

STRATEGIC ENVIRONMENTAL ASSESSMENT FOR THE UMUZIWABANTU LOCAL MUNICIPALITY, KWA-ZULU-NATAL

UMUZIWABANTU - "Home of the people"



SEA ANALYSIS REPORT
May 2016 (**IN PREP**)



REPORT DETAILS

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EXECUTIVE SUMMARY

The key guiding principle for the SEA analysis in this report is contained in the preambles of two framework laws that set the sustainability agenda for the SEA:

- NEMA specifies that “*sustainable development requires the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions to ensure that development serves present and future generations*”
- SPLUMA specifies that “*the sustainable development of land requires the integration of social, economic and environmental considerations in both forward planning and ongoing land use management to ensure that development of land serves present and future generations*”

The fundamental focus for this analysis report is therefore on the spatial integration of environmental, social and economic factors in order to create a better understanding of:

- the environmental sensitivities/environmentally sensitive assets in the area;
- the environmental pressures from human activities and how this has and/or may alter or transform natural processes and/or cause environmental change; and
- the potential environmental risks associated with spatial patterns of growth and development.

The result of analysis is aimed at creating better environmental and sustainability context and outcomes.

ACRONYMNS

AFCA	Alfred County Farmers Association
CARA	Conservation of Agricultural Resources Act
CCS	Carbon capture and storage
CMA	Catchment Management Agency
DAEA	Department of Agriculture and Environmental Affairs
DEA	Department of Environmental Affairs
DEDTEA	Department of Economic Development, Tourism & Environmental Affairs
DoT	Department of Transport
DSOE	Desired State of Environment
DWA	Department of Water Affairs
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
EMZ	Environmental Management Zone
ERM	Environmental Risk Management
GIS	Geographical Information System
GRIP	Groundwater Information Project
I&APs	Interested and Affected Parties
IAP	Invasive Alien Plant
IEM	Integrated Environmental Management
IUCN	International Union for the Conservation of Nature
LUMS	Land Use Management Scheme
NEMA	National Environmental Management Act
NEMP	National Eutrophication Program

NFSD	National Framework for Sustainable Development
NSSD 1	National Strategy for Sustainability and Action Plan
PGDP	Provincial Growth and Development Plan
PGDS	Provincial Growth and Development Strategy
RoD	Record of Decision
RQS	Resource Quality Service
SANRAL	South African National Roads Agency
SAWS	South African Weather Service
SDF	Spatial Development Framework
SEA	Strategic Environmental Assessment
SEMP	Strategic Environmental Management Plan
SoE	State of Environment
ULM	Umuziwabantu Local Municipality
WS	Water Services
WSA	Water Services Authority
WUA'S	Water Use Authorities

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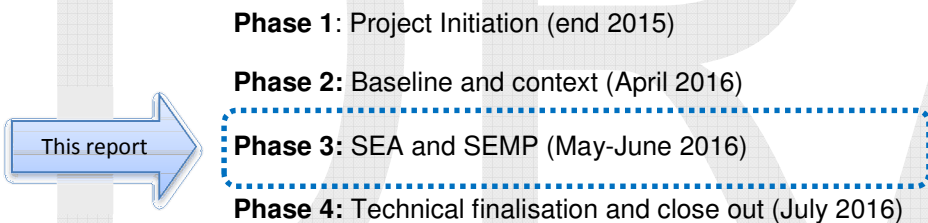
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1. INTRODUCTION

1.1 Background

A Strategic Environmental Assessment (SEA) was commissioned by the Umuziwabantu Local Municipality (ULM) in partnership with the Ugu District Municipality and the KwaZulu-Natal Environmental Authority represented by the Department of Economic Development, Tourism and Environmental Affairs (EDTEA).

Background information about the SEA, the need for the project and the scope of work are included in the *Baseline Report (April 2016)*. The SEA project involves four (4) phases:



1.2 Purpose and objectives

The purpose of the SEA is to support decision-making for sustainable development by informing the Municipality's Spatial Development Framework (SDF). The objectives have been defined as follows by the relevant authorities:

1. To enhance the management and conservation of sensitive environmental assets in the municipality;
2. To sustain the continued benefits of ecosystems goods and services provided by vulnerable ecological resources in the local municipality; and
3. To provide an environmental layer of information to the SDF and other spatial plans.

OUTPUTS

The key output of the SEA will be the Strategic Environmental Management Plan (SEMP), written up as a framework that explains:

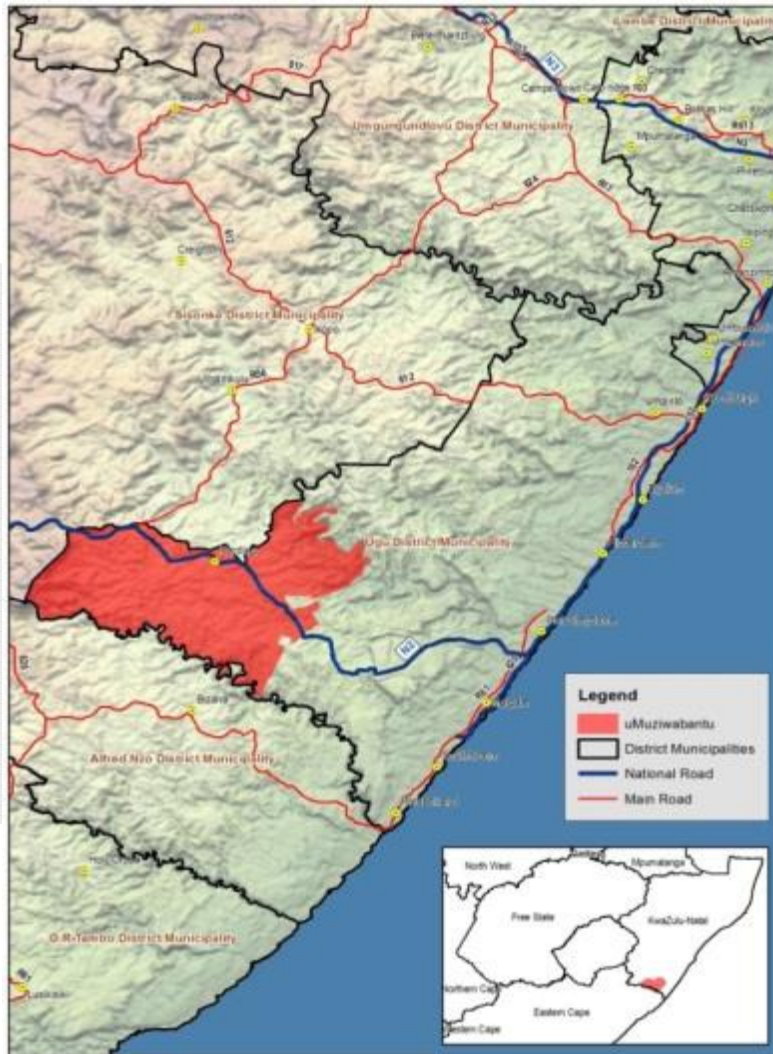
1. The 'spatial environmental vision for the area'
2. The strategy to promote integrated environmental management in the Umuziwabantu Local Municipal Area; and
3. The plan to ensure effective strategy implementation.

The SEMP will translate the environmental management priorities of the area into spatially demarcated areas or management zones and it will link guidelines to each of these zones to inform decision-making on environmental requirements and acceptability of development applications. It will serve as an 'Environmental Management Overlay' to the Municipality's Land Use Management Scheme (LUMS).

OUTCOMES

Broadly the expected outcome of the SEA project can be defined as a contribution to improve the capacity of decision-makers to integrate 'environmental elements' into spatial planning. This in turn is then expected to guide development planning that could make a positive contribution to the country's environmental sustainability objectives. The process is expected to improve intergovernmental relations in respect of planning and environmental sustainability issues. More specifically, the logical consequences of the SEA are expected to produce the following results:

- A SPLUMA compliant SDF (see section 1.3);
- Improved decision-making for sustainable development;
- Efficient use of natural resources and functioning ecosystems that continue to generate goods and services; and
- Sustainable spatial development.



Map 1: Locality of the study area

The purpose of this document is:

- To provide a summary of the key issues that were identified during the baseline analysis phase;
- To present the results of further spatial analysis (integration);
- To present a draft environmental vision for the area; and
- To create a platform for stakeholder dialogue and contributions to the environmental vision / desired state of the environment for the study area.

1.3 Stakeholder engagement

A Draft Baseline Analysis Report (February 2016) was prepared with the purpose to:

- Introduce the SEA project;
- Provide an overview of the Municipality's SDF;
- Create context for the SEA; and
- Provide a platform for stakeholder dialogue.

The above report was presented to the SEA Project Steering Committee (PSC) meeting on 12 April 2016 where stakeholders were afforded an opportunity to make contributions. The Final Draft Baseline Report (April 2016) reflects the comments and new information that was received after this meeting.

The ULM and the EDTEA are responsible for stakeholder engagement and public participation in this project and the process is guided by a *Stakeholder Engagement Plan (March, 2016)* which is attached as **Appendix 1** to this report.

A summary of stakeholder involvement, comments and responses received to date is included in the *Comment-Responses Report* which is attached as **Appendix 2** to this report.

The term “stakeholder” is taken to mean *any person* with an interest in or affected by the SEA and the following definition was adopted for such persons:

INTERESTED AND AFFECTED PARTIES (IAPs)

- a) any person, group of persons or organisation interested in or affected by the SEA; and
- b) any organ of state that may have jurisdiction over any aspect covered by the SEA.

Reference:

After the definition of IAPs as specified in the *EMF Regulations (2010)*.

1.4 Structure of this report

This report is structured as follows:

Section 1 provides background, the expected outputs and outcomes of the SEA, and information about stakeholder engagement.

Section 2 provides a summary of the baseline analysis, the strategic context that was created in the previous SEA phase and the key sustainability issues. It serves to maintain focus on the SDF.

Section 3 serves to confirm the spatial environmental resource opportunities and constraints of the study area based on sensitive environmental attributes.

Section 4 serves to create an understanding of the development pressures, trends and needs in the study area through detailed analysis.

Section 5 is aimed at identifying the potential environmental risks associated with spatial patterns of growth and development.

Section 6 presents the approach to zoning and key concepts to be tested through stakeholder engagement.

Section 7 specifies next steps in the SEA process.

2. SUMMARY OF BASELINE AND STRATEGIC CONTEXT

2.1 The Umuziwabantu SDF

The Umuziwabantu Municipality's Spatial Development Framework (SDF) is the key decision-making process to be influenced by the SEA. The most recent SDF (ULM, 2015) was therefore reviewed to obtain an understanding of the study area's dynamics, as well as the economic, sectoral, spatial, social, institutional and environmental vision of the area. A closer examination of the environmental sustainability elements in the SDF revealed that:

1. The SDF has considered environmental baseline information;
2. There is a clear commitment to the integrated concept of sustainability; and
3. The environment sustainability theme has been consistently translated throughout the basic structure of the SDF: from the long-term strategic framework to the spatial development strategies to the implementation plan.

However, and with the objectives of the SEA in mind, the detailed review also revealed that:

1. Although the SDF Report acknowledges the useful *Ecological Socio-Economic Relationship (ESER) Framework* to facilitate integration across different sectors (ULM, 2015: 129), **there is much room to improve the integration of social, economic, institutional and biophysical information** (i.e. analysing the interrelationships between all these components of the environment)

2. [The SDF defines a spatial development concept – Figure 1 – and translated this into a more detailed SDF – Figure 2. During this process it makes some environmental trade-offs but it does not explain or justify the rationale or indicate the potential environmental implications].
3. The SDF broadly addresses the spatial environmental zoning needs of the area by providing a framework for identifying (a) land to be protected and (b) land where development can be accommodated. However, this framework does not indicate **'how' development should take place within the various spatial planning categories and/or the environmental performance standards that should apply** to development activities. The SEA can therefore help facilitate environmental decision-making by defining:
 - a. The desired state of the environment for the various spatial planning categories (including land where development can be accommodated);
 - b. Environmental controls/targets or limits of change for the use of various areas; and
 - c. Procedures to be followed for the approval of activities.

The strategic direction for development in Umuziwabantu is captured in the developmentally-orientated vision statement from the Municipality's IDP which clearly shows the socio-economic priorities of the area:

'To be a preferred investment destination with superior, sustainable and people-centred service delivery'

Mission statement

To create an environment that boosts investor confidence by providing strong decisive leadership, thereby creating jobs and improving the quality of life.

The spatial vision statement in the Municipality's SDF, which was produced through a consultative process, **will guide the SEA**:

'A municipality of diversity and richness, in which all its communities benefit from the careful use of the land and resources and are connected through an efficient network of settlements which promote economic, social and cultural development and optimum access to cost-effective services.'

Mission statement

To protect and enhance the natural resource base, and to plan for, implement and maintain facilities, services and infrastructure necessary for all citizens of the Municipality to realise their true human potential.

The spatial development strategies of the SDF are structured around **four (4) primary goals** which form the mainframe of the strategy framework and the key SDF proposals. These proposals are the subject of the assessment in the SEA.

GOAL 1: Environmental Sustainability

GOAL 2: Sustainable Human Settlements

GOAL 3: An Inclusive Economy

GOAL 4: Effective Land Administration

The long-term spatial development concept as copied from the SDF Report (ULM, 2015) is illustrated in **Figure 1**, while the consolidated SDF is shown in **Figure 2¹**. The SDF as recreated from the shapefiles is shown in **Map 2**

¹ The data that underlies this spatial picture was received as various shapefiles (i.e. not a single, consolidated shapefile) and it had to be consolidated.

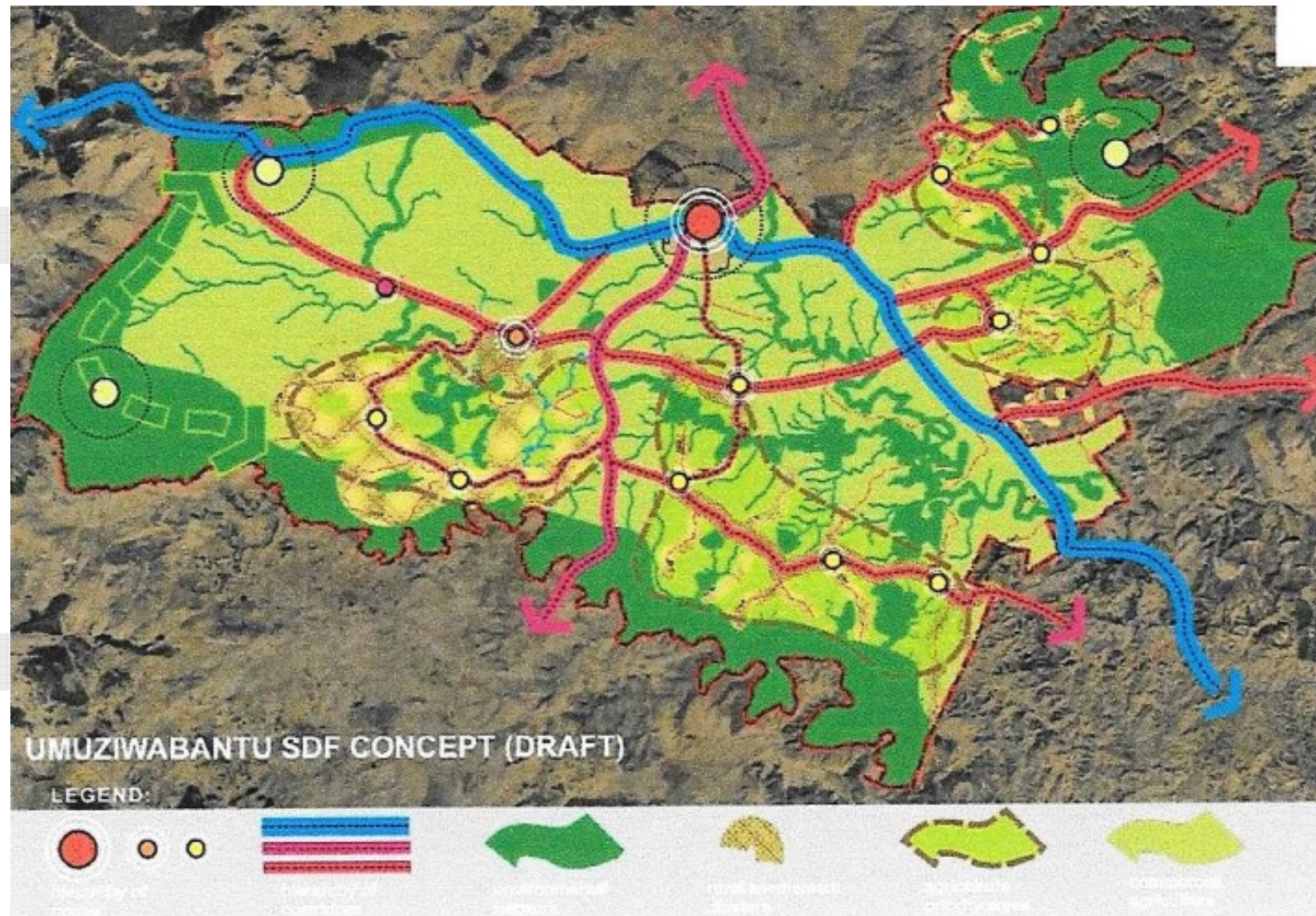


Figure 1: Umuziwabantu SDF: Development Concept (ULM, 2015)

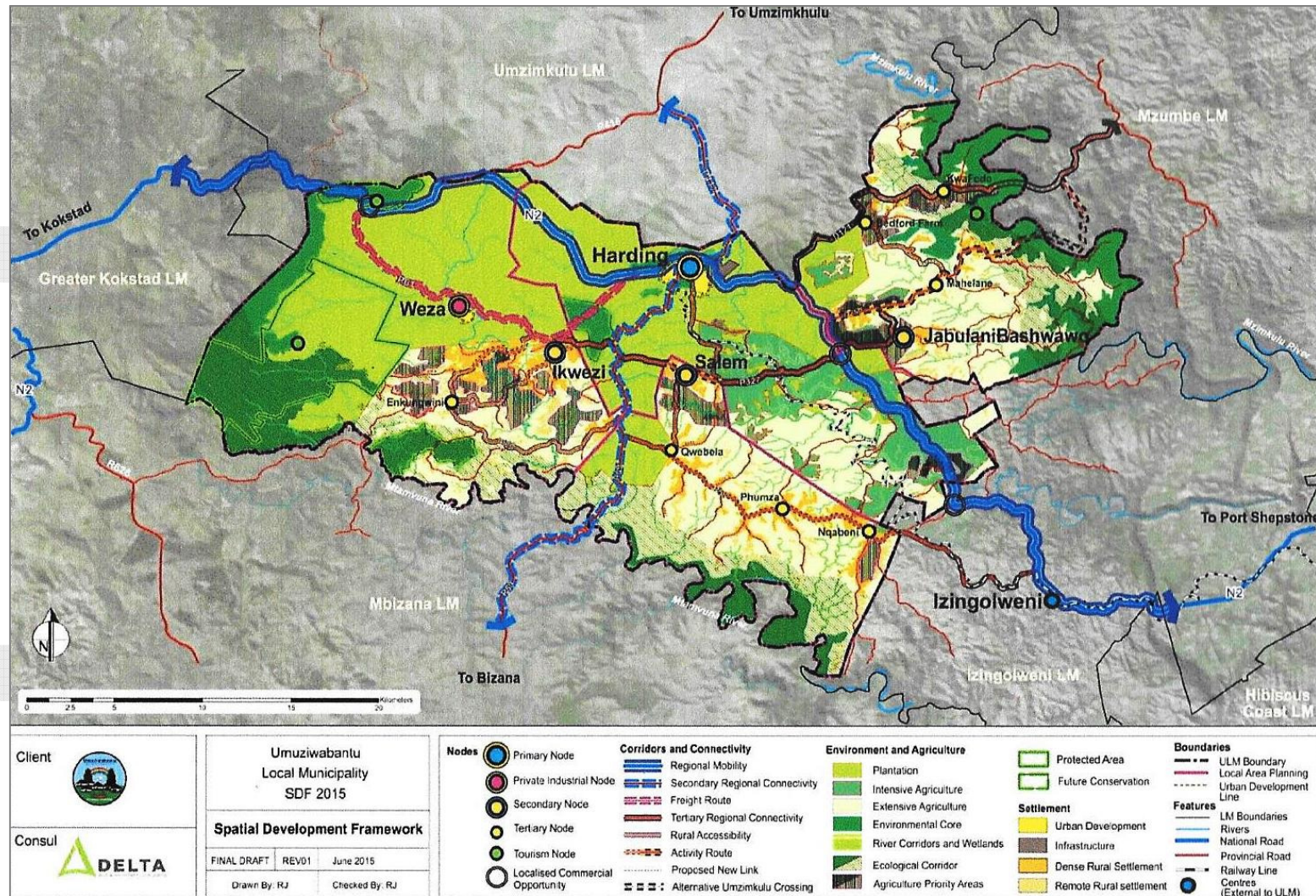
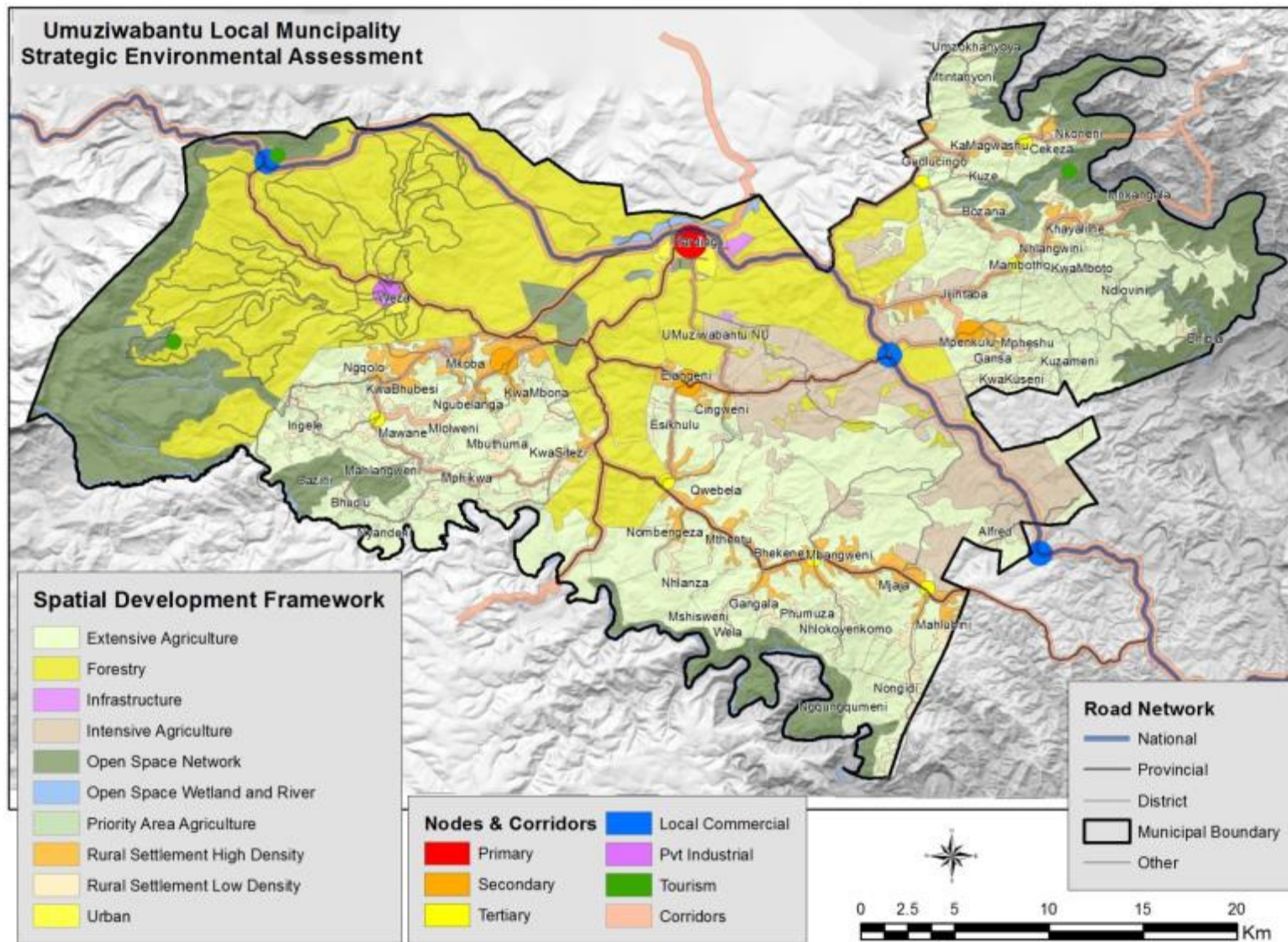


Figure 2: Umuziwabantu SDF: Consolidated (ULM, 2015)



Map 2: Umuziwabantu SDF (after consolidation of shapefiles)

2.2 Sustainability agenda

The SEA is strategically positioned within context of the country's key sustainability and environmental policy orientations. To assist in this regard the Baseline Analysis Report identified:

1. The laws that are of significance in setting the sustainability agenda for the SEA and which provide conditions or restrictions for development; and
2. The macro-policies that further articulate the sustainability agenda of the country and which provide strategic direction for the SEA.

Key macro-policies that define the socio-economic and environmental ideals to be advanced in the SEA include:

1. The 2015 Global Agenda for Sustainable Development;
2. The New Growth Path (2010);
3. The National Development Plan (2011);
4. Medium Term Strategic Framework (2014-2019);
5. National Framework for Sustainable Development (2008);
6. National Strategy for Sustainable Development (2011);
7. KZN Provincial Growth and Development Strategy (2011) and the supportive Provincial Spatial Development Framework;
8. KZN Provincial Growth and Development Plan (2014);
9. Sector-specific policies, plans and programmes; and
10. District Municipal Plans such as the Ugu Growth and Development Strategy (2012).

Of significance is that all of the policy drivers recognise the cross-cutting nature of environmental sustainability and make the 'environment' a key performance area for success measurement.

It is accepted that the logical consequences of the Umuziwabantu's SDF would be risk-averse decision-making that delivers sustainable socio-economic development within the country's framework policy for sustainability. This will require a development approach that makes a positive contribution to the following outcomes:

OUTCOME 1: Integrated planning and implementation

Municipal development planning integrates sustainability principles, enables the integration of sustainability principles into the hierarchy of municipal land use plans, and facilitates ongoing assessment of progress towards sustainability in the geographical area of study. There is adequate capacity to facilitate sustainable development and an improvement in local environmental accountability.

OUTCOME 2: Natural assets and resources use

Municipal development planning gives pertinent attention to natural resource degradation and depletion of ecological infrastructure. Strategies address long-term needs, and unavoidable environmental losses are offset by investments in related areas. Community and ecosystem health are not adversely affected by the degradation and/or pollution of the atmosphere, water, land resources and/or the aesthetic quality of the landscape.

OUTCOME 3: Green economy

Municipal development planning includes green growth contributions to economic growth and employment. The economy grows while preventing environmental degradation and pollution, loss of biodiversity and unsustainable natural resource use.

OUTCOME 4: Sustainable communities

Municipal development planning enables spatial integration between communities, as well as between communities and the natural environment. It facilitates environmentally sustainable options to meet the different needs of the region's residents.

OUTCOME 5: Climate change

Municipal development planning gives pertinent attention to climate change. It enables investment into local climate change adaptation and mitigation strategies and projects.

2.3 Governance

The performance of the SEA will be effective and efficient if key role-players with an interest in the study area embrace their environmental decision responsibilities, and cooperate in SEA implementation.

There are some challenges:

1. The **Umuziwabantu Local Municipality (ULM)** must adopt the SEA as local policy, institutionalise it within the relevant municipality structures and implement it through a clear programme of activities. However, the financial and administrative capacity of the Municipality limits the extent to which Council can practically be held accountable for implementation of the SEA.
2. There is much room to improve **intergovernmental support** from organs of state with an interest in the area. [There are many role-players which have an important part to play in the SEA but their contribution to date have been weak]
3. **Traditional authorities** are key decision-makers in the use of land but their contribution to the SEA will be restricted for various reasons.
4. Compliance monitoring and enforcement.

2.4 Key issues of sustainability (problem framework)

The basic problem framework for the SEA is summarised in table below. This problem framework provides the departure point for defining the desired environmental and sustainability outcomes for the area.

Table 1: The consolidated ULM SEA problem framework (draft)

KEY PROBLEMS	KEY SENSITIVITIES
Environmental degradation <i>(Natural resource use)</i>	Natural and cultural values <i>(Assets under a conservation status or needing conservation, cultural values, sensitive areas)</i>
<ol style="list-style-type: none"> 1. Vegetation and veld degradation 2. Soil degradation 3. Degradation of water resources 4. Terrestrial ecosystem and biodiversity loss 	<ol style="list-style-type: none"> 1. Land resources 2. Water resources 3. Biodiversity 4. Landscape character 5. Cultural context
Socio-environmental vulnerability <i>(Social needs)</i>	KEY POTENTIALS <i>(Natural and social assets with short-, medium and long-term potential)</i>
<ol style="list-style-type: none"> 1. Poverty, inequality and access 2. Food security 3. Environmental hazards 	<ol style="list-style-type: none"> 1. Commercial agricultural production and agro-processing 2. Household food production/subsistence farming 3. Timber production and beneficiation of timber 4. Tourism associated with natural and cultural assets 5. Water resources development 6. Human settlements 7. Alternative / renewable energy
Pressures on resources <i>(Social needs and natural resource use)</i>	
<ol style="list-style-type: none"> 1. Timber production and manufacturing 2. Commercial agriculture 3. Rural settlements 4. Disordered urban development 5. Deficient municipal services and infrastructure 6. Road network 	

3. ENVIRONMENTAL SENSITIVITIES AND POTENTIAL

The purpose of this section is to confirm the spatial environmental resource opportunities and constraints of the study area based on sensitive environmental attributes.

KEY DEFINITIONS

An **attribute** means the quality ascribed to an element in the environment that distinguishes it in character, form or nature from other elements in the environment.

Environmental **sensitivity** is a measure of how easy it is to inflict damage on a particular area or produce serious consequences from actions on a limited scale. It is used as an indication of the development potential of an area. Sensitivity informs the desired land use and/or the types of development activities best suited to an area.

The philosophy behind the new EIA Regulations (2014) includes the principles that resource sensitivity must be used as an indicator of the type of development control required. The more sensitive, the higher the risk of damage and hence stricter control must be applied.

Sensitive environmental attributes were identified and spatially defined during the baseline analysis phase. The information that was gathered reflects the best available data and it translates current environmental policy priorities.

3.1 Sensitivity analysis

The first step in the process of identifying opportunities and constraints is to spatially translate the baseline information into a composite picture that can help evaluate and understand the study area. A sensitivity analysis is a useful tool to achieve this.

The information that was gathered during the baseline phase was integrated to produce the *Environmental Sensitivity Index* that is shown in **Map 3** overleaf.

The method that was used to produce this composite picture is based on the integration or 'summing' of physical and biological parameters that presumably have some bearing on environmental sensitivity. Technically it means that:

- Each data feature was given a value that indicates whether it contains a sensitive data attribute or not (i.e. a 0 or 1 value); and
- Data layers were integrated into a single spatial layer with the values combined into a single record for each spatial facet as illustrated in Figure below.

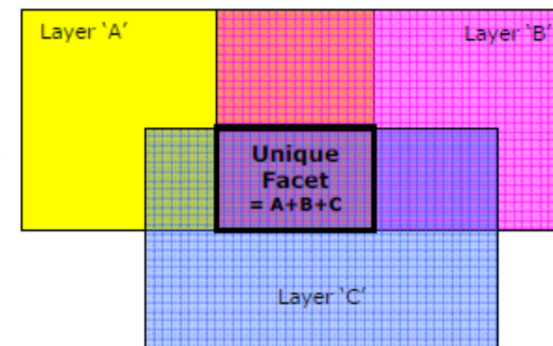
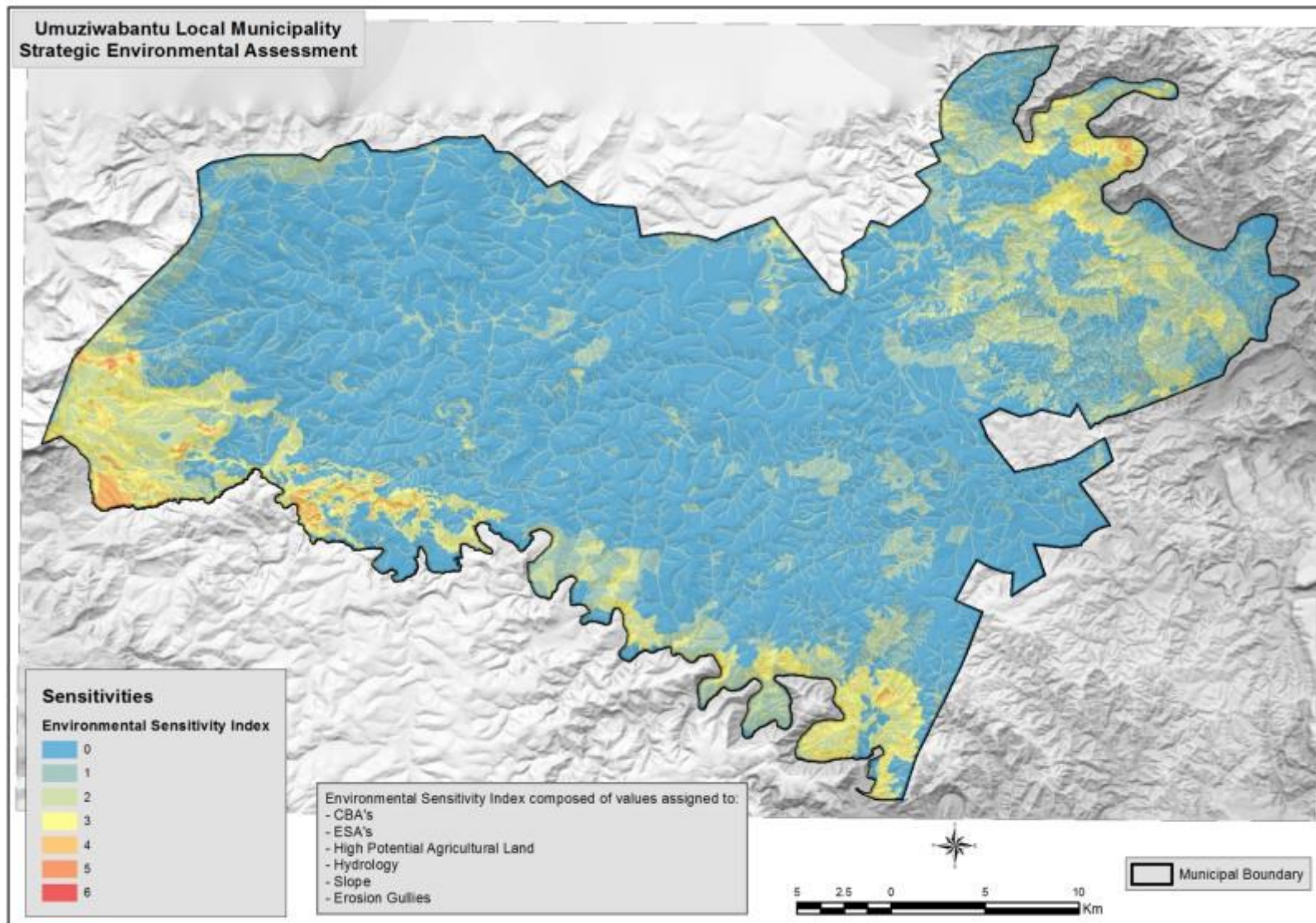


Figure 3: Technical integration of data layers and their respective attributes



Map 3: Environmental Sensitivity Index

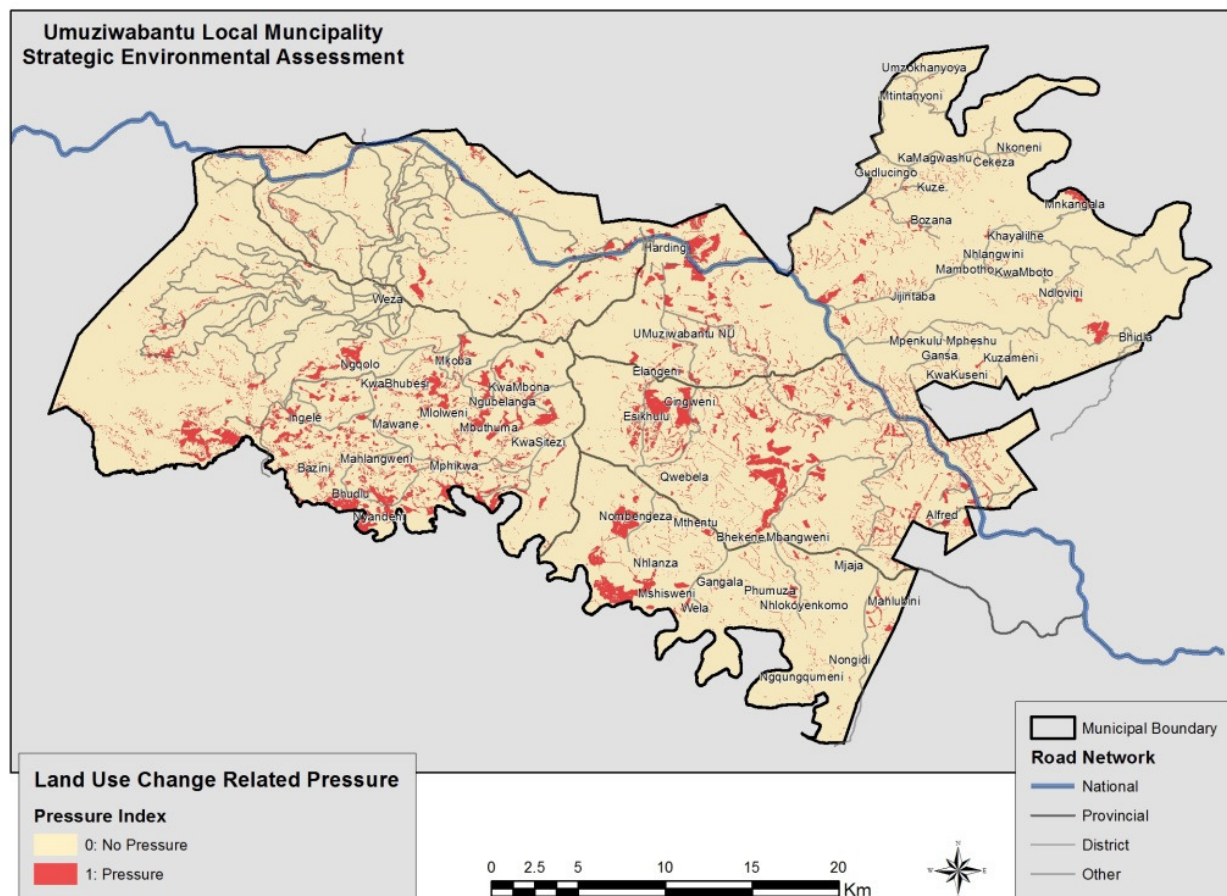
Discussion:

1. The composite picture in **Map 3** essentially shows:
 - a. Areas which are more susceptible to change than other areas, and
 - b. Areas which may need stringent or less stringent development control.
2. The Index spatially shows the “frequency of occurrence”. In other words, a spatial area with a value of 1 is characterised by the presence of one element of sensitivity, whereas a value of 6 indicates that there are many (6) elements of sensitivity occurring in a given spatial area.
3. It is also important to understand that the composite picture is simply a sum of all the data layers that shows the number of “issues” that occur in a specific area. These issues can relate to one or more of the following attributes:
 - a. Critical Biodiversity Areas;
 - b. Ecological Support Areas;
 - c. High Potential Agricultural Land;
 - d. Hydrological Features;
 - e. Slope restrictions; and/or
 - f. Erosion gullies.
4. The “blue area” on the map has a “neutral sensitivity” which only means that these areas are not characterised by a sensitive data attribute.
5. Areas with a high spectrum of sensitivities are more likely to present constraints to development and/or will require stringent development control.
6. This integration of data in this way is a step in the process of defining the future for the study area. It provides an understanding of the areas that would be most affected by change if development is allowed to proceed in an uncontrolled manner.

4. DEVELOPMENT PRESSURES, TRENDS AND NEEDS

SPLUMA requires that “a municipal SDF must include a strategic assessment of the environmental pressures and opportunities within the municipal area”.

4.1 Existing pressures and trends (‘current footprint’)

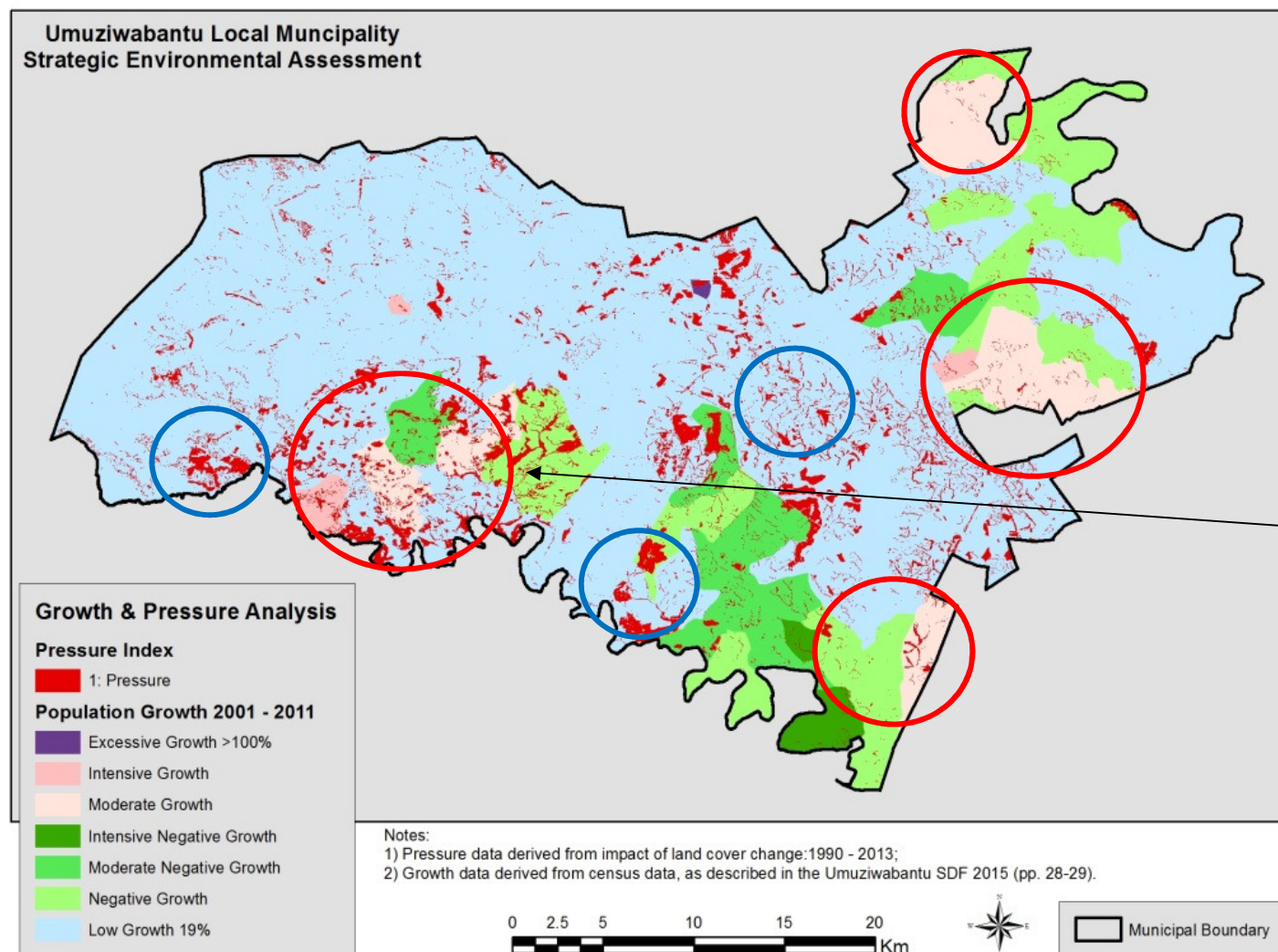


Satellite images from 1990 and 2013 were interrogated and compared to detect changes in land-cover. The *Change Detection Index* in the adjacent map only shows trends in the landscape.

The map shows areas where most change (pressure) have taken place over the last 20 years as a result of human activities.

Map 4: Pressure analysis based on land cover change

4.2 Relationships



Information about the population growth patterns as reflected in the SDF Report (ULM, 2015: 27) was integrated with the pressure index in order to explore relationships. The results are reflected in the adjacent map.

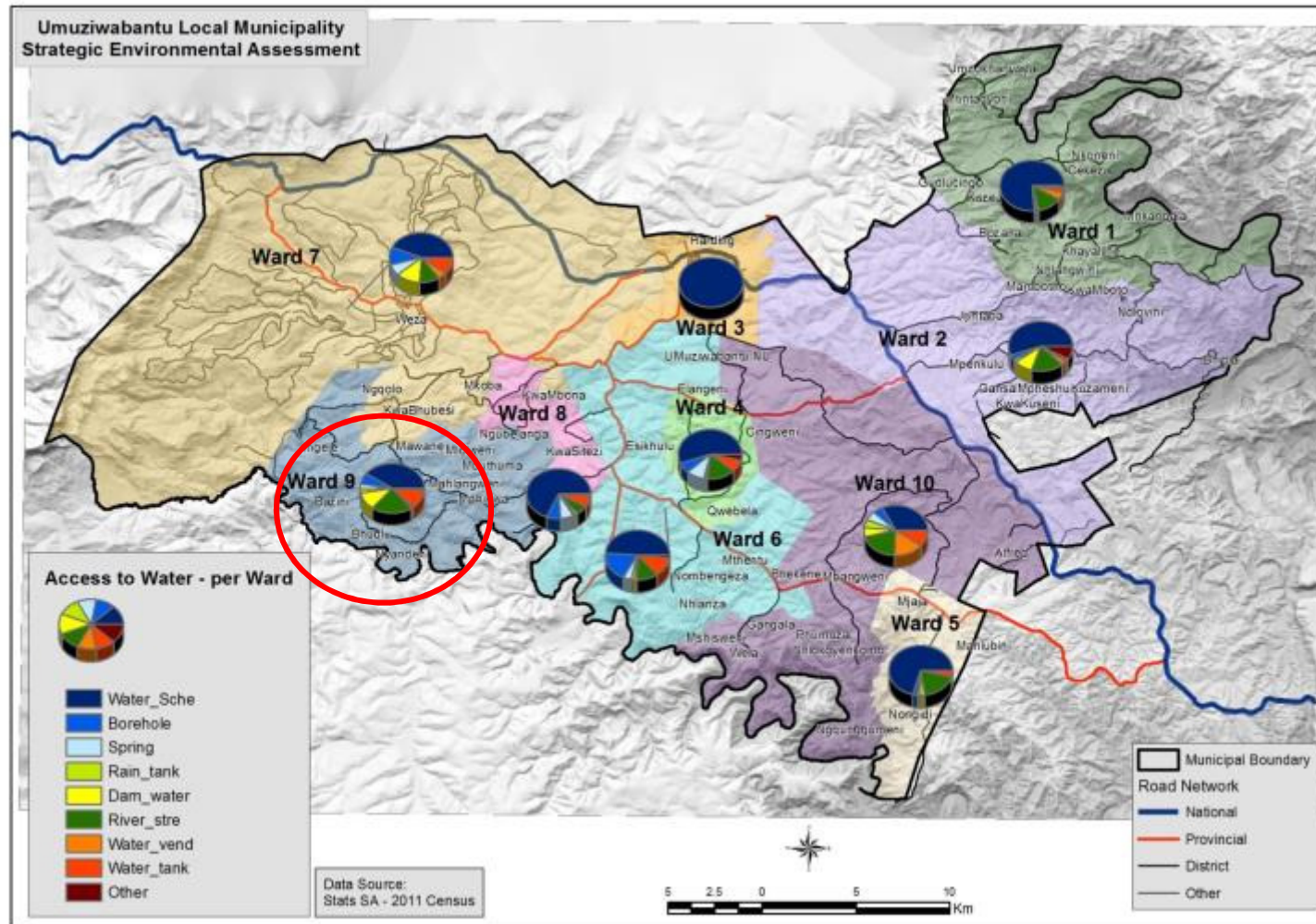
Patterns of human pressure-related change can be observed in areas with positive population growth (red circles) AND in areas with low population growth (blue circles).

The patterns of change create some questions about the drivers of growth in this specific geographic area and the potential environmental implications.

Potential drivers could include:

- Migration from the Eastern Cape
- Productive soils
- Access to water resources

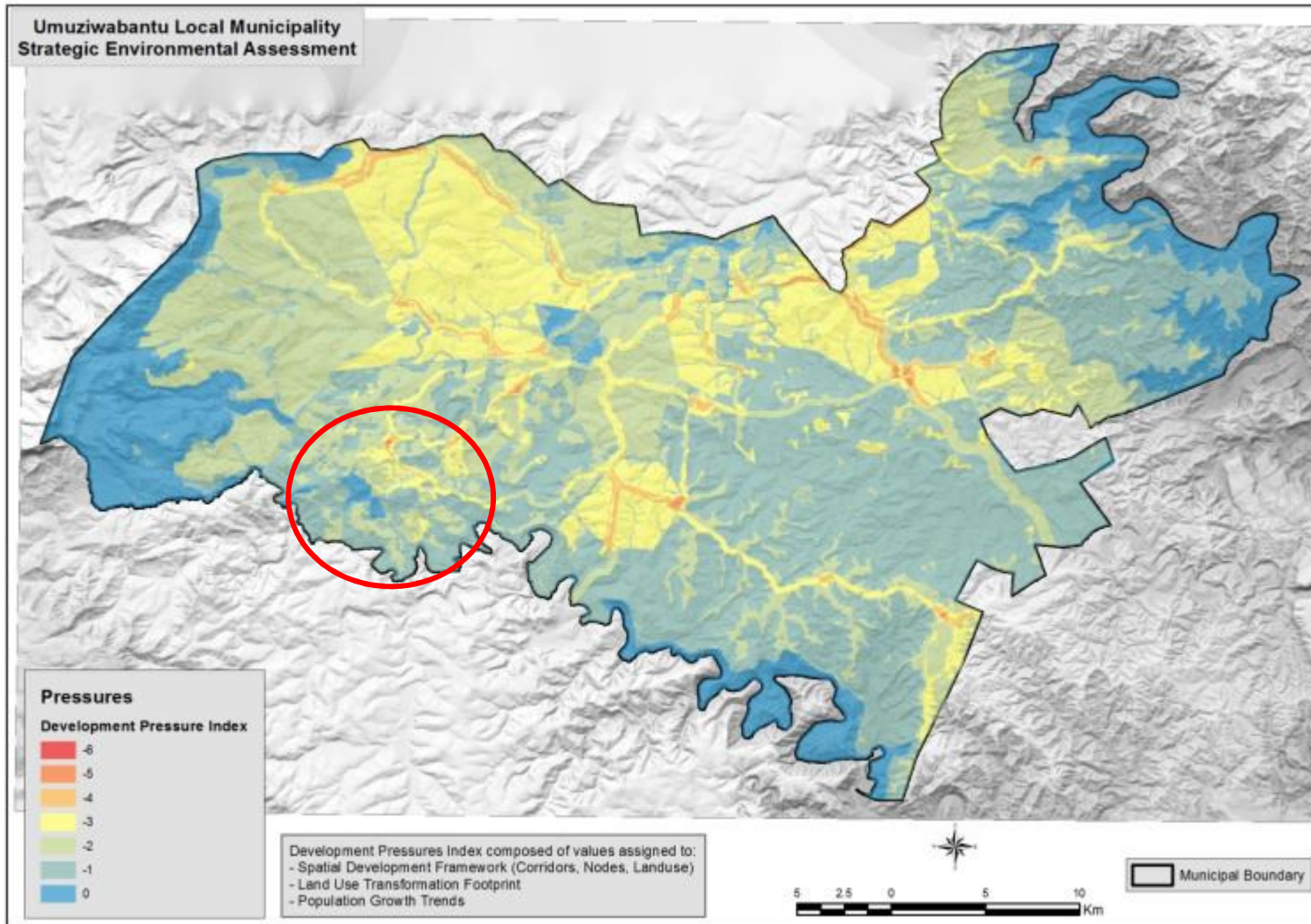
Map 5: Growth and Pressure Analysis



Information about access to water resources was analysed to support further analysis of the potential drivers of change,

Map 6: Access to water

4.3 Future patterns of growth (SDF Proposals)

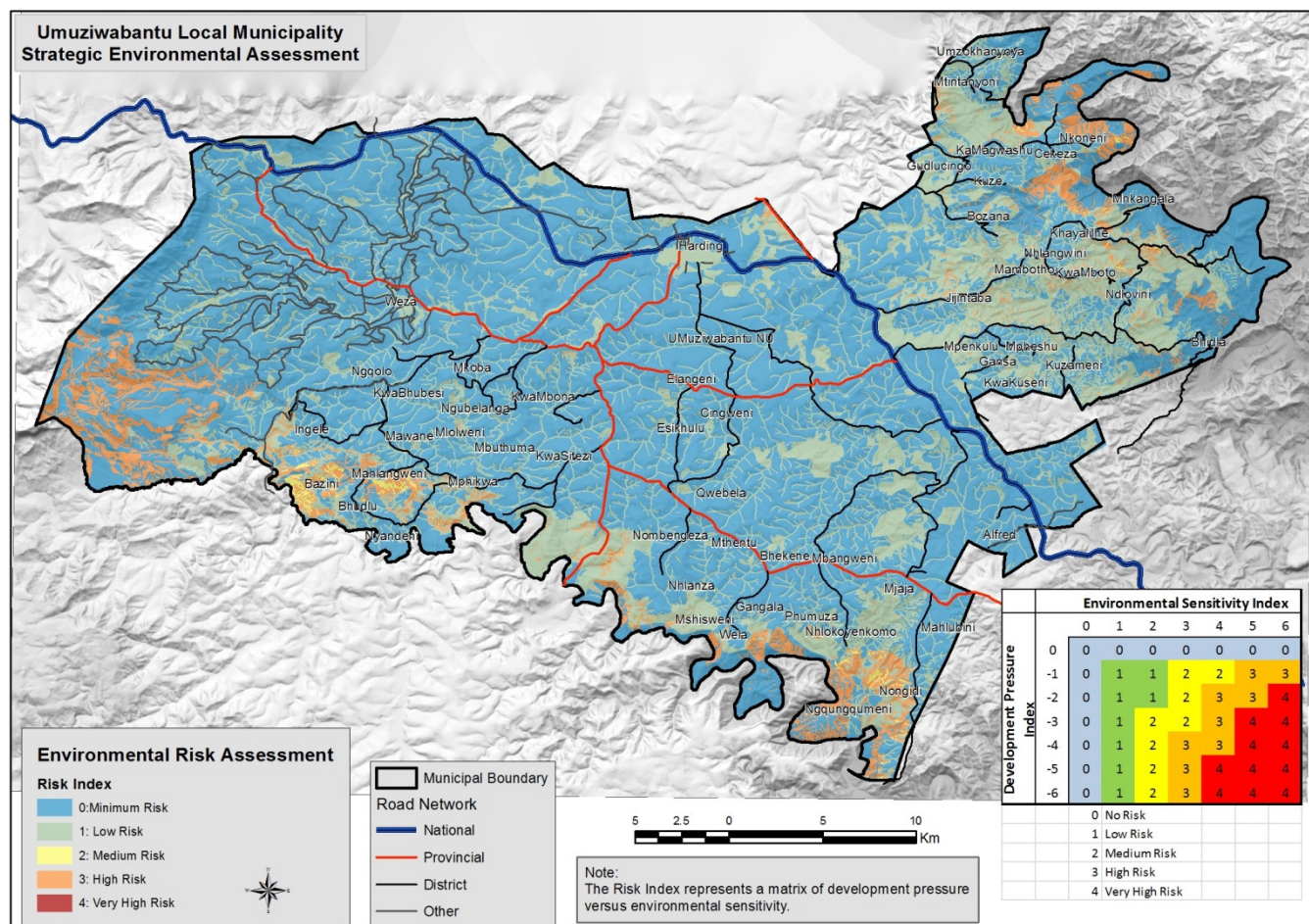


The SDF reflects the needs of the area and the proposals it contain are aimed at facilitating positive change and outcomes. However, the SDF proposals may cause negative change and outcomes.

In order to ensure that the SDF contributes to the sustainability agenda as indicated in section 2.3 the proposals must be tested.

Map 7: Umuziwabantu SDF

5. STRATEGIC RISK ASSESSMENT



SPLUMA specifies that the preparation of SDFs must amongst others “*identify the long-term risks of particular spatial patterns of growth and development and the policies and strategies necessary to mitigate those risks*”.

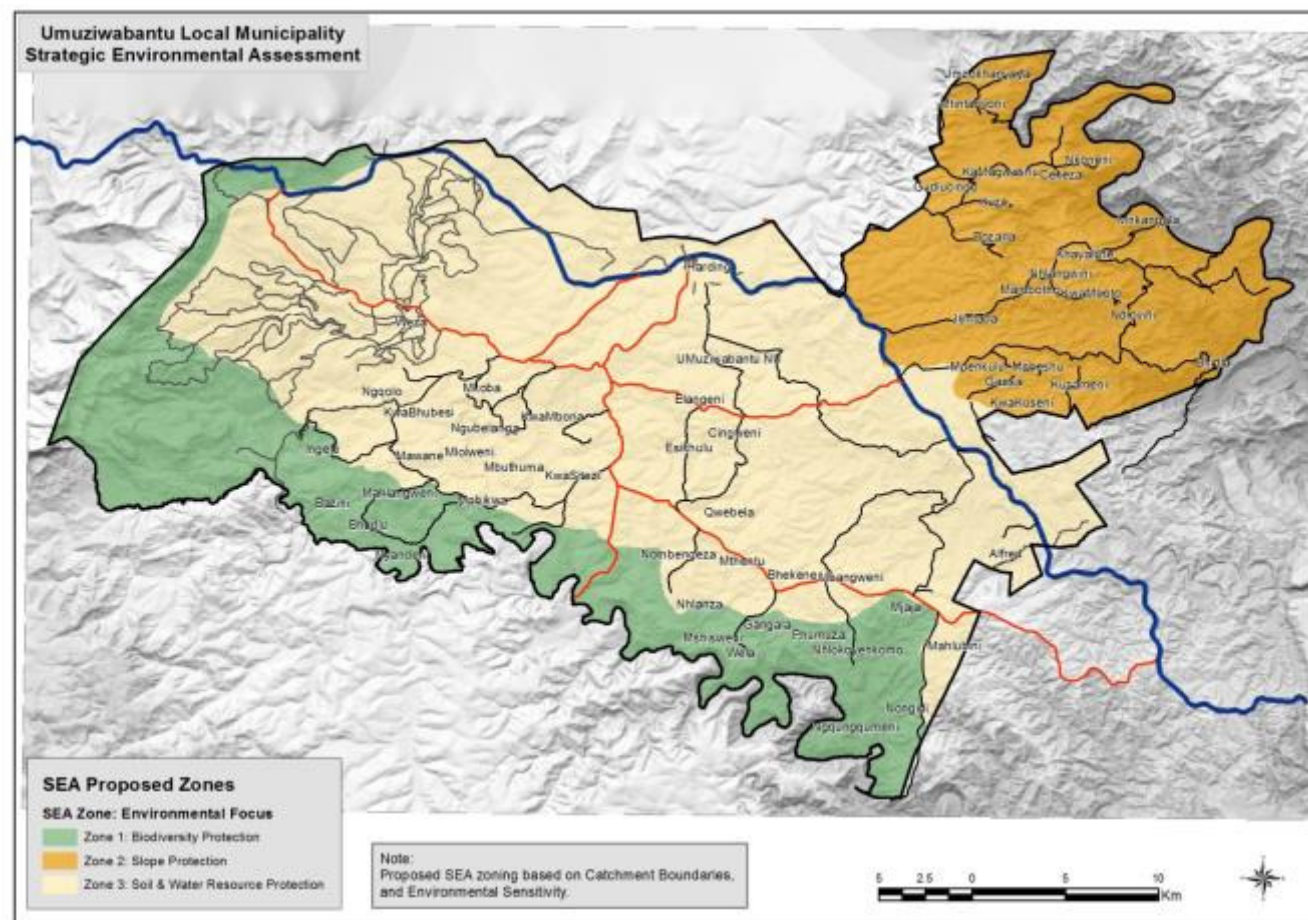
This analysis identifies/predicts the potential environmental risks associated with spatial patterns of growth and development.

The *Environmental Risk Index* offers a benchmark against which strategic options for spatial development can be assessed, relative to the opportunities and risks to the environment and to the sustainability of decisions.

Map 8: Environmental risk assessment

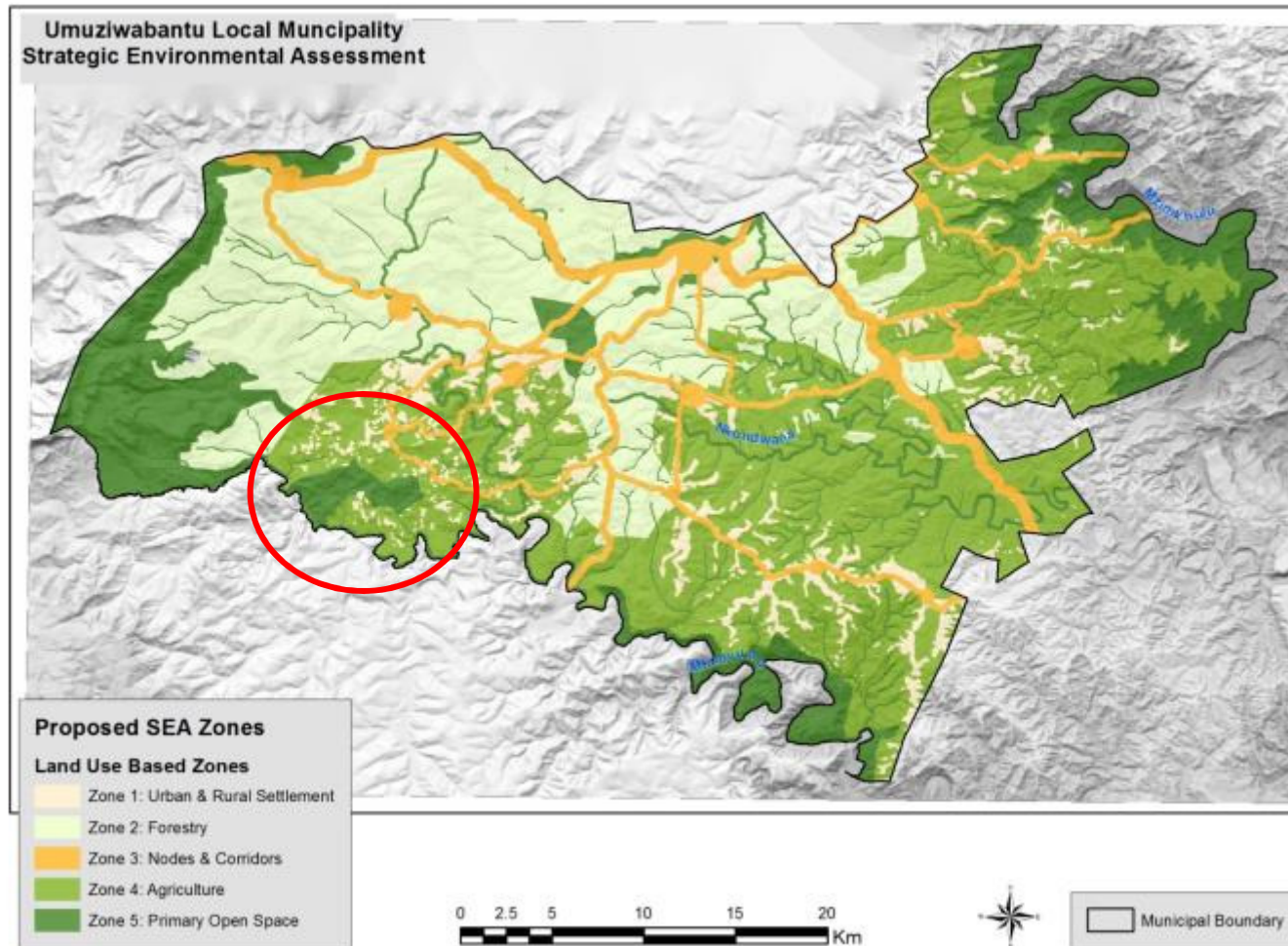
6. PRIORITIES and ZONES

The purpose of this section is to propose an approach to zoning and it presents key concepts to be tested through stakeholder engagement. In working towards environmental zoning two (2) tools are presented at a high level to create strategic sustainability context.

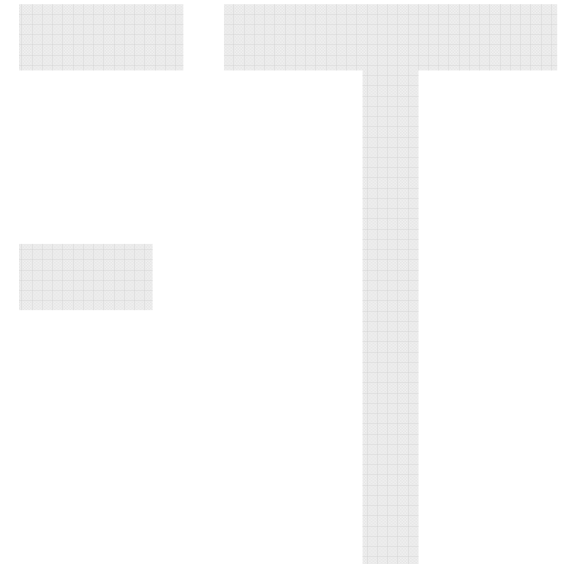


The first approach to zoning has an environmental focus and it proposes an SEA Zone comprising of three primary landscape priorities as indicated on the map legend.

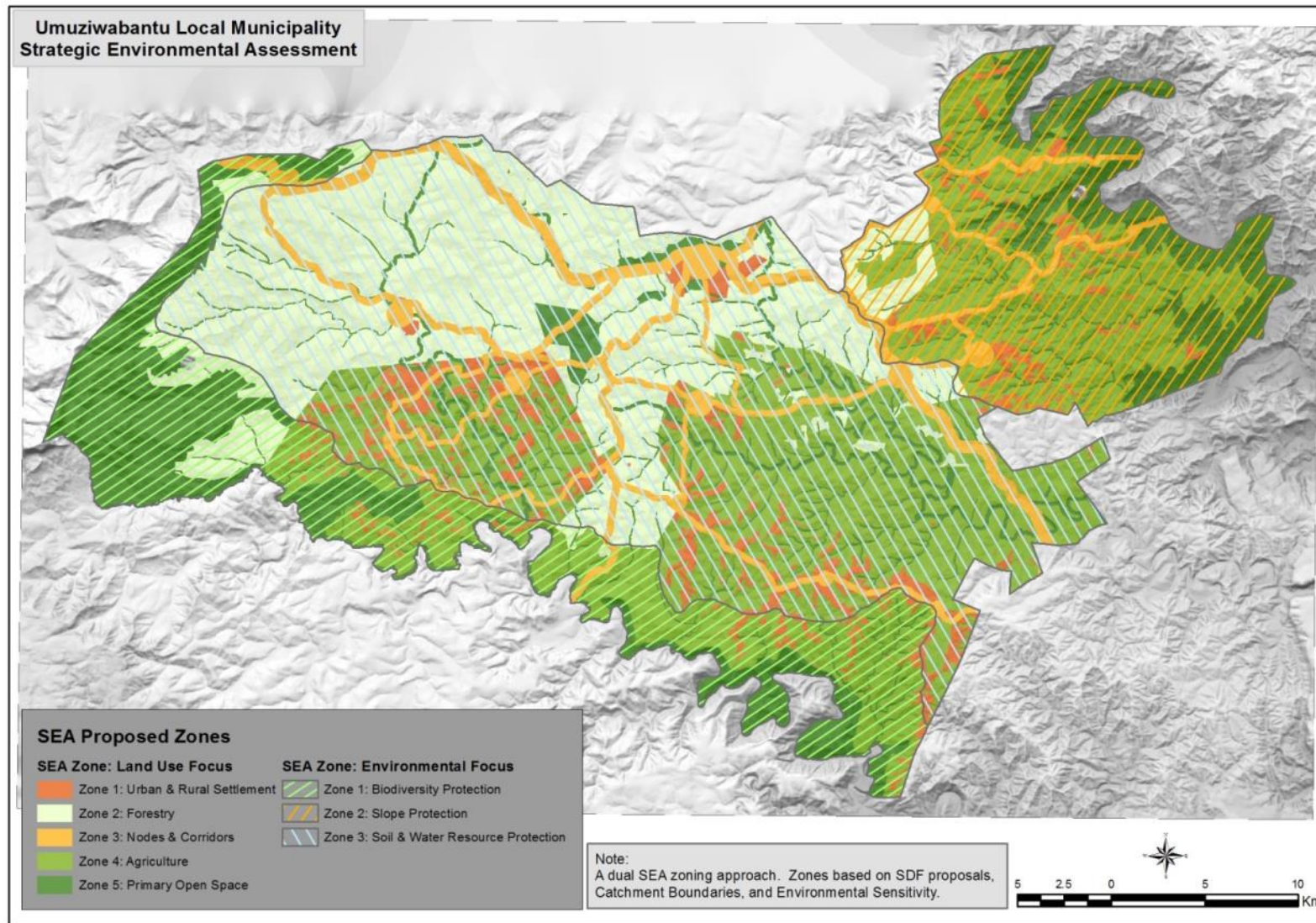
Map 9: Proposed SEA Zones: Environmental Focus



The second approach to zoning has a land use focus and it proposes an SEA Zone comprising of aggregated land use classes as informed by the SDF.



Map 10: Proposed SEA Zones: Land Use Focus



The two proposed SEA Zones are presented here as an overlay map.

Map 11: Proposed SEA Zones (overlay)

7. NEXT STEPS

This report is in preparation and only serves to offer an early opportunity for stakeholders to engage with the analysis phase of the SEA. Preliminary contributions are therefore expected from stakeholders.

Should the zoning approach in this document be accepted by stakeholders the next steps in the process will be to:

1. Refine the detail and focus more on the local scale;
2. Define the desired state of the environment for the respective zones and prepare strategic environmental guidelines and performance standards for the use of land in the various areas.

A Draft SEA Report will then be prepared for stakeholder review before the project is finalised.