Natural bush/bushveld occurs in the eastern portions, and dense Rural settlements covered significant portions to the east.

Agricultural Land use:

Large commercial timber companies: Timber Companies - The land use on these properties is one of large scale timber plantations of wattle, gum and pine. Only the very steep or stony land and water courses or other poorly-drained areas are left unplanted.

The standard of production is generally high.

Large scale private commercial farmers: The land use here varies somewhat from farm to farm but is usually built around three main enterprises: timber production, cropping (mainly to maize) and livestock production, often with all three land uses on the same farm but in other cases with the farmer specialising in only one enterprise e.g. dairy or poultry.

The standards of production and resource conservation are generally fair to good.

Tribal area farmers: The general pattern of land use in these areas is one of crop production by the individual land holders on their individual arable allotments which vary in size from a hectare or less to several hectares. Maize is the main crop. This is combined with livestock production on the communal grazing land. The livestock production usually takes the form of traditional patterns of cattle and goat raising based almost entirely on veld grazing.

Standards of production are hampered by financial constraints and lack of adequate training and equipment in the case of cropping, and by inadequate nutrition during winter and dry spells in the case of the livestock enterprises. Resource conservation also suffers from overstocking of the grazing land and poor crop stands and inadequate conservation structures on the crop land.

Farmers on the land reform projects: The pattern in these areas is broadly similar to that in the tribal areas but with generally lower livestock numbers and human populations per unit of area and hence less pressure on the resources. Most of the land reform projects also benefit from having been reasonably well conserved in the past.

In regard to agricultural land use in the tribal and land reform areas it should also be noted that the Department of Agriculture is currently involved in the following specific development projects:

- At Bilanyoni: egg production, vegetable garden and pig production projects.

- At Tholakele : poultry, vegetable and piggery projects.
- At Holspruit : a community garden.
- At Bhadeni : community garden and poultry projects.
- At Opuzane : an irrigation scheme.

It has also been involved in helping the communities in establishing farmers organisations at Bilanyoni, Tholakele, Bhadeni, Opuzane, Luneburg and Long Ridge.

4.6 SETTLEMENT PATTERNS AND LAND TENURE *(Refer to map 6)*

The e'Dumbe Local Municipal Area consists of 7 Wards, with the main administrative centre located in Paulpietersburg (Ward 3). Most of the land within e'Dumbe is farms and subs and a few areas (on the eastern part) are traditional areas (areas administered by the Ingonyama Trust).

Apart from the urbanized areas of e'Dumbe (Paulpietersburg/Dumbe, Bilanyoni, and Mangosuthu Village) the settlement patterns of the municipal area reflects a predominantly rural character. The dispersed settlement patterns in the municipal area create challenges around basic service delivery backlogs. The area can be described as follows:

4.6.1 Predominantly Scattered Low-Density Rural Settlements

Settlement are loosely scattered throughout the entire municipal area (especially on the western parts of the municipality) and they surround communal grazing, forestry, crop production and grasslands. Settlement density appears to be directly correlated to accessibility (increased accessibility – increased density).

Spatially, settlements density appears to be lower, the further the location from the main road axis and it's feeder roads. This is also supported by demographic information which clearly indicates that population density decline the further one moves away from the main transport routes. Levels of services are generally low, with the majority of residential structures being self-built.

Apart from a few trading stores and agricultural activities there is generally little sign of economic activities outside of the urbanized areas. The rural settlements mainly serve as residential areas with a limited economic base. Inhabitants are predominantly dependent on external sources of income and social and welfare grants. The continuous low-density sprawl of these rural settlement and poor planning of the past, which results in more productive agricultural land being taken up, can be regarded as one of the main reason for the development of the agriculture sector in e'Dumbe.

The key issues relating to tenure and settlement in the region are:

- Competition for land.

- Competing uses of land (productive agriculture vs. subsistence agriculture/residential)
- Access to affordable infrastructure

This emphasizes the need for appropriate land reform planning and spatial planning intervention to resolve the rural problems.

4.6.2 **Peri – Urban and Semi –Urban Settlement**

Bilanyoni and Mangosuthu areas area can be classified as semi urban.

Bilanyoni: The Bilanyoni area (initially known as Frischgewaagd) was originally established in the 1960's as a rural "Closer Settlement". Land Use planning in Bilanyoni was formalised in 1999/2000 with the approval of Conditions of Establishment which included land use controls in terms of the Less Formal Townships Establishment Act, Act No. 113 of 1991. This formalised area has been included as part of the Urban Scheme It is located some 20 km north-east of Paulpietersburg/Dumbe.

Mangosuthu: Mangosuthu Village lies to the immediate southwest of Bilanyoni. While initiatives were undertaken towards the formalisation of Mangosuhu Village, there were no township layouts available from the Surveyor Generals Office. A Development Framework Plan was prepared for the area in 2001, in terms of which potential erven and zoning were proposed and brought through in the draft Urban Scheme proposals dated April 2004.

4.6.3 **Urban Settlements**

The e'Dumbe Municipality is comprised of the town Paulpietersburg, the industrial area, Dumbe Mountain and substantial townlands to the south and west. The Paulpietersbug area been classified as a Primary Urban Node in terms of its location and economic opportunities.

This urban centres serves as a link between the areas outside of e'Dumbe and the expansive commercial agriculture as well as the dispersed rural settlements located at the peripheral areas with marginal economic development potential.

In comparison to the surrounding hinterland, towns generally have a higher level of social and infrastructure services, higher concentrations of administrative and business infrastructure and hence, towns normally fulfil the role of service centre to the surrounding hinterland.

4.7 ENVIRONMENTAL ASSESSMENT *(Refer to map 3 &4)*

South Africa has ratified the International Convention on Biological Diversity, which commits the country, including KwaZulu-Natal, to develop and implement a strategy for the conservation, sustainable use and equitable sharing of the benefits of biodiversity. In terms of the Constitution of South Africa, KwaZulu-Natal has responsibility for the function of nature conservation in the province, except for national parks, marine resources and national botanical gardens, and concurrent responsibility for the environment.

The Biodiversity Bill also requires Provincial Authorities together with the Department of Environment and Tourism, to compile and implement a 'Bioregional Plan' for the province that ensures that a minimum area of each bioregion with all its representative ecosystems is protected. The results of such a planning process have both strategic planning value as well as reactive value in the event of a change in land use being proposed. Thus, the opportunity arises to have a significant input into the environmental component of the Municipal Integrated Development Plans, and via this mechanism make a meaningful and positive contribution to environmentally sensitive development in the province.

In essence important areas of environmental significance need to be identified to protect and preserve valued ecosystems, natural habitats and special case areas in order to minimise negative impacts. In terms of land use management, the specific ecosystems and vegetation communities that require environmental management are wetlands, grasslands, and indigenous forests that contain the habitats of important species. It should be noted that environmental management need not be limited to the protection/preservation but also areas may be identified for opportunities that a particular environment may provide such as the rehabilitation of wetlands, eco-tourism opportunities etc.

One of the development issues in the municipality is the promotion of LED through agriculture and tourism. There are also various projects associated with settlement growth through the implementation of Land Reform and Housing programmes. Therefore it is essential that while accommodating these challenges, environmental assets associated with the municipality are not undermined.

4.7.1 Irreplaceability Analysis

The first product of the conservation planning analysis in C-Plan is irreplaceability map of the planning area, in this case the province of KwaZulu-Natal. This map is divided by 2km grid cells called 'planning units'. Each cell has associated with it an 'Irreplaceability Value' which is one reflection of the cells importance with respect to the conservation of biodiversity. Irreplaceability reflects the planning units ability to meet set 'targets' for selected biodiversity 'features'. The irreplaceability value is scaled between 0 and 1.

Irreplaceability value – 0. Where a planning unit has an irreplaceability value of 0, all biodiversity features recorded here are conserved to the target amount, and there is unlikely to be a biodiversity concern with the development of the site.

Irreplaceability value – 1. These planning units are referred to as totally irreplaceable and the conservation of the features within them are critical to meet conservation targets. (EIA very definitely required and depending on the nature of the proposal unlikely to be granted).

Irreplaceability value > 0 but < 1. Some of these planning units are required to meet biodiversity conservation targets. If the value is high (e.g. 0.9) then most units are required (few options available for alternative choices). If the value is low, then many options are available for meeting the biodiversity targets. (EIA required and depending on the nature of the proposed development, permission could be granted).

4.7.1.1 C-Plan and Minset

Minset is a function or tool within C-Plan (Conservation Planning Software) that is used to identify a 'minimum set' of sites (planning units) that would fulfil the aim firstly of achieving the conservation targets within a number of constraints that can be set by the user e.g. avoid highly productive agricultural land, or land adjacent to major highways. It presents the most efficient solution to achieving conservation targets and other land use constraints. The Minset output map shows areas that are already protected, 'Mandatory Reserves' and 'Negotiable Reserves'. Mandatory reserves are those areas that appear as totally irreplaceable on the irreplaceability map, since there are no other alternatives for achieving the conservation targets. Areas identified as negotiable reserves are the areas that the Minset function returns as the most efficient for achieving targets and constraints. However there are alternatives to achieving the targets and constraints but with less efficiency, and hence the designation of this area is still negotiable.

In using the results of the Minset analysis for impact assessment and incorporating recommended areas into regional and local plans, planners need to proceed with caution. While mandatory reserves (totally irreplaceable areas) must be incorporated to meet conservation targets, negotiable reserves need not. However with respect to the latter, if an area is rejected for incorporation into the conservation network, landscape planning cannot end there. For the planning cycle to be completed in this respect, the planner must identify and recommend the incorporation of alternative sites that will allow the targets for the affected biodiversity assets to be satisfied. This will involve the rerunning of the Minset analysis with the initially excluded site removed from the analysis, and is what makes C-Plan a truly interactive and iterative planning tool.

4.7.2 River System, Wetlands, Dams and Flood lines

The e'Dumbe Municipality is very well watered with many perennial rivers and streams and a large number of farm dams. A major impoundment on the Bivane River, the Paris Dam is also partially within the area. There should be demarcation of the 1:100 flood lines for all watercourses to control future development within these zones. The prohibiting of all future development within this area should be subject to Environmental Impact Assessment (EIA'S).

It must be stressed that wetlands identified over and above these maps should be subject to the same guidelines:

(i) Infilling, drainage and hardened surfaces (including buildings and asphalt) should not be located in any of the wetland zones (i.e. permanent, seasonal and temporary) such activities generally result in significant impacts on a wetland's hydrology, hydraulics and biota and on the goods and services wetlands provide.

(ii) Hardened surfaces and erven should be located at least 15 m outside of the outer boundary of the seasonal/permanent zone (Note: if the width of the outer temporary zone is greater than 15m and Item 1 above is met then this requirement would automatically be met). The seasonal and permanent zones generally have surface water for extended periods. In the case of seasonal zones, it may be for most of the wet season and in the case of permanent zones, it may be throughout the year. A buffer is required between areas potentially generating non-point source pollution and such areas characterized by surface water.

(iii) Extension to the buffer in localized areas should also be included to minimize the impact of concentrated stormwater run-off into the wetland. Stormwater outflows should not enter directly into the wetland. A predominantly vegetated buffer area at least 20m wide should be included between the stormwater outflow and the outer boundary of the wetland, with mechanisms for dissipating water energy and spreading and slowing water flow and preventing erosion. This buffer is particularly important when the catchment feeding the stormwater drain comprises predominantly hardened surfaces. Extensive hardened surfaces in the catchment and stormwater drains significantly increase the intensity of stormwater runoff, which increases the risks of erosion in a wetland. In addition, urban stormwater runoff is often polluted. A buffer is therefore required to reduce the energy and erosive power of the stormwater and to decrease the level of pollutants in the runoff before it enters the wetland.

(iv) Where the wetland has a particularly high biodiversity value, further buffering may be required, the width of which would depend on the specific requirements of the biota. This should be determined in consultation with Ezemvelo KZN Wildlife. The value of a wetland for biodiversity derives not only from features of the wetland but also from the quality of natural, non-wetland areas adjacent to the wetland, as many wetland dependent species such as the giant bullfrog (Pyxicephalus adspersus) require both wetland and non-wetland habitat.

(v) If a road crossing is planned in a wetland, first seek an alternative route. If this is not available then ensure that the road has minimal affect on the flow of water through the wetland (e.g. by using box culverts rather than pipes). Do not lower the base level of the wetland or any stream passing through the wetland. Ensure an adequate buffer is present to deal with run-off from the road (see Item 3 above). During construction, minimize disturbance of the wetland at and adjacent to the road crossing site. Road crossings may potentially greatly modify local water flow patterns in a wetland. In addition to having a damming or draining effect on the flow upstream of the road, roads which do not allow for the adequate passage of water may concentrate flow downstream, increasing the erosion hazard and drying out this portion of the wetland. A lowering of the base level increases the gradient in the wetland, thereby increasing the speed of water flow and its erosive potential and the extent to which it contributes to lowering the water table.

(vi) Where a road runs alongside a wetland and it intercepts natural hillslope runoff into the wetland, the road should be set back from the boundary of the wetland by at least 20m and feed-off points should be included at frequent intervals along the road (at least every 100m) and the outflows of these should conform to the requirements of the stormwater outflows (given in Item 2 above). A road running alongside a wetland can strongly affect the natural hill slope runoff into the wetland by intercepting this runoff and concentrating it in localized entry points. The fewer the feed-off points into the wetland and the less protected they are, the more severe this effect will be.

(vii) Where development (e.g. hardened surfaces, infilling and drainage) in a wetland is unavoidable then the resulting impacts must be mitigated. In many cases, off-site mitigation may be the only means of achieving satisfactory mitigation. The cumulative loss of wetlands in South Africa is already very high (see Section 1.1) and the continued net loss of wetlands needs to be prevented. Invasion of a wetland by alien plants may considerably reduce the integrity of a wetland.

(viii) Where any disturbance of the soil takes place in a wetland, clear alien plants which establish and follow up for at least 2 years thereafter. Disturbance of a wetland favours the establishment of alien plants, which require long-term control.

(ix) Where the infiltration rate of a wetland's catchment is naturally high and the wetland is maintained predominantly by groundwater input, at least 60% of the wetland's catchment should remain as permeable surfaces in a residential area and preferably at least 30% in an industrial/commercial area. Where the level of development is very high, reduced surface runoff can be promoted through mechanisms such as porous pavements (The inclusion of these mechanisms in areas dominated by hardened surfaces is generally sound catchment management practice and should be encouraged widely). Failure to maintain groundwater input to a predominantly groundwater-fed wetland will considerably alter the hydrological regime of the wetland, thereby compromising its integrity.

(x) The onus is on the developer to identify and delineate all wetlands in the project area at a finer scale depending on the proposed development. Mapping at a

minimum scale of 1: 10 000 is generally require .in order to account for the impact of a development adjacent to a wetland, it is essential that the boundary of the wetland be mapped. Any wetlands identified on the ground should be delineated and mapped by the municipality on an ongoing basis.

(xi) Any development must comply with the requirements of the National Water Act. Through the concept of the "ecological reserve", this act makes provision for ensuring water of acceptable quantity and quality for maintaining the ecological functioning of wetlands and river systems. While wetlands assist in enhancing water quality, they should not be relied upon as an easy substitute for addressing pollution at source, as this may lead to serious impacts to the wetland systems.

(xii) Access to wetlands by off-road vehicles, man and livestock, should be as far as possible prevented.

(xiii) Development within the floodline or within 32m of a river or stream should be avoided and vegetation in this zone should be conserved.

4.7.3 Indigenous forested areas

These areas are not mapped however, all areas of thornveld are. All areas under indigenous forest and properties with indigenous trees should be subject to the following guidelines:

- No indigenous trees should be removed without authorization from DWAF who are responsible for protection of protected tree species.
- No undergrowth should be removed or the natural forest structure interfered with in any way as; when the forest undergrowth is removed, the large trees left standing often slowly die due to drought. Authorization must be obtained from DWAF prior to any clearing of both trees and under story of indigenous forested areas.
- All forest along streams and rivers must be conserved to prevent bank erosion.
- Wherever possible, patches of forest must be linked to form a continuous network and thus a path of migration for flora and fauna present (bushbuck, duiker, birds and so on) this would be easiest along existing corridors like streams and rivers.
- Forest trees should be left to screen development to improve stormwater drainage and aesthetics.
- Developers should be encouraged where possible to maintain any trees on site as part of the layout of the development.

4.7.6 Areas of High Biodiversity Value

These areas are identified in the mapping as High Importance Landscapes, Ecosystems or Species. Further areas of high irreplaceability and areas in the minset data set designated as non-negotiable or negotiable reserves should be categorized in this category.

- Should there be a change in land use or development density (in terms of the Town Planning Scheme and as listed in Schedule 1, Section 1, or 2 of the Environmental Conservation Act (ECA) of 1989), or the upgrading or construction of structures and facilities as listed in the ECA, the vegetation in high biodiversity areas should not be cleared until a "botanical assessment" has been undertaken and approval granted by the Department of Agriculture and Environmental Affairs approved.
- The local authority should negotiate with the property developer to incorporate land not to be used for development into Conservation Reserves. This can be done when permission for development is being sought.
- Earthmoving equipment must be prohibited from the site until the environmental assessment has been approved and the vegetation to be conserved has been demarcated.
- The Local Council should not plant exotic trees or shrubs in areas of this category.
- Sub divisional applications should be assessed in the light of proposed usage and the effect it would have on areas of high biodiversity value.
- Landowners should be made aware of the high biodiversity value of their land before purchase.
- Landowners should be made aware of their responsibly to maintain and manage the vegetation on their land.
- The local council may need to provide assistance in the form of advice to landowners in high biodiversity value areas.

4.7.7 Nature Reserves

These areas are mapped on both the Cplan and Minset Maps.

- This is with a view to preventing damage to conservation areas. The fencing used should be appropriate and should allow for the movement of small animals that may be found in this area, for e.g. Duiker, weasel.
- In the conserved areas, only nature-related recreation and education shall be permitted, such as bird-watching, walking and canoeing
- The introduction of any exotic plants to conservation areas must be prevented and any existing alien invasive vegetation should be removed.

4.7.8 Prime Agricultural Land

This category is indicated on the Agricultural potential map as areas of moderate to high agricultural potential. It is important in these areas to encourage farmers to conform to the following management recommendations:

- Any subdivision of land within this category should be subject to support by the Dept of Agriculture.
- Stop soil erosion by terracing, strip cropping and repairing donga's;
- Add organic matter to soil (with "green manure" cover crops, compost, manures, crop residues, organic fertilizers);
- Plant wind breaks in the form of indigenous trees to prevent wind erosion;
- Rotate crops to ensure that nutrients in the soil are not depleted by monoculture;

- Grow crops appropriate to the soil type and climate;
- Test soil and apply manures only when necessary;
- Compost organic waste;
- Introduce or enhance existing populations of natural predators, pathogens; insects, and other biological control agents;
- Maintain healthy soil (prevents soil-based diseases) and encourage the use of ectomycorrhiza to improve nutrient and water uptake in crops;
- Grow crops and crop varieties well-suited to climate and soil; and
- Leave habitat (field margins, unmowed strips, pond and stream borders, etc.,) for wildlife therefore providing wildlife corridors.

4.7.9 Environmental Priorities

- The natural environment can be regarded as the primary factor for sustainable development in the e'Dumbe Municipality. All the identified recourses with potential to generate economic development are directly dependent on the condition of the natural environment.
- Current inappropriate agricultural practices and human activity are the main threats to future sustainability of development in e'Dumbe.

4.7.10 Required Interventions

Areas identified as areas of high irreplacebility and areas in the minset data set designated as non-negotiable reserves should be categorized in this category, Further the environmental atlas areas within the municipality are almost entirely biodiversity related and therefore these areas are included in this category. These areas are somewhat limited by land transformation in the municipality and include only small portions of the northern areas and south western of the study area.

- This zone represents areas of natural vegetation and therefore any transformation of this area greater than 3 Ha should be subject to impact assessment. Further any development greater than 1 Ha would be subject to Basic Assessment and any development greater than 20 Ha would be subject to Full Environmental Impact Assessment.
- The local authority should negotiate with the property developer to incorporate land not to be used for development into Conservation Reserves. This can be done when permission for development is being sought.
- The Environmental Impact Assessment required for priority 1 zones should include a biodiversity assessment of the site and it biological value.
- The layout of the development should take biodiversity impacts and mitigation into account and as such should avoid areas of high biodiversity value.
- The local authority should negotiate with the property developer to incorporate land not to be used for development into Conservation Reserves. This can be achieved as part of authorization for development on submission of the plans.
- When building plans are submitted to the local authority for approval, they shall indicate whether the development constitutes a listed activity and if so include a

copy of the Record of Decision (ROD) issued by DAEA and an Environmental Management Plan (EMP) where required by the ROD.

- No construction of a listed activity under the NEMA EIA regulations may begin without authorization from DAEA, the Municipality in it's development control capacity should not, under any circumstances, authorize any listed activity until such time as DAEA has given authorization for the activity to go ahead.
- Any unauthorized development should be reported immediately to the DAEA.
- The width of survey paths shall be kept to the absolute maximum of 1 metre.
- Where areas have been set aside for conservation in the layout, such areas will have to be demarcated. This should be done before building starts, sites must be staked and should be fenced or cordoned off with Chevron Tape. This is with a view to preventing damage to conservation areas during construction and operation. The fencing used should be appropriate and should allow for the movement of small animals, which may be found in this area.
- In the conserved areas, only nature-related recreation and education shall be permitted, such as bird watching, walking and canoeing. These areas should be left as undisturbed as possible.
- Exotics should be avoided in landscaping of developments.
- Invasive aliens should be eradicated as part of landscaping and management plan for the development.
- As far as possible, medium density housing development in this zone should be clustered in order to minimise visual impact and the amount of land needed. This reduces development costs and also makes land available for conservation or open space purposes. Further advantages are wind protection and better controlled access the development area
- Landowners shall be made aware of the priority status of their land before purchase. Estate agents in the area could assist in this regard. The clearance certificate issued to each purchaser shall make note of the priority status, for the purchaser's information, should the estate agent not have raised the issue.
- Earthmoving equipment must be prohibited from the site until the environmental assessment has been approved and the vegetation to be conserved has been demarcated.
- The Local Council should not plant exotic trees or shrubs in areas of this category.
- Sub divisional applications should be assessed in the light of proposed usage and the effect it would have on areas of high biodiversity value.
- Landowners should be made aware of the high biodiversity value of their land before purchase. Landowners should be made aware of their responsibility to maintain and manage the vegetation on their land. The local council may need to provide assistance in the form of advice to landowners in high biodiversity value areas.

4.8 AGRICULTURAL ASSESSMENT *(Refer to map 5)*

4.8.1 Physiography and geology

The major physiographic or macro-relief features are:

- the high mountainous country of the Elandsberg and Ngcaka scarps in the east of the area. These are the steeply sloping scarp edges of what Turner (in Phillips, 1973) has termed the Baleleberg-Skurweberg Plateau at altitudes of 1 700 m or more.
- the undulating plateaux of the Makateeskop and Ndlondlolwane plateaux at altitudes of about 1 200 - 1 500 m.
- the dissected plateaux of the Piensrand and Mahlone areas of mainly rolling to rugged relief at altitudes of 1 000 - 1 200 m.
- the Upper Pongola and Bivane valleys of gently undulating land at altitudes mainly of 900 – 1 200 m.
- a shelf of undulating land above the lower Pongola valley or gorge at an altitude of 800 –
- 900 m in the vicinity of Hartland Mission.
- the lower Pongola and Bivane Valleys of deeply incised and rugged terrain at altitudes of 500 - 900 m.

These physiographic features are closely related to the underlying geology as follows:

- on the Elandsberg and Ngcaka scarps : mainly dolerite and shales.
- on the Makateeskop and Ndlondlolwane plateaux and adjacent scarps: mainly sandstones and shales of the Vryheid formation with some coal and with large intrusions of dolerite.
- on the dissected Piensrand and Mahlone plateaux: mainly basic volcanic rocks like basalt, diorite and gabbro.
- on the Hartland shelf : mainly basalt, shale and quartzite.
- in the upper Pongola and Pivane valleys: mainly granitic rocks.
- in the lower Pongola and Pivane valleys: mainly metamorphic rocks like quartzite and schists.

The soil patterns in the area are closely related to these physiographic and geological factors.

4.8.2 Climate

There are some 18 official weather-recording stations in the area, but only one of these, Paulpietersburg, also records a full range of climatic data i.e. temperatures, relative

humidity, cloud cover, precipitation, thunder, hail and frost. As the Weather Bureau now charges for access to its climatic records and as no budget was available for this cost, it has not been possible to have access to this basic information. Instead, the climatic data provided by the Department of Agriculture (Camp, 1995) for those of their Bioresource units which fall within the area have had to be used.

These suggest the following climatic patterns for the physiographic units.

Physiographic Unit	Representative Bioresource Units	Mean Annual Climatic data				Combined Climatic limitations
		Rainfall (mm)	Temp.(EC)	Evap. (mm)	Frost risk	
Elandsberg and Ngcaka scarps	Yd 3	1 070	15,1	1 790	Severe	Moderate
Makateeskop & Ndlondlol-wane plateaux	Yc 2 Xc 1a	918 859	16,8 16,4	1 868 1 823	Moderate	Slight
Piensrand and Mahlone plateaux	Wc 3a Uc 3b	800 744	17,2 17,8	1 864 1 864	Light Light	Slight Moderate
Upper Pongola & Bivane Valleys	Wc 3a	800-900	17,2	1 864	Light	Slight
Hartland Shelf	Vc 5	797	18,4	1 905	Light	Moderate
Lower Pongola & Bivane Valleys	T Ub 1	678	19,2	1 923	Occasional	Severe

From an agricultural point of view the important aspects of these climates are:

- the good rainfall of those areas with a mean annual rainfall of 800 mm or more (800 mm is normally taken as the threshold value for reliable dryland cropping).
- the risk of frost which is severe on the Elandsberg plateaux but elsewhere light to moderate.
- the mean annual temperatures which increase by some 4EC within the area and the related factor of increasing evaporation with decreasing altitude.

Overall it may be said that BRUs Yd 3, Yc 2, Xc 1a and Wc 3a are good agricultural climates, though Yd 3 has a rather short summer followed by a severe winter. The other climates: Uc 3b, Vc 5 and T Ub 1 are all rather too dry for good cropping.

According to Phillips= Bio-climatic classification of Natal (Phillips, 1973) there are 4 Bioclimatic units in the area.

- 4a: the Highlands to Sub-montane sub-humid climate over the Elandsberg.
- 6a: the Moist Upland climate of the Makateeskop, Ndlondlolwane and Piensrand plateaux and the upper valleys of the Pongola and Bivane rivers.
- 8: the Dry Upland climate on the Mahlone plateau and the Hartland shelf.
- 10c: the Interior Lowland climate in the Lower Pongola and Pivane Valleys.

4.8.3 Vegetation

According to the Bioresource Group classification of the vegetation of KZN by Camp (1996) as used by the Department of Agriculture, there are 5 main veld types in the area as follows:

- Moist Highland sourveld (MHS) on the Elandsberg plateau and scarp.
- Moist Transitional Tall Grassveld (MTTG) on the Makateeskop and Ndlondlolwane plateaux and the Upper Pongola and Pivane valleys.
- Moist Tall Grassveld (MTG) on the Piensrand plateau.
- Dry Tall Grassveld (DTG) on the Mahlone plateau and the Hartland shelf.
- Dry Zululand Thornveld (DZT) on the lower, more incised parts of the Pongola and Bivane valleys.

The Table below summarises the main characteristics and management requirements of these various veld types.

Veld management characteristics and requirements of main veld types.

	MHS	MTTG	MTG	DTG	DZT
Average grazing capacity (Ha per AU*)	1,6	1,8-2,1	2,5	3,4-4,2	3,7-4,6
Permissible burning dates	1/8-30/9	1/8-30/9	1/8-30/9	15/8-31/10	15/7-30/9
Recommended grazing cycle	30	30	42	63	63
Period of stay for 4 camp system	10	10	14	21	21
Period of absence for 4 camp system	20	20	28	42	42

* *An AU or Animal Unit is defined as the grazing equivalent of a 450 kg steer which consumes 10 kg of dry matter a day.*

	MHS	MTTG	MTG	DTG	DZT
Length of grazing season (days)	250	250	275	300	300
Recommended frequency of rest	1 in 4 years	1 in 4 years	1 in 4 years	1 in 4 years	Assess on site

Although the natural vegetation at the higher altitudes is, or was, mainly grassland much of it is now under plantations of wattles, gum and pine. That much of the area has been found to be suitable for forestry is not surprising as Acocks (1975) considers that most of this area was originally under forest or scrub forest. Where the veld remains it is dominated by *Hyparrhenia hirta* but with the associated species varying according to veld type.

4.8.4 Soils

The overall soil pattern in the study area has been strongly influenced by two dominant soil forming factors: climate and parent material.

In the higher rainfall areas above 800 mm per annum like the Elandsberg scarp and the Makateeskop plateau the soils tend to be deep, well-drained, fine-textured and leached with somewhat sandier textures where derived from sandstone or granite but more clayey where formed from dolerite. In terms of the South African Soil Classification system the most common soils are those of the Clovelly and Hutton forms in gently-sloping upland areas with Glenrosa soils on steeper slopes and Katspruit or Cartref soils in vleis and depressions.

Most upland soils on the Makateeskop plateau and the Upper Pongola and Bivane valleys are high potential arable soils being generally deep and well-drained with good physical properties. Chemically, however, these soils tend to be leached, due to the high rainfall, and therefore acid and low in plant nutrients. They may consequently need to be limed and to have their nutrient status built up by appropriate fertilizer treatments. When this is done they are highly productive cropping soils.

In the drier areas, where mean annual rainfall is below 800 mm, the soils are generally shallower and less leached, often with strongly structured subsoils of poor permeability. Typical soil forms in these areas are those of the Hutton, Shortlands and Avalon forms among the better upland soils but often with undesirable duplex soils of the Valsrivier, Swartland, Sterkspruit and Estcourt soils in depressions and seepage zones. Dark-coloured heavy clays of the Arcadia and Bonheim forms are also common on the basic rocks.

These drier climate soils, because they are less leached, tend to have higher levels of plant nutrients than in the high rainfall areas but often to have less desirable physical properties such as restricted subsoil permeability and poor moisture holding characteristics. Careful soil selection is therefore especially important in these areas.

4.8.5 Water resources

The e'Dumbe Municipality is very well watered with many perennial rivers and streams and a large number of farm dams. A major impoundment on the Bivane river, the Paris Dam is also partially within the area. There are also a large number of perennial springs and several important wetland areas.

The main rivers draining the area are the Pongola river and its main tributaries the Pandana, Bazangoma, Lenjane, Mahashini, Mandlana, Ntombe, Bilanyoni, Nkemba and Ozwana rivers; and the Bivane river and its larger tributaries: the Opuzane, Gwakamakazi, Nsingani, Mbinkulu, Ncwayi, Mpemvana, Mbilane, Mawele and Bivanyana rivers and Balladon Spruit.

All of these rivers are potentially capable of providing water for irrigation within the area. the irrigation potential of the area will, however, tend to be determined by three main considerations:

- the amount of water available from river flow during the dry season (the period of low flow, usually in August - September).
- whether there are constraints on the use of such water due to commitments to downstream users e.g. the irrigation farmers downstream of the Paris Dam.
- whether there are suitable soils within economic reach of the various rivers.

4.9 LOCAL ECONOMY

4.9.1 Income Levels

e'Dumbe municipality is stricken by poverty as more than half of the population (69%) earns a monthly income of R800 and less which is less than the medium of.

4.9.2 Employment Status

A large number of the municipal population indicates that there is very limited productivity levels within the municipality with only 8 542 people being employed and 35 722 people are unemployed and not economically active.

4.9.3 Employment per Sector

Farming/ Agriculture is the largest employment sector within the municipality as 26% of the working class are employed within this sector however there has been a decrease in this sector since in 1996 it was standing at 36.69%. Whilst there has been an increase in all the other sectors there is been a decrease in employment in the farming, mining, utitlies and transport sectors. The impetus for the decrease and increase within the different sectors need to be explored so that opportunities are exploited and creating a balance.

4.9.4 Skills Levels

In terms of skills levels elementary is the leading skill and has been since 1996 however there is a decline when comparing the 1996 figures of 39.37% and those of 2001 of 37.45%. In terms of professional there has been a major decrease of more than 6% as it was at 8.88% in 1996 to 2.57% in 2001, agriculture has also seen a rapid decrease of just below 6% however there is been positive growth in senior management, clerks and technical skills.

4.9.5 Sector Contribution to the GDP

Amidst the change in skills possessed by the inhabitants, agriculture remains the largest contributor in the municipals GDP, however this sector is experiencing a huge decline as it dropped from 28.54% in 1996 to 22.42 in 2004, and mining is another sector that has decreased in terms of its contribution by just below 6%. Wholesale and trade has increased its contribution by more than 5%.

4.9.6 Industrial Development

The development of the industrial sector generally serves as a backbone for economic development, especially in the modernised economies. The capacity of this sector to create job opportunities through promoting value adding activities to the locally sourced resources cannot be underestimated. The e'Dumbe IDP has identified the importance of promoting manufacturing in order to promote industrial development in the area. Currently, few processing plants exist in the area. The still water bottling plant owned by Coca-Cola is situated in e'Dumbe; manufacturing of coffins also takes place in this area. The contribution of this sector to the local GGP could not be quantified, but the observation of number of industrial activities suggests that, it has a very minimal contribution.

The source of concern is the fact that most of locally found resources are transported outside the area for further value adding processes. Therefore, this leaves a challenge of identifying workable strategies that should stimulate this sector and bring much needed growth and development in the e'Dumbe economy.

4.9.7 Trade and Commerce

The trade sector is defined as the resale (sale without transformation) of new and used goods to the general public. The wholesale and retail trade sector accounts for around 14% of total output in the local economy. In employment terms this sector has been steadily increasing in its contribution to employment from 5% in 1996 to 8% in 2000 and currently stands at 10% of total employment in 2004[Quantec (Pty) Ltd].

It is an important sector in terms of job creation and has low entry requirements for entrepreneurs. Trade is usually indicative of a more developed economy. Factors that influence trading activities include the availability of alternatives, household incomes and the presence of other well established trade centres. Incomes in e'Dumbe are low with 69% of the population earning less than R800 a month, this seriously constrains the growth of this sector. Vryheid is also a more established trade and economic centre and many residents of e'Dumbe travel there to do their shopping, for example there are currently no retail clothing stores in the study area. Here a „buy local" campaign may encourage residents to spend their money in the study area and thus prevent excessive leakage to other areas. The IDP has identified the possibility of establishing a shopping centre at the entrance to Dumbe township which would greatly stimulate and encourage trading activities in the area. Paulpietersburg/Dumbe serves as the economic, trade and service centre of the municipality and thus this sector is fairly well represented, however in the poorer tribal settlements of Simdlangentsha trading activities are limited and probably relegated to informal activities. Mangosuthu has been identified as a primary development node in terms of the spatial development framework and thus this would be a key area to try and develop trading activities by, for example, establishing markets and the associated infrastructure.

4.9.8 Tourism

Increasing significance is being placed on this sector in the context of South Africa given this sector's potential as an income and employment generator. The main thrust of the Zululand District Municipality's strategy for developing tourism in the region is to improve tourism infrastructure in conjunction with uplifting local communities. Zululand as a tourist attraction has many opportunities available to it. A study by Ecotourism of tourist perceptions showed that 70 to 90% of the tourists that visited KZN came to experience the climate, wildlife and landscape. Over 50% of foreign tourists interviewed said they would like to have a meaningful experience of Zulu heritage and culture. Thus the district of Zululand is well placed within the tourist market in terms of its attractions and what it can offer as a tourist destination.

Currently 50% of tourists to e'Dumbe are German, attracted by their cultural heritage and the unique historical German character of the area. Recently the study area has also

been seeing more Dutch tourists, in the line of about 360 a year [Zululand LED]. The study area has a Publicity Association and has good facilities in terms of tea gardens, restaurants and lodges. e'Dumbe can provide not only scenic surroundings and quaint towns with character and interesting architecture but also has a number of cultural and eco-tourism attractions. These various attractions can be marketed together as a complete experience. Nearby attractions include game reserves, the battlefields and dams. The study area also has various community tourism initiatives, for example rural tours to Bilanyoni. The rural market atmosphere that develops naturally on pension pay days could also be promoted to tourists [Zululand LED]. The Country Culture Crescendo was an innovative promotional initiative in conjunction with the town of Vryheid where various tourist events and attractions would be co-ordinated and organised for a two week period, ensuring there was something for tourists to do or see every day. This needs to be restarted.

Currently the established tourist attractions in the area are:

- ✓ The unique German culture and festivals, especially in the Luneberg area.
- ✓ The quaint town of Paulpietersburg with interesting architecture and historical significance with a guided dorp trail of the historical buildings
- ✓ The Natal Spa – a resort whose main attraction are its hot sulphur springs but which also offers a range of activities including horseriding, tennis and bird tours.
- ✓ It offers the desired Zulu cultural experience with a number of traditional Zulu kraals and villages that tourists can visit.

There is much potential for eco-tourism although not all of the study area's eco tourism attractions are adequately developed. However there is the Dumbe Mountain (which hosts paragliding events, has a walking trail and abundant birdlife); Bivane Dam, another rich birding area; the Engodini Mountain Crater which has a 4x4 trail, and the nearby Ithala game reserve.

It is a good birding area, with Natal Spa and Bivane Dam both included on the Zululand Birding Route.

4.9.10 Agriculture

Agriculture is well established and quite diverse in the study area and represents the greatest portion of economic activity. The agricultural potential of the study area ranges from areas of high potential in the eastern half to low and very restricted in the western edges of the municipality which is where the majority of the population is located. The commercial farming areas have high potential with regards to both crop production and livestock farming and a wide range of agricultural products can be produced within the municipal area. Major farming activities include maize, sugarcane and livestock farming. There is an increasing trend in the study area towards game farming. Wagendrift is a well know game ranch that is popular with foreign tourists. There are also bird farms that breed and sell birds for the export market as well as a diverse range of other products that are being farmed.

The study area also has extensive forestry, another important contributor to the economy. The two major forestry firms in the area are Mondi and Central Timber Cooperative Limited, growing gum, wattle and pine. Despite the numerous timber plantations in the study area there is currently very little beneficiation or value adding done to the primary products within the municipality. Downstream opportunities should be identified and explored for their ability and potential to create more jobs in this sector. The potential for small holder forestry development such as out-grower programmes should also be investigated. Communal areas in Simdlangentsha that were suitable for small scale timber production were identified but nothing was done to develop this project as the area was considered to be too far from the pulp mill in Richards Bay.

Small scale agricultural farming also needs to be promoted and developed in order to provide job opportunities and create sustainable livelihoods. Community gardens are a popular way of reducing poverty and organising women. The Department of Agriculture's Xoshindla Programme concentrates on establishing community gardens and small irrigation schemes. The e'Dumbe IDP has also identified the need to provide small scale farmers with equipment such as tractors, generators and irrigation equipment, better access to seeds and fertilizers and support for small farmers. There was a proposal for a Farmers Support Office to be established. Support for small farmers can lead to job creation and the development of Somme's. The KZN Department of Agriculture and Environmental Affairs has recently established a number of support programmes directed at the agriculture sector, with particular focus on the development of co-operatives. This can be seen within the context of the Provincial Growth and Development Strategy (PGDS) to fight poverty and unemployment in KZN. The five key areas in which support will be focused are the provision of animal handling facilities, irrigation interventions, fencing, shed storage and water provisioning.

4.9.11 Informal Sector

The informal sector especially on the retail side has grown tremendously during the past years. However, the shrinking buying power of local communities has had an adverse effect on this sector. During the workshops it emerged that there is a great interest of graduating from the informal to formal business operations. On the other hand, most of the entrepreneurs in this sector say they operate at a survival level. This requires a major intervention through small business development agencies to ensure that there is direction and growth taking place in the sector.

The contact has been made with the provincial informal sector organisation to establish the structure and size of the informal sector in e'Dumbe. However, such information has not come forth to strengthen the analysis and the understanding about the sector.

4.9.12 BEE and SMME Development

The SMME sector is of particular significance given e'Dumbe's high unemployment rate and large areas of settlements with very limited economic development.

Entrepreneurial capacity is however limited by poor education and limited training opportunities. Most people leave the area to study or get formal training of some kind elsewhere and then do not come back with those acquired skills, so the aim would be to train them in the municipality in order to retain those skills and the economic benefits that would derive there from. In this regard skills development centres should be established, particularly in local areas so that local people and those with the greatest need can access them as well. In Paulpietersburg there is already an existing building earmarked for skills development and form which computer literacy programmes are being run.

There are numerous opportunities that exist within this sector, especially for business related to agro-processing and beneficiation of timber, of which there is currently very little in the municipality. Opportunities have also been identified in the textiles sector making school clothes.
To promote the SMME sector in e'Dumbe, the feasibility of setting up a small business hive in Paulpietersburg/Dumbe should be investigated as well as local business support centres that are situated in key nodes so as to serve the poorer parts in the east of the municipality as well.

4.9.13 The LED Identified Thrusts (8) for the e'Dumbe Municipal area's economy

THRUST 1: DEVELOPMENT OF AGRICULTURAL SECTOR AND ACTIVITIES
THRUST 2: INDUSTRIAL DEVELOPMENT
THRUST 3: SMME DEVELOPMENT
THRUST 4: TOURISM AND CULTURAL DEVELOPMENT
THRUST 5: DEVELOPMENT OF LOCAL ECONOMIC ACTIVITIES
THRUST 6: DEVELOPMENT OF THE MUNICIPALITY AND ITS INTERNAL STRUCTURE
THRUST 7: HUMAN RESOURCE DEVELOPMENT
THRUST 8: DEVELOP TRADE AND COMMERCE IN THE CBD

5.0 SWOT ANALYSIS

STRENGTH	WEAKNESS	OPPORTUNITY	THREATS
Primary nodes are well developed in terms of infrastructure and services, important for attracting businesses to the area.	Low education and skills levels.	Develop various tourism projects and initiatives.	Crime.
Widescale and diverse agriculture sector.	Limited employment opportunities.	Agro-processing and timber beneficiation opportunities.	High incidence of HIV/AIDS.
Extensive forestry in the study area.	Poor road signage in many areas.	Many latent business opportunities to be explored such as coffin making, low cost furniture, textiles, services etc.	
Rich in natural resources	Insufficient marketing of area and its attractions.	Strengthening of LED institutions	
Located on good transport link from major centres Gauteng to Richards Bay	Low levels of services and facilities in tribal settlement areas.	Education and skills development	
Clean and attractive town.	Spatial profile of the district, the poorer settlements are located on land with the poorest agricultural quality.	SMME and BEE development	
		The Paris Dam	

6.0 APPROACHES TO FORMULATING THE SDF

6.1 Format of the SDF

A Spatial Development Framework is a plan that seeks to guide the overall spatial distribution of current and future desirable land uses in order to give effect to the Vision, Goals and Objectives of the Municipal IDP.

It is a plan that outlines the Developmental Principles and policies that are applicable in the area in relation to physical space.

Conceptually, the treatment is that of identifying the different "planning interventions".

A simple matrix, as indicated below, identifies each planning element by a three-way planning treatment.

Type of activity	EXISTING	IMPROVE	NEW
Treatment	Maintain Ltd Improvement	Consolidate Realign Formalise Upgrade	Infill "Greenfields

Examples:

A. Residential

Type of activity	EXISTING (Maintain)	IMPROVE (Consolidate, Upgrade, etc)	NEW (Infill, "Greenfields)
Formal Residential			
Informal Residential			
Rural			

B. Roads

Type of activity	EXISTING (Maintain)	IMPROVE (Upgrade, Realign,)	NEW
Mobility / Ltd Access Rd			
Major Arterial			
Minor Arterial			

C. Nodes

Type of activity	EXISTING (Maintain)	IMPROVE (Consolidate)	NEW
Primary Node			
Secondary Node			
Tertiary Node			

In this sense, each basic element has a potential of 9 elements on the plan Key

7.0 EDUMBE SDF REVIEW – SUSTAINABILITY APPRAISAL

7.1 WHAT IS A SUSTAINABILITY APPRAISAL?

The Department of Agriculture, Environmental Affairs, and Rural Development (DAEARD) has provided a Sustainability Appraisal tool which it defines as follows (the entire Section is sourced and quoted from DAEARD, 2009):

7.1.1 Sustainability Appraisal [SA] provides a critical evaluation of the performance of a Plan against predetermined social, economic and environmental criteria so that the potential impacts of the Plan and be evaluated and it's performance can be improved. SA seeks to help inform decision-making by providing information on the potential environmental implications of policies, plans or projects.

7.1.2 SA's help to ensure that plans, strategies and proposals take into account the principles of sustainable development. The process permits a qualitative assessment of a plan, strategy, or proposal against independent sustainable development objectives.

7.1.3 Sustainability Appraisal can be an effective technique for integrating sustainability considerations into plan making and evaluation, and has the advantage of being quicker than standard Strategic Environmental Assessments, producing a less rigorous, though still valuable, broad analysis, usually in the form of a checklist with accompanying explanation. This allows fairly rapid assumptions to be made about the sustainability impact of individual policies and plans and, indicates where policy adjustments need to be made.

7.1.4 The SA checklist comprises a list of statements related to economic, social and environmental issues and concerns that are based on the Municipality's Environmental Policy, the National Environmental Management Act Principles and the Development Facilitation Act Principles. Adjacent to the statements column is a column that relates to the qualitative assessment i.e. whether the proposed plan, policy or proposal has a **Very positive, Positive, Neutral, Negative or Highly Negative** impact or effect against each statement.

7.1.5 An example of a positive impact might be the provision of work opportunities in close proximity to residential areas thereby reducing travel costs and impacts. A negative impact might be destruction of habitat through urban expansion. If due to the nature of the activity, a statement has no bearing on the activity concerned, then a Neutral or No Impact statement can be used.

7.1.6 A description of the potential impacts and effects on the sustainability criteria should be provided in the commentary column to justify the scoring of the potential effect or impact.

7.1.7 Sustainability Appraisal is not a rigid system but a practical approach to ensure that significant direct and indirect impacts of a programme are considered. It is important

not to labour over it. The level of resources involved in each appraisal should be directly proportionate to the policy or programme.

7.1.8 Individual Appraisal's should be done for the plan as a whole and for the major development changes or options proposed within the plan.

7.2 DETERMINATION OF SIGNIFICANCE OF IMPACT OR EFFECT:

The results of the appraisal for each criteria should be recorded using the following measures:

(i) ***Scale of effect:*** Will any effect be marginal or significant?

(ii) ***Timing of effect:*** Will the effect manifest itself in the short term or the long term?

(iii) ***Geographic scale:*** Will there be any trans-boundary effects (for example impacts on adjoining Municipalities, Provincially or Nationally)?

(iv) ***Rural / urban:*** Will there be differential impacts for rural and urban environments?

(v) ***Cumulative effects:*** Will there be any cumulative, secondary or indirect effects arising from the interactions of policies and proposals.

7.3 EVALUATION OF THE SDF PROCESS:

7.3.1 The development of the SDF should be considered against the generally accepted principles and processes of strategic assessment. A justification and description of how the process considered these key principles should be provided. Limitations and gaps in information should be highlighted to inform future planning and revisions of the SDF.

8.0 PROJECTS WITH SPATIAL IMPLICATIONS

HUMAN SETTLEMENT PROJECTS	DEPARTMENT OF SOCIAL DEVELOPMENT	
Tholakele Rural Housing Project	Ihawulesizwe Orphan Care	Gardening
Ophuzane Rural Housing Project	Inqolobane Club	Gardening
Mangosuthu Housing Project	Thandukuzenzela Club	Gardening
Ekhombela Housing Project	Thuthukani Poultry	Poultry
Dumbe Phase 3 Housing Project		

SPORTS AND RECREATION PROJECTS	MONDI AREA BASED PROJECTS
Building of new sport facilities.	Cattle Management Project
Construction of combination courts	Vegetable Project
	Bee farming Project
	Chakide – Sterkwater Farm (640.1ha)
	Hlatshwayo – Schaapkraal Farm, Kulspruit (202.4)
	Amahhohho – Moolman WPU
	Magidela – Smitsdrift Farm
	D.M. Zwane – Arlbeitlandgoed Farm

AGRICULTURAL PROJECT	
Project Name	**Commodity**
Sivazama	Landcare
thandanani	Vegetable production
Thulasibone	Vegetable production
Zamokuhle	poultry
ekuthuleni	poulrty
Thembalethu	poultry
Bellavista	poultry
masibambisane	vegetable
Khulani mazulu	vegetable
thembalomhkanathi	vegetable
Khulani	vegetable
ukuqedusizi	vegetable
inqolobane	vegetable
Lethintuthuko	vegetable
fundulwazi	vegetable
vulinqondo	Vegetable
Sukumani	vegetable
Phakamani	Vegetable
Kwa-dlamini	Dry-beans

imbokodo	Vegetable production
Isikhalisethu	poultry
Thembelezandleni	processing
Ubuhlebethu	Vegetable production
Musa	piggery
Thamsanqa	piggery
zamukuzenzela	Vegetable
Sbonangakho	Vegetable production
Sondlisizwe	Vegetable production
Phikelelani	Vegetable production
Vukuzithathe	vegetable
thandinhlabathi	vegetable

DEPARTMENT OF RURAL DEVELOPMENT AND LAND REFORM	
Project Name	**Property Description**
Palmietfontein	Portion 5 (of 4) of the farm Palietfontein No. 584
Welbedacht	Portion 3 of the farm Welbedacht No. 447
Bella Vista 15052	The farm Bella Vista No. 429
Amberg	The farm Amberg No. 16966
Mthethwa Community	The farm Witkop No. 221
Mthethwa Community	Portion 1&2 of the farm Vrijwilliger No. 222
Jabula	Portion 1 of the farm Jabula No 430
Gerust	Remainder of the farm of Gerust No. 361
Traktaat Farm	Portion 10 (of 2) of the farm Traktaat No. 200
Mthethwa / Leilifontein	The farm Leliefontein No. 220
Paddafontein	Portion1 & remainder of the farm Paddafontein No.17081; Portion 4 of the farm Schaapkraal No.218 & Portion 4 of the farm Jaagbaan No. 17080
éDumbe/Nyathi/Mkhuthali Trust – Langgelegen No. 704	Portion 3, Portion4 and Portion 5 of the farm Pivaansbad No. 533, Portion1 and 2 of the farm Schervepoort NO. 216, the farm Zandspruit No. 448, Portion 1, Portion 2 and Portion 3of the farm xamdaspruit No. 448

9.0 CROSS-BOARDER ALIGNMENT (OTHER

IDENTIFIED LED PROJECTS
Soya bean processing plant
Saw mill
Small business hive
Pongola Bush Nature Reserve development
Bivane Dam development
Ithala expansion
Caravan park at Dumbe dam
Development corridor(Wakkerstroom/Volksrust)
Dumbe Mountain chalets
Shopping centre

MUNICIPAL SPATIAL DEVELOPMENT FRAMEWORKS)

9.1 DISTRICT SPATIAL DEVELOPMENT FRAMEWORK:

In terms of the Provincial Spatial Economic

Development Strategy, there are agricultural corridors identified that impact on Zululand.

An area of economic opportunity is identified along the western boundary of the District that includes the western third of the e'Dumbe municipal area. This is one of 4 opportunity areas within the District, and while detailed proposals are discussed for two of the areas for which Local Area Plans have been prepared, no explanation is provided in the Spatial Development Framework summary as to what is envisaged in this area. From the Agricultural Land Potential Map, this western e'Dumbe portion has high agricultural potential, the main economic drivers in the District being agriculture and tourism. The areas connectivity to Vryheid is emphasized.

A further opportunity area identified relates to the Ithala Nature Reserve in adjacent uPhongola Municipality to the east, and includes the Bivane Dam within e'Dumbe. Again this opportunity area is not discussed in any detail in the SDF summary, but would appear to relate to tourism.

The Provincial Main Road linking Vryheid and Paulpietersburg (P404) is identified as a Priority Road linking to the P700 transport corridor.

Bilanyoni and Luneberg are highlighted as Development Centres.

9.2 PHONGOLA SPATIAL DEVELOPMENT FRAMEWORK:

uPhongola Municipality lies to the east of e'Dumbe. The 2010/2011 IDP was examined, and uPhongola Spatial Development Framework designations that interface with e'Dumbe are Traditional Settlement, Riverine Environment and Game/Nature Reserve.

9.3 EMADLANGENI SPATIAL DEVELOPMENT FRAMEWORK:

eMadlangeni Local Municipality lies to the west of e'Dumbe within the Amajuba District. The eMadlangeni 2010/2011 IDP indicates that the Spatial Development Framework is under review following the findings of the Amajuba Mountainous Area Nodal Development Policy (AMADP). The existing SDF indicates that the interface is Agriculture with one small "Rural Residential" area. The AMADP advocates that substantial areas within eMadlangeni should be set aside as "Escarpment Mountain Zone" for the long term conservation of the Amajuba Mountains. This designation would interface with approximately the northern half of the western boundary of e'Dumbe. The eKangala Systematic Conservation Plan is one of the resources used in the preparation of the AMADP and appears to extend areas of conservation value relating to the mountains into the North-Western corner of Edumbe which will need to be taken into account in

the e'Dumbe Spatial Development Framework and Rural Scheme. No Transport Movement Corridor linkage is indicated between eMadlangeni and e'Dumbe.

9.4 ABAQULUSI SPATIAL DEVELOPMENT FRAMEWORK STILL TO SOURCE:

Abaqulusi is a local municipality which lies to the South of e'Dumbe and it incorporates the town of Vryheid. The municipality has highest urbanization rate within the Zululand District Municipality. Like e'Dumbe the area of Vryheid (high lying areas) has relatively agricultural potential and activities. Tourism is in the form of battlefields (historic sites), heritage sites, and game areas. P404 is an agricultural corridor which links Vryheid and e'Dumbe.

10. EDUMBE SDF REVIEW

10.1 EDUMBE DEVELOPMENT INFORMANTS

10.1.1 The Development Informant maps are a series of maps, which show spatial trends and issues. The following maps have been prepared:

- Updated Cadastral Base Map
- Minset Data from EKZN Wildlife (Critical Areas)
- C-Plan Data from EKZN Wildlife (Critical Areas)
- Agricultural Land Potential Map (Showing BRUS)
- Urban Edge
- Settlement Plan
- e'Dumbe LED Plan 2006
- e'Dumbe IDP 10/11
- e'Dumbe Housing Plan

From a study of the abovementioned maps, the following key spatial trends and issues have emerged:

10.2 THE PROPOSED SPATIAL DEVELOPMENT FRAMEWORK

10.2.1 THE APPROACH

The proposed approach is similar to that of the Rural Service System. Within a rural area, services are to be delivered through a common distribution network which will be known as the Rural Service System (RSS), (Department of Co-operative & Traditional). It should be noted that éDumbe is not entirely rural.

The RRS comprises of two components namely: a >Hub= which is a distribution and co-ordination point and a >Satellite= which delivers supplementary services. The proposed system consists of three components namely;

Nodal areas are defined in the latest SDF guidelines of July 2010 as areas where there is high intensity of land uses and where activities will be supported and promoted. The development of nodal pints helps to improve efficiency since it provides easy access and creates thresholds for a variety of uses and public transport services. e'Dumbe like any given municipality accommodates a hierarchy of nodes which shows the relative intensity of development anticipated for the various nodes, and the dominant nature and activity of the nodes.

- ✓ Primary Node (Rural Service Centre: - Main Hub- Paulpietersburg) - Administrative and Economic Centre
- ✓ Secondary Node (Satellite: - Support Centre – Bilanyoni , Mangosuthu) - Distribution and co-ordination point

These words distinguish between the higher order and lower order cores or centres within the area of influence of the service centre.

The Nodes have different buffers which are determined by the type of node. This buffer is an indication of the threshold served by each node.

The primary node has a 10 km radius buffer, whilst the secondary and tertiary nodes both have a 5 km radius buffer.

Typical services/facilities within each of the orders are tabled out below:

Primary Node (Rural Service Centre)	**Secondary Node (Satellite)**
Municipal Offices Hospital Welfare Offices Primary - High Schools Tertiary Training Facility Permanent Information Centre Post Office + Post Boxes Banks Bus and Taxi Terminals Police Station Magistrates Court Home Affairs Offices Municipal Hall Wholesalers/Stores/Shops	Satellite Police Station Clinic Primary - High Schools Tribal Court (where applicable) Rural Service Information Centre Post Boxes Regular Bus Service Community Halls Stores/Shops Weekly Mobile Clinic Regular Bus Service Meeting Places Routine Police Patrol Weekly Mobile Welfare Services Primary - Secondary Schools

10.2.2 **SPATIAL DEVELOPMENT CONCEPT**

The spatial development concept is based on the following;

- location and accessibility
- population concentrations
- availability of services
- economic opportunities
- geological considerations
- consideration for areas of conservation
- consideration of areas that are of historical importance

There are three levels of the road network namely;

- Primary Corridor
- Secondary Corridor
- Minor Linkages/Corridor

These words distinguish between the higher order and lower order roads.

In terms of the latest SDF guidelines corridors are defined as linkage systems between nodes, along these corridors there would be increased intensity of development that will be naturally attracted and this development should be encouraged. Corridors are to encourage access to opportunities and they should provide an appropriate level of access to the opportunities along the corridor and would typically include public transport routes.

The formulation of a Spatial Development Framework entails the following steps:

- studying the spatial profile of the municipal area (i.e. the development informants);
- assessing the spatial impact of the various development strategies;
- preparing a Spatial Development Framework Plan.

10.2.3 **APPLICABILITY OF THE CONCEPT** *(REFER TO MAP12)*

The éDumbe/ Paulpietersburg area has been identified as the Primary Node (Rural Service Centre).

The Secondary Node (Satellite) identified are at Bilanyoni, Mangosuthu.

NODES	SETTLEMENT	BUSINESS AND COMMERCIAL	SOCIAL SERVICES	INFRASTRUCTURE AND SERVICES
Primary (Service Centre)- e'Dumbe/Paulpietersburg : Paulpiertersburg town is located to the North of Vryheid and is accessed mainly through R33 and P221. The town plays a significant service function in e'Dumbe local municipality in that it constitutes the main hub for economic and social services. The town's significance is evident from the extent of human and vehicular traffic, however in comparison to other municipal areas e'Dumbe is not congested and movement around the town is fairly easy. By virtue of the extent of the existing development, this town (Paulpiertersburg) can easily accommodate future industry (especially on the eastern part of the town as you about to exit the town area), commerce and other economic activity at higher order level. The town centre is laid out in terms of a proper plan designating various sites and	The settlements in the vicinity of the town are of suburban and township settlements (e'Dumbe township. Development within the town is administered by a scheme/ Land Use Management Systems.	There are numerous formal business consisting of shops at medium scale like the Spar to smaller corner shops. There are also commercial service offices at different scales, all located within the CBD. In the same way informal activities are found along the pavement of the roads, in public transport areas as well as next to medium scale businesses. There are currently no adequate facilities accommodating the informal business operators. Other generic activities include petrol service stations, formalised taxi ranks, warehouses, a mini flea market and a range of shops.	Municipal services Government Departments Clinic Community Healthe Care Centre South African Police (SAPS) Department of Justice Department of Transport (testing Grounds) Health Cemetery Site Postal Services	There are roads of major District and Regional impact, namely R33 which runs through from Vryheid to Mpumalanga. The P221 which passes through tourism development (Natal Spa, Mountain of Wonders) This is the main axis of e'Dumbe Municipality, The CBD is currently provided with piped water. Adjoining areas are also well served with water Reticulation covers the CBD and adjoining areas in the immediate vicinity. Here there is a combination of waterborne sewer and septic tank system.

NODES	SETTLEMENT	BUSINESS AND COMMERCIAL	SOCIAL SERVICES	INFRASTRUCTURE AND SERVICES
activities. Admittedly some of these may have been transformed over time.				
Secondary Node (Satellite) – Mangosuthu: Mangosuthu is located to the east of e'Dumbe node, and is just a few km away the R33 is the main route that gives access to mangosuthu. The area has one area of major economic activity spot and this is also of a small scale which also provides a pension payout point. Within the economic area there is an informal ranking area where taxi's and mini taxi's (vans etc) operate. The public transportation facilities within this area can be stated as poor. The settlements within the area are a bit formalised however the area is not registered and the municipality is in the process of registering the area. Even though this node is not of good standard it plays an important role to the community and surrounding communities.	The area shares a semi rural character with the settlements being formalised. With access roads provided to the settlements and some level of basic services. Most housing structures are of brick and plaster.	The area of catchment being considered hosts formal and informal business. However there is one large shop which caters for the node and some informal trading taking place just outside the shop and the informal taxi rank which is located across the road from the shop. A proper taxi rank needs to be constructed and formalised, the taxi rank is vital to the commuters as the majority uses public transportation as their main mode of transport.	⇨ Pension payout point	⇨ **Water:** in the context of the main centre water is reticulated in stand pipes. ⇨ **Electricity:** the centre is adequately provided with electricity. ⇨ **Sanitation:** sanitation is mainly in the form septic tanks and informal VIPs. ⇨ **Roads:** There a mi of road typologies within the area some roads are tarred and some are gravel.

NODES	SETTLEMENT	BUSINESS AND COMMERCIAL	SOCIAL SERVICES	INFRASTRUCTURE AND SERVICES
Secondary Node (Satellite) – Bilanyoni: Bilanyoni is located to the east of e'Dumbe node, and is just a few km away the R33 is the main route that gives access to Bilanyoni. It is close to Mangosuthu village. The area is semi rural in character and is abutted by deep rural areas. There are a couple of economic activities within the area and it offers more services than its adjoining Mangosuthu. The area has one area of major economic activity spot and this is also of a small scale which also provides a pension payout point. Within the economic area there is an informal ranking area where taxi's and mini taxi's (vans etc) operate. The public transportation facilities within this area can be stated as poor. The settlements within the area are a bit formalised however the area is not registered and the municipality is in the process of registering the area.	The area shares a semi rural character with the settlements being formalised. With access roads provided to the settlements and some level of basic services. Most housing structures are of brick and plaster.	The area has formal and informal trading with majority of the informal traders trading outside the clinic area and some operating near the municipal offices. There is no definite area of formal commercial activities.	⇨ Police Station ⇨ Clinic, ⇨ The department of Social Development ⇨ Municipal Offices	⇨ **Water:** in the context of the main centre water is reticulated in stand pipes. ⇨ **Electricity:** the centre is adequately provided with electricity. ⇨ **Sanitation:** sanitation is mainly in the form septic tanks and some informal VIPs. ⇨ **Roads:** Some roads are tarred, some gravel, others need to be upgraded