



**TURN**SCAPES  
TRAVEL & TOURISM

SOCIAL IMPACT ASSESSMENT  
FOR ESKOM NZHELELE-  
TRIANGLE CORRIDORS PROJECT

SUBMITTED TO:

BAAGI ENVIRONMENTAL  
CONSULTANCY

434 LOIS AVE, WATERKLOOF GLEN,  
PRETORIA.

March 2016



Prepared by:

Ms Chanel Emily Turner

Mobile: 072 204 6094

Telephone: (012) 993 0702

Email: [chanel@turnscapes.co.za](mailto:chanel@turnscapes.co.za)

## Expertise

Miss Chanel Emily Turner obtained a Bachelor of Historical and Cultural Science with specialisation in Heritage and Cultural Tourism Honours Degree at the University of Pretoria, which was attained with distinction and Academic Honourary Colours that made her a member of the Golden Key International Honour Society.

She has experience dealing with impacts associated with development from both a social and tourism viewpoint. She has worked on different type of projects in this realm such as impacts foreseen on World Heritage Sites in Africa affected by extraction industries from a desktop level, power-line projects and housing developments that have been the base of her experience as a Social Impact Specialist as well as a Tourism Assessment Specialist.

Apart from doing Impact Assessments in industry she is currently extending her knowledge in these topics of social and tourism impacts by pursuing a Masters Degree on a part-time basis at the University of Pretoria.

## EDUCATIONAL BACKGROUND

2016	University of Pretoria. Masters in Historical and Cultural Science with specialisation in Heritage and Cultural Tourism [Current: part time]
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2016	First Aid certificate (Level one renewed)
2014	<b>University of Pretoria. Short Course in Business Process Management</b>
2013	First Aid certificate (Level one renewed)
2011	<b>University of Pretoria. Bachelor of Historical and Cultural Science with specialisation in Heritage and Cultural Tourism Honours (with distinction).</b>
2010	University of Pretoria. Bachelor of Historical and Cultural Science with specialisation in Heritage and Cultural Tourism. University of Pretoria. Basic Tourist Guide Accreditation certificate. University of Pretoria. Gauteng Tourist Guide Accreditation certificate. First Aid certificate. (Level one)
2007	New Horizons- Johannesburg. Microsoft Excel 2003 certificates. (Levels 1, 2, 3.)
2006	University of Cape Town. Bachelor of Science with specialisation in Speech Language Pathology and Audiology. Completion of first year.
2004	Parktown High School for Girls. Matriculation: pass with merit.

## WORK EXPERIENCE

2013 September	<p><u>Director. Turnscapes Travel and Tourism Pty Ltd.</u> <u>Social and Tourism Impact Assessment Specialist. (Current).</u></p> <p>The role of the director encompasses a range of responsibilities associated with the effective running of the business that include strategic planning, marketing, design and implementation of respective products and services as key elements in this regard.</p> <p>It also includes the carrying out of Social Impact Assessments and Tourism Impact Assessments as a part of the core consulting component of the business.</p> <p><u><i>Social Impact Assessment Projects:</i></u> Eskom Nzhelele (RSA) –Triangle (Zim) Corridors Project Eskom North-East Waterlogged Towers Project Gibb Soshanguve Precinct Mixed Housing Development Project</p> <p><u><i>Tourism Assessment Projects:</i></u></p>
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	Eskom Nzhelele(RSA) –Triangle (Zim) Corridors Project
2013 (April- 30 June)	<p><u>Lecturer. University of Pretoria</u></p> <p>Third year students in Heritage and Cultural Tourism were taught. The skills developed were in public speaking, marking, analytical thinking as well as co-ordinating with professors.</p> <p><i>Reason for leaving:</i> End of contract.</p>
2012 (August – 2013 July)	<p><u>Research and financial assistant. University of Pretoria</u></p> <p>The role undertaken involved assisting with the research for the report of cross border guiding in Southern Africa for the National Department of Tourism, as well as the financial recording for the project.</p> <p><i>Reason for leaving:</i> End of contract.</p>
2012 (February – July)	<p><u>Consultant. Transboundary Consulting Africa</u></p> <p>My role was the sourcing of GIS data and research for phase one of the Ecosystem Services Based Land Use Decision Making Model for the Department of Environmental Affairs .My role in the project for the African World Heritage Fund was mainly research and communication contributing to the topic of World Heritage Sites and Extraction in Africa: The Role of Local Communities.</p> <p><i>Reason for leaving:</i> To pursue a different direction.</p>
2011 (February – November)	<p><u>Tourist Guide. University of Pretoria Campus Tours</u></p> <p>My role was the recording of transactions for the business and being a tourist guide for influential guests of the University as well as for prospective students.</p> <p><i>Reason for leaving:</i> End of university year.</p> <p><u>The Tuks board game</u></p> <p>I was largely involved in the conceptualising of the first global University board game to date.</p>
2009-2011 (April 2009 – January 2011)	<p><u>Accounts Manager.Copperstone Promotions.</u></p> <p>I often worked in partnership with the director to ensure events were planned and run properly. My main contribution to the company was sponsorships attained for events and the building of positive relationship with customers.</p> <p><i>Reason for leaving:</i> To focus on honours degree.</p>

<p>2009-2010 (October 2009 - November 2010)</p>	<p><u>Project manager. The Stress Box.</u> I was responsible for the managing of the project, ensuring that the product of The Stress Box was made in the best way possible. I often gave critical feedback on the product, sourced the respective products within the box and liaised with the respective companies involved. I was also largely involved in the launching of The Stress Box. <i>Reason for leaving:</i> To focus on honours degree.</p>
<p>2009 (April –May)</p>	<p><u>Researcher. Leadership for Conservation in Africa.</u> Tourism feasibility study in Cape Three Points, Ghana. My role was to contribute to the feasibility study by assessments and visiting all the respective sites in Ghana, and clarify whether tourism would prosper there by means of a feasibility study document. <i>Reason for leaving:</i> Completion of task of feasibility study.</p>
<p>2007 (June- July)  (September- December)</p>	<p><u>Assessor. Goldfields. Driefontein Occupational Health centre.</u> My role was to assess the competency of workers who were being considered to work underground on the Driefontein mines by doing occupational health assessments. <u>Au Pair</u> I was responsible for picking children up from school and assisting them with homework and test preparation. <i>Reason for leaving:</i> To pursue a degree at the University of Pretoria.</p>
<p>2006 (June-July)</p>	<p><u>Audiology elective observations. Leslie Williams Hospital,</u> It was exposure to the practical side of Audiology that included general consultations, programming and fitting hearing aids as well as hearing tests.</p>

## SPECIAL AWARDS

<p>2012</p>	<p>University of Pretoria. Academic Honourary Colours. University of Pretoria. Golden Key International Society. MACE Award for the Tuks Board Game. Campaign category.</p>
<p>2004</p>	<p>Summited Mount Kilimanjaro. Machame route. Parktown High School for Girls- Representative Council of Learners award for leadership.</p>



## CONFERENCES

2012	African World Heritage Fund Conference
2013	National Department of Tourism Research Conference
2015	International Association of Impact Assessment Annual Conference

## REFERENCES

Mr Lordwick Makhura. *Director, Baagi Environmental Consultancy*. Tel: 071 6606 6139

Prof Karen Harris. *Supervisor, Lecturer*. Tel: 0828940701

Dr Beverly Peens. *Director of The Stress Box*. Tel: 083 273 6266

Mr Karam Dhala. *Director of Oatlands Park Hotel*. Tel: 019 328 47242

## Executive Summary

The Nzhelele (RSA) - Triangle (Zimbabwe) Power-line Project requires authorisation from the National Department of Environmental Affairs (DEA) and as such an Environmental Impact Assessment has been undertaken. The key phases in this regard are:

- Phase 1: Environmental Scoping Study (ESS)
- Phase 2: Environmental Impact Assessment (EIA)
- Phase 3: Environmental Management Plan (EMP)

The phase 1 involving the scoping of the impacts was carried out in 2014, where the key aim was to consider the impacts associated with the initial respective corridors. With the concept of changing the corridor route as the strongest form of mitigation, the specialists of the respective fields submitted their views on which sections of the initial corridors should be altered as to have the lowest possible impact, from a biodiversity, social, avifaunal, tourism and visual impact perspective. The changes made to the corridor routes have resulted in the routes that are currently proposed, which are shown in the introduction.

The Social Impact Assessment (SIA) forms a part of the EIA, where the focus is on the implications of the project from a social perspective. In connection with the SIA, a Tourism Impact Assessment has been carried out due to the nature of the project area, which has featured as a separate report.

The impacts and potential impacts of the SIA have been structured according to the respective phase they are likely to appear in. Therefore, the core impacts associated with the planning, construction, operational and decommissioning or phase respectively, will be highlighted.

The planning phase is one which is imperative to manage effectively such that positive impacts of collaboration between respective Interested and Affected Parties, Eskom and stakeholders can be attained. If ineffectively managed can result in negative impacts of resistance to the project.

The construction phase is largely associated with negative impacts as a result of the endeavours that take place during this phase. It is important however to consider that the large majority of these impacts can be successfully mitigated.

Both positive and negative impacts are present in the operational phase and relate to the job opportunities that occur as well as the change in the visual landscape, which is often perceived as negative.

The decommissioning phase is linked with positive and negative impacts, of which the negative impacts can be mitigated and managed.

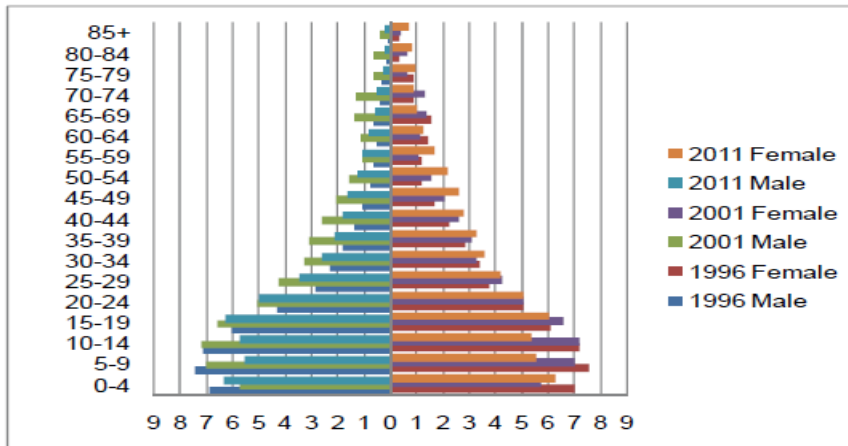
Further recommendations have been posed to suggest effective approaches for the project.

It is valuable to establish that in the assessment of impacts from a social perspective, there was not one which poses as a fatal flaw to halt and suggest a 'no-development' option for the project. There was however the high impact of the change in the sense of place as a negative impact, which would need to be considered.

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## Acronyms

Acronym:	
<b>DEAT</b>	Department of Environmental Affairs and Tourism
<b>LEIP</b>	Limpopo Eco-Industrial Park

<b>LEIP x1</b>	Limpopo Eco-Industrial Park Extension 1
<b>SIA</b>	Social Impact Assessment
<b>VBR</b>	Vhembe Biosphere Reserve
<b>I&amp;AP</b>	Interested and Affected Party



## ESKOM NZHELELE (RSA) – TRIANGLE (ZIMBABWE) CORRIDORS PROJECT

### 1. Introduction

The South African environment is one where there is an increasing need for power generation and distribution as it is needed consistently. Eskom Holdings SOC Limited (Eskom) has responded to this need by collaborating with the surrounding countries such as Zimbabwe and Mozambique in an attempt to manifest more substructures required to enable the environment for all of the countries involved in the agreement.

A substation called Nzhelele substation will be built in the future in addition to substructures such as 2 x 500 kV transmission lines, which have been deemed necessary to assist with the current demand for electricity.

By law in South Africa it is required that an Environmental Impact Assessment (EIA) be conducted prior to a project of this kind and Baagi Environmental Consultancy has been appointed by Eskom to do the EIA. The Social Impact Assessment (SIA) as a specialist study forms a part of this process and thus Turnscapes Travel and Tourism (Pty) Ltd (Turnscapes) has been appointed.

#### 1.2. Location of the project

The Limpopo Province is located in the northern parts of South Africa as indicated in the map at the top left of the figure below. Within the Limpopo Province there are five district municipalities, however the one of relevance to the study is the Vhembe District Municipality, which is indicated in the map below with its local municipalities. The Musina Local Municipality is the area of focus in the study and more specifically, Wards 2, Ward 6 and Ward 21 within this context.

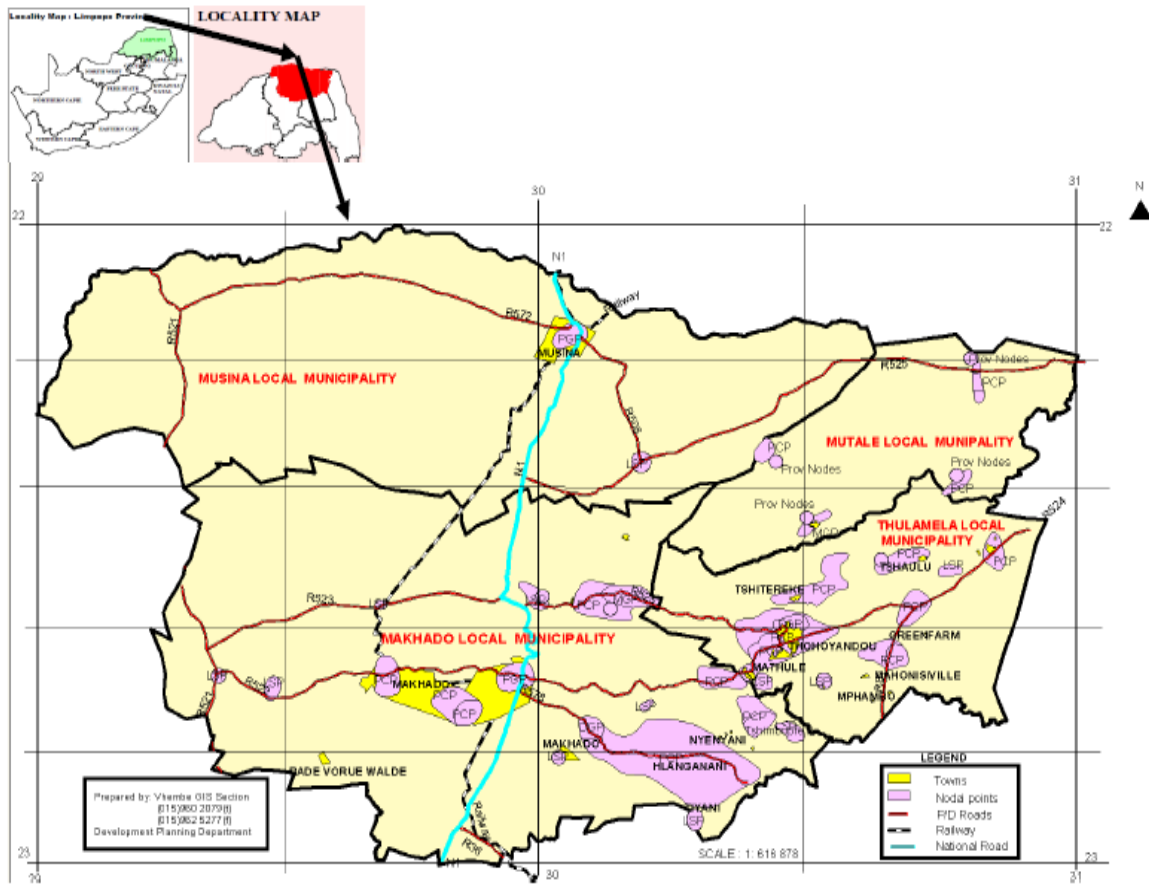


Figure 1: Limpopo Province and Vhembe District Municipality.<sup>1</sup>

### 1.3. Route Alternatives

Route Alternative:	Colour:	Description:
1	Grey	The corridor heads North from Nzhelele Substation along the N1, it is then directed North-West around Musina and continuous North to the Limpopo River.
1 / 2	Red and grey	This section of the corridor is where the red and grey sections overlap. It is the closest point to the Nzhelele Substation. It is directed North along the N1 where it becomes the grey corridor and the other alternative heads North- East and becomes the red corridor.
2	Red	The corridor is directed in a North-Easterly direction from

<sup>1</sup> Vhembe Integrated Development Plan, 2012-2017.



		the Nzhelele Substation toward Maremani Nature Reserve.
<b>2A</b>	Orange	The corridor runs along the R508 heading North, it curves to the North-West toward Musina and curves North outside of Musina till the Limpopo River.
<b>2B</b>	Yellow	The corridor runs in the North-Westerly direction going through areas of conservation.

Table 1: Route alternatives for the Nzhelele- Triangle Power-line Project.

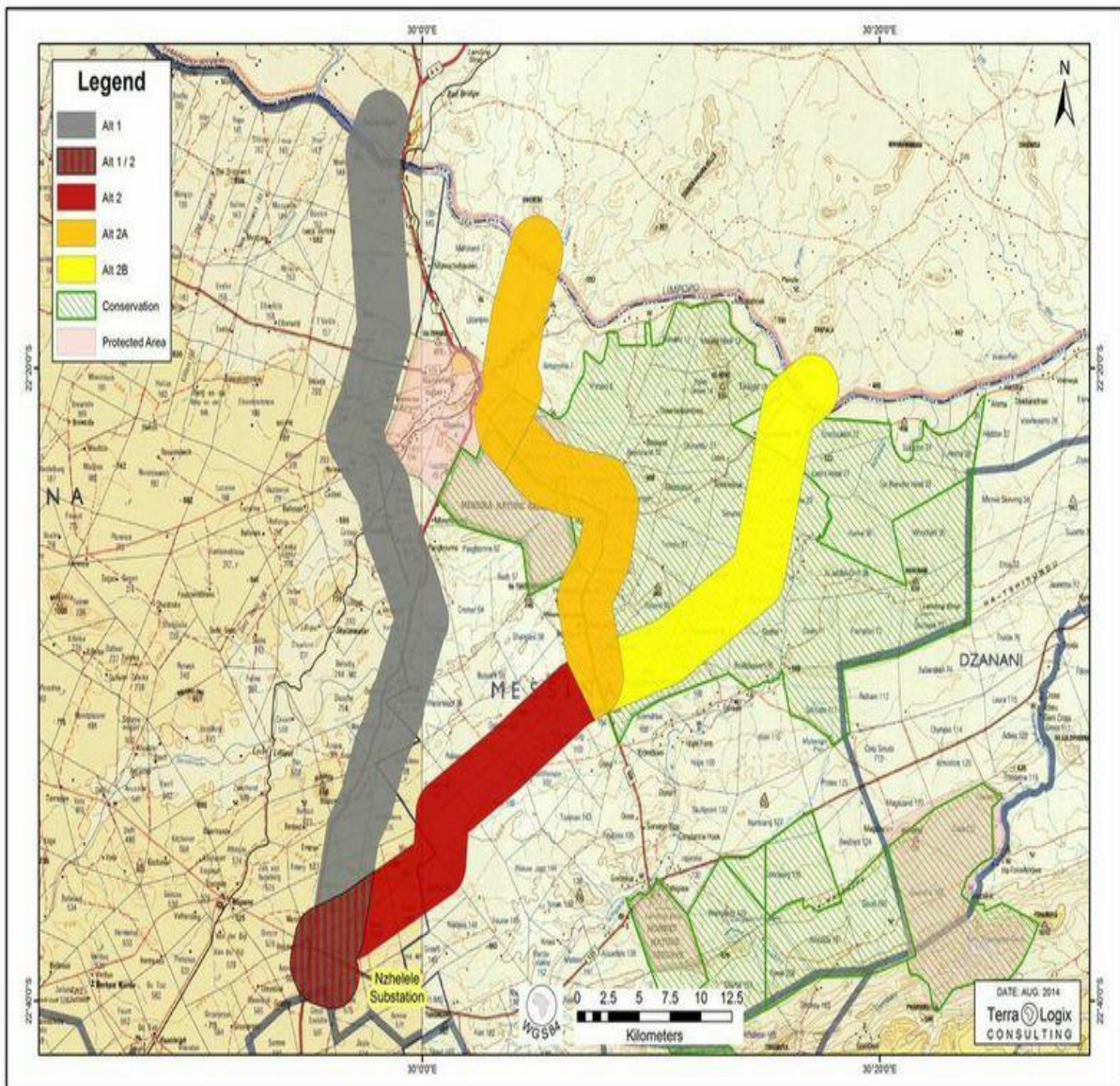


Figure 2: Nzhelele-Triangle Project Alternatives

#### 1.4. Aims

The main aims of the report are as follows:

- To establish a clear understanding of the social environment within the study area,
- To reveal the possible impacts of a positive and negative nature that can become apparent as a result of the proposed project,
- To provide mitigation measures where necessary,
- To analyse the respective data,
- To present key findings,
- To draw conclusions and recommendations from all of the respective phases of research.

#### 1.5. Social objectives

The social objectives are as follows:

- The social fabric or key characteristics of the community are not altered to the extent that it can no longer be identified as the community it previously was.
- Development takes place alongside sustainable guidelines.
- The livelihoods of the local communities, even if they are affected, that they would be restored.
- The development would enhance the state of functioning of the surrounding communities.
- The surrounding communities would benefit from the project by means of job creation and entrepreneurial opportunities.

#### 1.6. Principles to guide the report

The key principles from a global perspective are considered important stem from Frank Vanclay's, "*SIA Principles: International Principles For Social Impact Assessment*," from the Impact Assessment and Project Appraisal, Volume 21, number 1, March 2003, pages 5-11, Beech Tree Publishing for the International Association of Impact Assessment.

There are 12 principles that should guide the report that are particular to the SIA context:

- Fairness as a core component in all aspects of the process and reporting;
- The large majority of effects of a social nature can be foreseen;
- Endeavours can be altered such that the detrimental effects can be diminished and the beneficial effects formed to a greater extent;
- The SIA must play a key role in the growth endeavour and therefore present in all phases of the project;
- Emphasis on "socially sustainable development" should occur where the SIA adds value in the decision –making of optimal growth options or "alternatives".



- In the carrying out of processes and reporting, methods formed to develop the “social and human capital of local communities and to strengthen democratic process” should be examined.
- The manner in which people who are affected by the respective project can receive positive effects needs to be explored.
- “Alternatives” of the respective project should be carefully considered from the SIA perspective, and particularly where there are “unavoidable impacts”.
- Attention should be paid to possible mitigation methods.
- The information on the ground and that of the indigenous people of the area and respect for the societies’ principles should be implemented and included in the report.
- All processes and reporting should be done in harmonious ways.
- The rights of people should be protected and guide behaviour.<sup>2</sup>

### 1.7. Definitions

The concepts that are valuable to the social environment in which the impacts occur and the core ideas explained used in this report are indicated as follows:

- ✓ Social impacts;
- ✓ The Social Impact Assessment;
- ✓ Social change processes;
- ✓ Sense of place;
- ✓ Place attachment;
- ✓ Sense of community;
- ✓ Stakeholders;
- ✓ Fatal flaws and red flags.

Social impacts are considered as effects that manifest directly on people that can cause a change in their individual culture where the scale of change can exist personally, within the context of a support system or group of people.<sup>3</sup> Social impacts can be expressed in more detail with the use of Vanclay’s definition which defines them as:

“The consequences to human populations of any public or private actions (these include policies, programmes, plans and/or projects) that alter the ways in which people live, work, play, relate to one another, organise to meet their needs and generally live and cope as members of society. These impacts are felt at various levels, including individual level, family or household level, community, organisation or society level. Some impacts are felt by the body as a physical reality, while other social impacts are perceptual or emotional”.<sup>4</sup>

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<sup>2</sup> Vanclay, 2003,, “SIA Principles: International Principles For Social Impact Assessment,” from the Impact Assessment and Project Appraisal, Volume 21, number 1, pages 5-11.

<sup>3</sup> Vanclay, 2002.

<sup>4</sup> Vanclay, 2002.



The effects of development are unique to the setting and the project at hand.<sup>5</sup> This essentially implies that the social impacts are the effects of development that appear in different intensities and respectively different ways—they are also particular to the context.

Following the above, there are numerous definitions of the Social Impact Assessment, however, one from Vanclay is used and described as:

“The process of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative of planned interventions (policies, programs, plans, and projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment”.<sup>6</sup>

It is therefore valuable to clarify the meaning of “social change processes,” as a shift that occurs which alters the traits a community considers as a part of their identity. It generally takes place irrespective of what particular setting is at hand and in some cases related to particular case studies, can spur on social impacts.<sup>7</sup>

‘Sense of place’ is a concept that involves a person’s bond or association with a site and the personal interpretation of it as such.<sup>8</sup> It can also be explained as:

“An individual’s personal connection to and sensory experience of a built or biophysical place as understood through meanings given to its characteristics. These include built landmarks/location, biophysical landmarks/features, spots of emotional significance and the social/community environment”.<sup>9</sup>

‘Place attachment’ refers to the level in which a person has a connection to the site.<sup>10</sup> In a more detailed sense it can be defined as:

“The environmental settings to which people are emotionally and culturally attached, to varying degrees in a positive sense. Attachments to places are developed through interaction with or experience of them regularly and over time, or through story-telling about and memory of them”.<sup>11</sup>

‘Sense of community’ is best explained by the following definition:

“An individual’s personal feeling of being recognised and included in a community based on their experience of membership, and factors identified by that individual that give them a sense of community membership. These can include way of life, norms and social order,

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<sup>5</sup> Vanclay, 2002.

<sup>6</sup> Vanclay, 2006.

<sup>7</sup> Vanclay, 2003.

<sup>8</sup> Baldwin, 2015.

<sup>9</sup> Baldwin, 2015.

<sup>10</sup> Baldwin, 2015.

<sup>11</sup> Baldwin, 2015.



interaction and relationships among members, long-term residence, and participating in events".<sup>12</sup>

The definitions addressed lead one to the important concept of "stakeholders", who are considered as:

"Any individual, group, or institution who has a vested interest in the natural resources of the project area and/or who potentially will be affected by project activities and have something to gain or lose if conditions change or stay the same".<sup>13</sup>

This definition can also be applied to the social context of a given project.

Lastly, it is important in any Impact Assessment, that the concept of a fatal flaw and a red flag is raised.

A fatal flaw is defined as "a significant long-term negative consequence on the affected social environment that is extremely difficult to mitigate or undesirable to promote".<sup>14</sup> Whilst a red flag is can be explained as "a potentially serious impact that could have medium – to long-term negative consequences on the affect social of biophysical environments that can only be mitigated at significant will, effort and cost".<sup>15</sup>

## 1.9. Main influence of the study

The key influence in the way the study was carried out was the Guideline for Involving Social Assessment Specialists in EIA Processes for the Department of Environmental Affairs and Development Planning.<sup>16</sup> It looks at main ideas that are fundamental to the SIA process and is based on the following main actions:

- The full understanding of the meaning of social impacts as well as the Social Impact Assessment (SIA) and its process.
- Identifying the nature of the project such that it requires a SIA.
- Providing baseline information.
- Pin-pointing the key concerns in the social environment which would need to be retorted to.
- Identifying and responding to the respective impacts at hand.
- Formulating relevant recommendations.<sup>17</sup>

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<sup>12</sup> Baldwin, 2015.

<sup>13</sup> WWF, 2005.

<sup>14</sup> United Nations Environmental Program, 2007.

<sup>15</sup> United Nations Environmental Program, 2007.

<sup>16</sup> Barbour, 2007.

<sup>17</sup> Barbour, 2007.



## 1.10. Methodology

The main components that are representative of the process of the SIA, are the collection of primary and secondary data, where the following is important:

- A clear scope of the project,
- Literature review,
- Analysis of primary and secondary data,
- Impact analysis discussion.

### 1.9.1. Determining the scope of the project

The scope of the project was indicated by Baagi Environmental Consultancy prior to the site visit and allowed for a clear understanding of the elements that would be a part of the study.

### 1.9.2 Literature review

Already existing data was gathered and analysed such that an information base could be established that would inform the study. It forms a large part of the baseline information of the report that contextualises the project and provides a good level of understanding of the area.

### 1.9.3 Collection and analysis of primary data

Primary data is by nature that which is collected by means of observation, questionnaires and or interviews. This study was informed by these methods.

The research was conducted in key phases such as the site visit which took place in January 2014, and Fieldwork which took place in October 2014 and questionnaires that were sent out in again in February 2015. They involved investigating the respective corridors and public participation meetings respectively.

The consultative process had three main forms where information was gathered. It was through interviews that took place after public meetings, through questionnaires that were sent out to all Interested and Affected Parties (I&AP) who were listed and telephone calls to certain members of the I&AP database who were positioned within one of the corridors where more information was sought after in that context.

### 1.9.4. Analysis of secondary data

Secondary data is linked to the literature review and in this regard, local and district Integrated Development Plans, local and district Economic Development Plans, respective strategies, plans, reviews and online sources were consulted. This resulted in the establishment of a general social profile for the larger context of the Vhembe District as well Musina Local Municipality and the surrounds.

### 1.9.5. Impact Analysis

This section of the study reveals the impacts that have been identified, explains them and gives an indication of a rating of the impact. The rating system has been specified by Baagi Environmental Consultancy and is indicated below.

Aspect		Definition
<b>Probability</b>		<b>This describes the likelihood of the impact actually occurring</b>
	Description	Definition
	<b>Improbable</b>	The possibility of the impact occurring is very low, due to the circumstances, design or experience.
	<b>Probable</b>	There is a probability that the impact will occur to the extent that provision must be made therefore.
	<b>Highly Probable</b>	It is most likely that the impact will occur at some stage of the development.
	<b>Definite</b>	The impact will take place regardless of any prevention plans and there can only be relied on mitigatory measures or contingency plans to contain the effect.
Aspect		Definition
<b>Duration</b>		<b>The lifetime of the impact</b>
	Description	Definition
	<b>Short Term</b>	The impact will either disappear with mitigation or will be mitigated through natural processes in a time span shorter than any of the phases.
	<b>Medium Term</b>	The impact will last up to the end of the phases,

		where after it will be negated.
	<b>Long Term</b>	The impact will last for the entire operational phase of the project but will be mitigated by direct human action or by natural processes thereafter.
	<b>Permanent</b>	The impact is non-transitory. Mitigation either by man or natural processes will not occur in such a way or in such a time span that the impact can be considered transient.
<b>Aspect</b>		<b>Definition</b>
<b>Scale</b>		<b>The physical and spatial size of the impact</b>
	<b>Description</b>	<b>Definition</b>
	<b>Local</b>	The impacted area extends only as far as the activity, e.g. footprint
	<b>Site</b>	The impact could affect the whole, or a measurable portion of the above mentioned properties.
	<b>Regional</b>	The impact could affect the area including the neighbouring residential areas.
<b>Aspect</b>		<b>Definition</b>
<b>Magnitude/ Severity</b>		<b>Does the impact destroy the environment, or alter its function</b>
	<b>Description</b>	<b>Definition</b>
	<b>Low</b>	The impact alters the affected environment in such a way that natural processes are not affected.
	<b>Medium</b>	The affected environment is altered, but functions and processes continue in a modified way.
	<b>High</b>	Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.
<b>Aspect</b>		<b>Definition</b>
<b>Significance</b>		<b>This is an indication of the importance of the impact in terms of both physical extent and time</b>

		scale, and therefore indicates the level of mitigation required.
	<b>Description</b>	<b>Definition</b>
	<b>Negligible</b>	The impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.
	<b>Low</b>	The impact is limited in extent, has low to medium intensity; whatever its probability of occurrence is, the impact will not have a material effect on the decision and is likely to require management intervention with increased costs.
	<b>Moderate</b>	The impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.
	<b>High</b>	The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in mitigation.

<b>Aspect</b>	<b>Description</b>	<b>Weight</b>
<b>Probability</b>	<b>Improbable</b>	<b>1</b>
	<b>Probable</b>	<b>2</b>
	<b>Highly Probable</b>	<b>4</b>
	<b>Definite</b>	<b>5</b>
<b>Duration</b>	<b>Short term</b>	<b>1</b>
	<b>Medium term</b>	<b>3</b>
	<b>Long term</b>	<b>4</b>
	<b>Permanent</b>	<b>5</b>
<b>Scale</b>	<b>Local</b>	<b>1</b>
	<b>Site</b>	<b>2</b>
	<b>Regional</b>	<b>3</b>

<b>Magnitude/Severity</b>	<b>Low</b>	<b>2</b>
	<b>Medium</b>	<b>6</b>
	<b>High</b>	<b>8</b>
<b>Significance</b>	<b>Sum (Duration, Scale, Magnitude) x Probability</b>	
	<b>Negligible</b>	<b>≤20</b>
	<b>Low</b>	<b>&gt;20 ≤40</b>
	<b>Moderate</b>	<b>&gt;40 ≤60</b>
	<b>High</b>	<b>&gt;60</b>

Table 2: Significance criteria

### 1.10. Assumptions and Limitations

It is valuable that the following be taken into consideration with regard to the SIA:

- The report is based on information that is currently available.
- The information supplied by the client is assumed to be correct.
- The secondary data collected is used according to the most recent data of its type that is available, and for most documents it is not 2016. Therefore there is a possibility that there may have been changes to the data or respective figures used in this research.
- Questionnaires were sent out to respective Interested and Affected Parties, stakeholders and communities and the ones that were returned in time to be processed, have informed this study.

### 1.11. Declaration of Independence

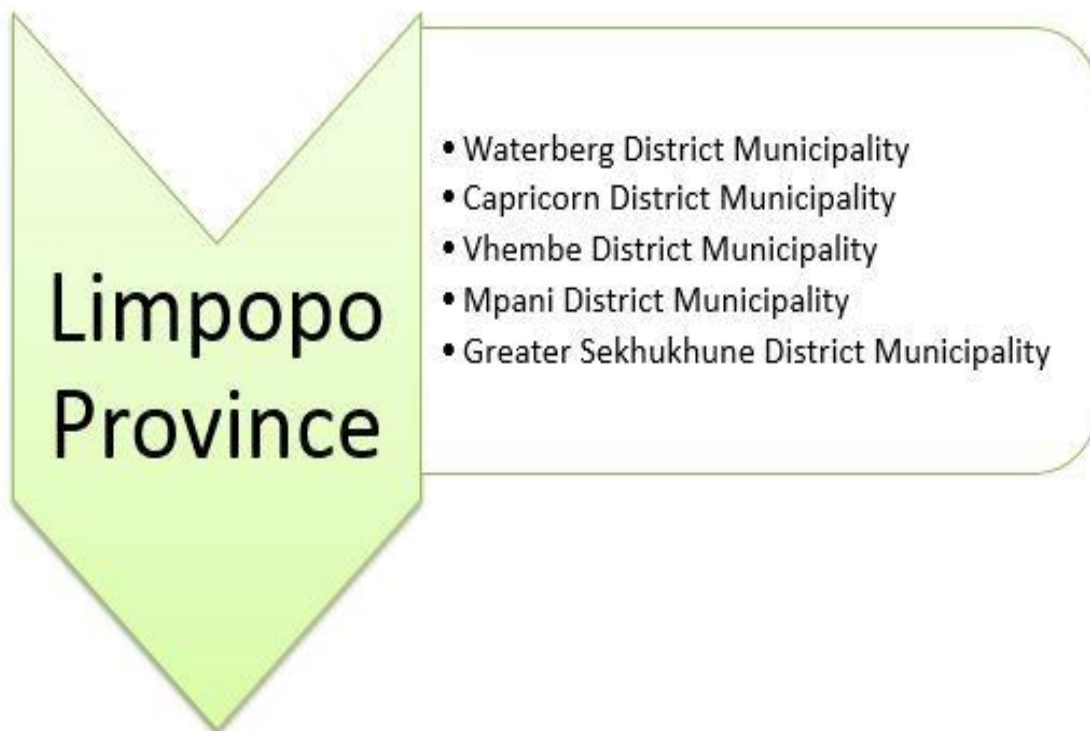
This confirms that Chanel Emily Turner, the specialist who has prepared this Social Impact Assessment Study is independent and has no vested interests in the project at hand.



## 2. BASELINE INFORMATION

### 2.1. Introduction

The Limpopo Province is comprised of five district municipalities that are represented in the figure below, where the district municipality relevant to the study is the Vhembe District Municipality. The respective district municipalities have local municipalities that form a part of them and in this context, it is the Musina Local Municipality that features in the study. This municipality will be investigated in terms of the most dominant socio-economic qualities of the region, which will be presented as baseline information.



*Figure 3: District municipalities of the Limpopo Province*

The structure of this section is that it will examine the context of the Limpopo Province and then focus of the Vhembe District Municipality and Musina Local Municipality within it. Therefore, investigating the larger social context and narrowing it down to the more detailed social context.

### 2.2. Limpopo Province and the Vhembe District Municipality

The following graphs and tables following in this section are drawn from the Census 2011 Municipal Report for Limpopo. It is important to pinpoint the comparative value of these figures as they have

respective data represented for all of the district municipalities as well as for the larger context of Limpopo. It allows for a sense of benchmarking for the Vhembe District Municipality with other district municipalities and how this features in the Limpopo Province.

### 2.3.1. Distribution of the population by age and sex in the Vhembe District.

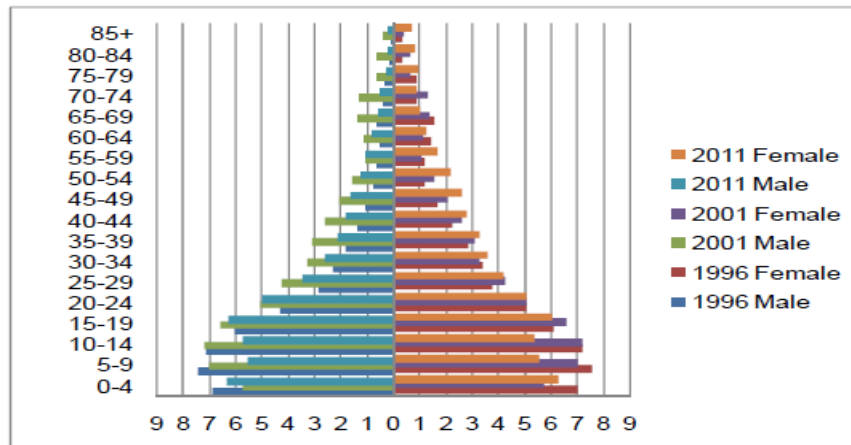


Figure 4: Distribution of the population by age and sex, Vhembe District -1996,2001,2011.<sup>18</sup>

The table above represents the distribution of the population by age and sex in the Vhembe District Municipality. The most relevant statics to this study are the most recent of 2011, which show that the highest numbers of females are between 0-4 years and 15-19 years respectively and this trend is consistent for the males as well. Generally speaking for both the male and female groups in 2011, the majority of the population is between 0-24 years of age.

This indicates a very young majority population in the Vhembe District for the 2011 time period.

### 2.3.2. Growth rates

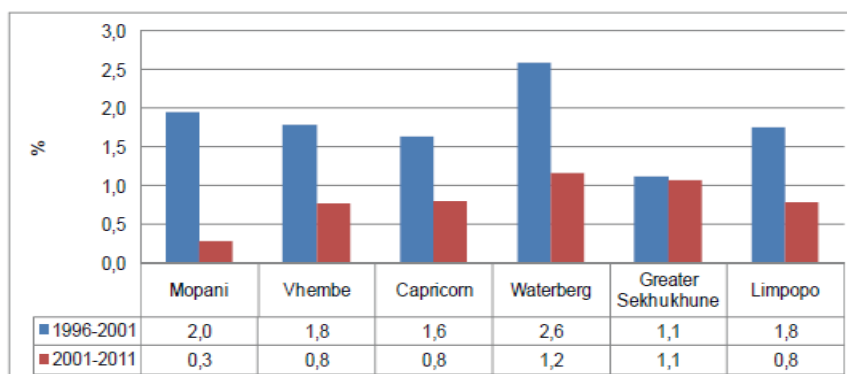


Figure 5: Population growth rates by district municipality-1996,2001,2011.<sup>19</sup>

<sup>18</sup> Census 2011 Municipal Report: Limpopo.

<sup>19</sup> Census 2011 Municipal Report: Limpopo.

The graph indicates that there was a drop in the population growth of the Vhembe District Municipality by 1% between 1996-2001 and 2001-2011 timeframes. This corresponds with the trend of the Limpopo Province. The most drastic drop occurred in the Mopani District Municipality and was that of 1, 7%.

### 2.3.3. Population groups

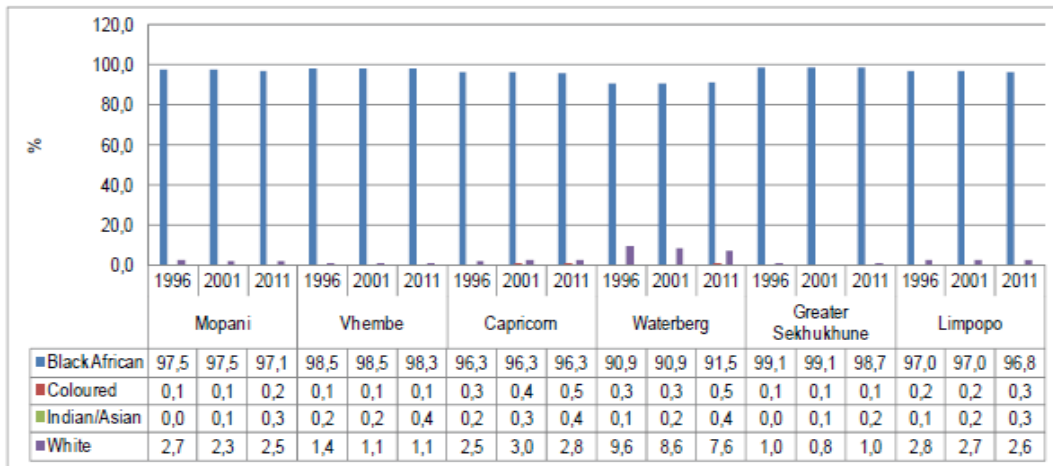
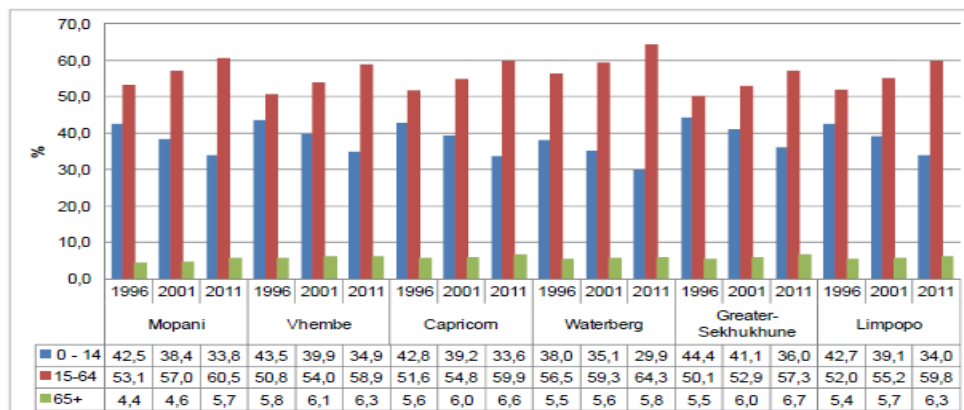


Figure 6: Percentage distribution of the population group by population group and district municipality-1996, 2001 and 2011.<sup>20</sup>

The diagram shows that the majority of the population group in the Limpopo Province is that of Black African people. A very small number of white people live in the province. This trend is also evident within the Vhembe District Municipality, from the year 1996- 2011, as well as for the Limpopo Province.

### 2.3.4. Population



<sup>20</sup> Census 2011 Municipal Report: Limpopo.

Figure 7: Population by functional age group and district municipality- 1996, 2001, 2011.<sup>21</sup>

In the Vhembe District Municipality, the largest parts of the “functional” population are between the ages of 15-64, which account for an estimated 58% of the population in 2011. This figure increased from 50% in 1996, which shows an increase of 8% within 5 years. This is in correspondence with the trend of the larger context of the Limpopo Province.

### 2.3.5. Education levels

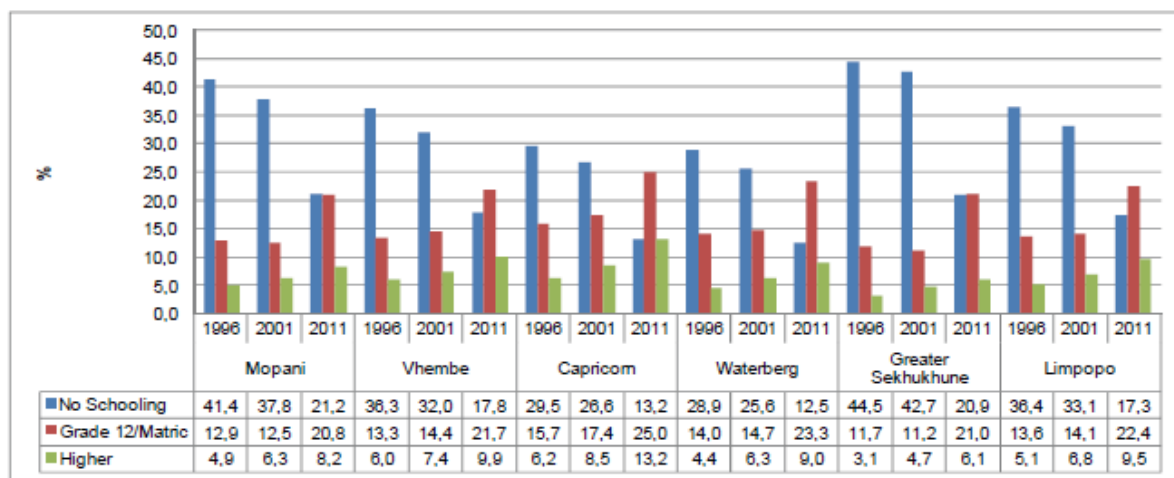


Figure 8: Distribution of the population aged 20 and older by the highest level of education and district municipality 1996, 2001, 2011.<sup>22</sup>

The Vhembe District Municipality has seen a decrease in the percentage of people who have no schooling from 1996-2011 by an estimated 19%. There has therefore been an increase in education levels which is also indicated in the graph by the increase in percentage of the people who have a Grade 12 (Matric) education by an estimated 8% between 1996 -2011. There has also been an increase in percentage of people who have higher education from an estimated 6- 10% between 1996 -2011. These trend are also in line with the general pattern in the Limpopo Province.

### 2.3.6. Unemployment rates

<sup>21</sup> Census 2011 Municipal Report: Limpopo.

<sup>22</sup> Census 2011 Municipal Report: Limpopo.

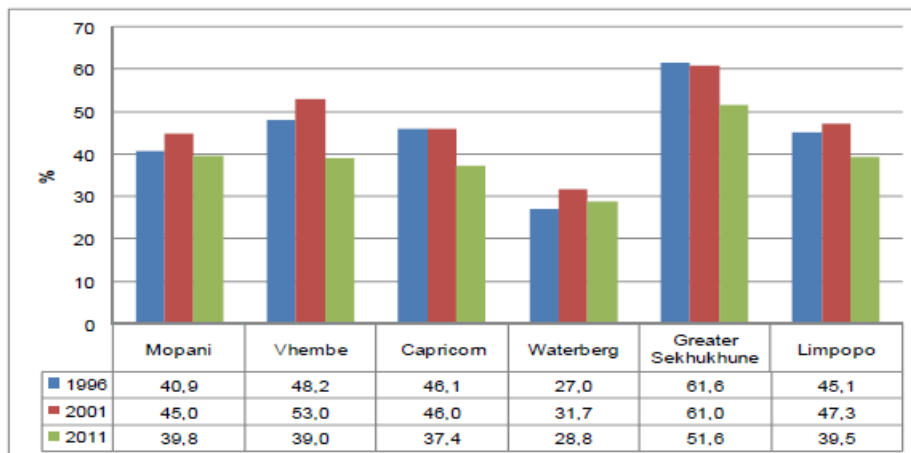


Figure 9: Unemployment rate (official definition) by district municipality-1996, 2001, 2011.<sup>23</sup>

The unemployment rate of the Vhembe District Municipality was higher than that of the Limpopo Province rates in 1996 and 2001, but similar in 2011. The Vhembe District Municipality showed an estimated 5% increase between 1999-2001 and a 14% drop in unemployment between 2001 and 2011.

### 2.3.7. Main types of dwellings

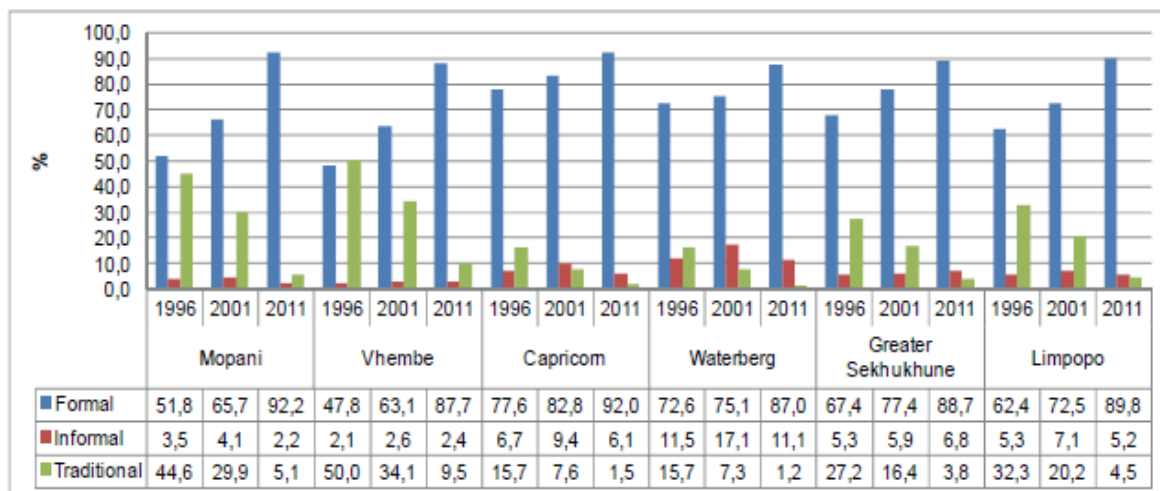


Figure 10: Percentage distribution of households by type of main dwelling and district municipality-1996, 2001, 2011.<sup>24</sup>

The Vhembe District Municipality shows higher percentages for formal and traditional housing than for informal housing. The percentages of informal housing are very low and under 5%. In 1996, the percentages for formal and traditional housing are very similar, an estimate 48% and 50% respectively. It shows that during this timeframe these were the two main forms of housing in the

<sup>23</sup> Census 2011 Municipal Report: Limpopo.

<sup>24</sup> Census 2011 Municipal Report: Limpopo.

district. This changed from 2001- 2011 as the percentage of formal housing increase to an estimated 78% in 2011. From 2001 formal housing became more a more predominant form of housing than traditional housing and informal housing. This similar trend is indicated in the figures for the Limpopo Province.

### 2.3.8. Percentage of households with main appliances

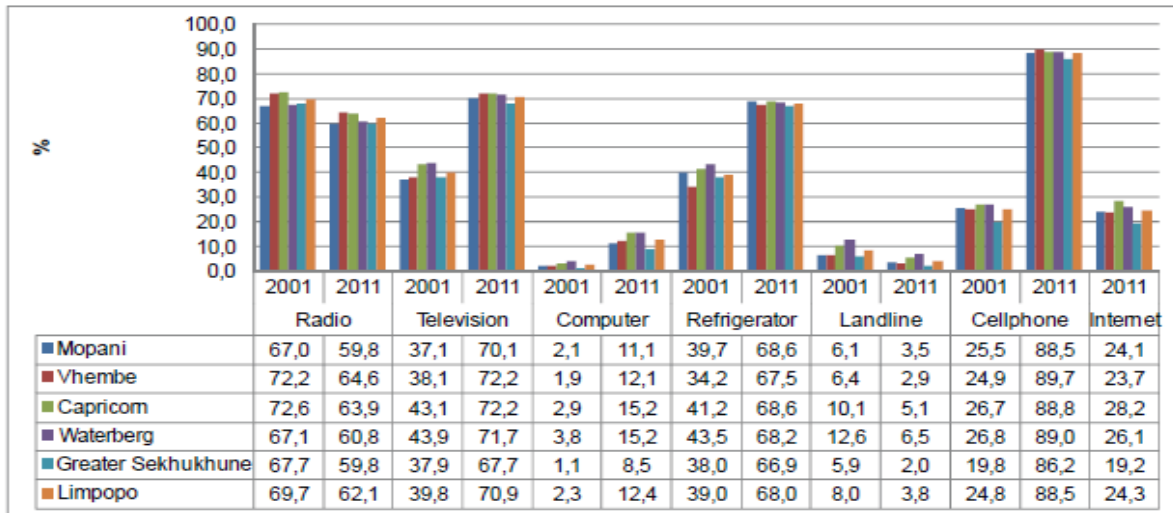


Figure 11: Distribution of households with a radio, television, computer, refrigeration, cell phone, landline/telephone and access to internet by district municipality-2001 and 2011.<sup>25</sup>

As seen in the diagram, it is evident that there are general key trends that can be seen as a whole from 2001-2011. One of these trends is the dramatic increase in cellphones in all of the District Municipalities and furthermore increases in the use of televisions and refrigerators as the most dominant increases. With regard to the Vhembe District Municipality, it is in line with the general trends and the most dramatic increase was of cellphones between the years 2001-2011.

### 2.3.9. Employment status

<sup>25</sup> Census 2011 Municipal Report: Limpopo.

Municipality	Employed			Unemployed			Unemployed Rate		
	1996	2001	2011	1996	2001	2011	1996	2001	2011
DC33: Mopani	128 123	159 387	170 348	88 735	130 662	112 563	40,9	45,0	39,8
LIM331: Greater Giyani	19 633	20 990	25 278	20 428	3 188	22 508	51,0	60,3	47,1
LIM332: Greater Letaba	18 029	27 350	26 591	17 725	19 867	18 637	49,6	42,1	41,2
LIM333: Greater Tzaneen	54 016	65 200	72 485	31 833	48 139	42 351	37,1	42,5	36,9
LIM334: Ba-Phalaborwa	25 976	30 983	33 695	10 750	20 802	20 196	29,3	40,2	37,5
LIM335: Maruleng	10 469	14 864	12 299	7 999	9 965	8 872	43,3	40,1	41,9
DC34: Vhembe	126 374	138 021	185 452	117 809	155 818	118 724	48,2	53,0	39,0
LIM342: Mutale	4 963	6 946	9 321	10 561	9 150	8 953	68,0	56,8	49,0
LIM343: Thulamela	53 319	55 458	75 224	60 213	81 945	58 732	53,0	56,6	43,8
LIM341: Musina	12 549	16 173	23 754	1 706	5 378	5 554	12,0	25,0	19,0
LIM344: Makhado	55 543	59 445	77 154	45 329	59 345	45 485	44,9	50,0	37,1
DC35: Capricorn	122 878	154 257	221 464	105 112	131 223	132 331	46,1	46,0	37,4
LIM351: Blouberg	10 898	16 548	15 296	12 804	11 839	10 187	54,0	41,7	40,0
LIM352: Aganang	8 796	8 652	11 314	13 622	12 887	11 532	60,8	59,8	50,5
LIM353: Molemole	13 352	16 189	15 106	9 523	10 361	11 318	41,6	39,0	42,8
LIM354: Polokwane	69 426	93 574	152 687	44 396	66 379	73 881	39,0	41,5	32,6
LIM355: Lepele-Nkumpi	20 407	19 293	27 061	24 768	29 757	25 413	54,8	60,7	48,4
DC36: Waterberg	109 089	134 186	155 652	40 376	62 410	62 949	27,0	31,7	28,8
LIM361: Thabazimbi	28 712	26 903	29 605	2 540	7 143	7 304	8,1	21,0	19,8
LIM362: Lephalale	16 524	22 070	31 537	6 751	5 013	9 665	29,0	18,5	23,4
LIM364: Mookgopong	5 901	13 346	10 169	392	2 742	3 439	6,2	17,0	25,3
LIM365: Modimolle	15 673	20 549	18 344	1 975	6 889	5 234	11,2	25,1	22,2
LIM366: Bela-Bela	12 679	14 318	19 787	3 393	6 953	5 880	21,1	32,7	22,9
LIM367: Mogalakwena	29 600	37 001	46 210	25 325	33 670	31 438	46,1	47,6	40,5
DC47: Greater Sekhukhune	60 860	70 481	124 065	97 622	110 026	132 059	61,6	61,0	51,6
LIM471: Ephraim Mogale	11 207	15 632	17 876	10 005	12 721	12 872	47,2	44,9	41,9
LIM472: Elias Motsoaledi	19 696	20 155	29 669	23 862	24 027	23 764	54,8	54,4	44,5
LIM473: Makhuduthamaga	12 409	10 686	19 254	29 370	32 174	32 662	70,3	75,1	62,9
LIM474: Fetakgomo	3 611	4 861	9 111	9 921	10 449	13 052	73,3	68,3	58,9
LIM475: Greater Tubatse	13 938	19 147	48 154	24 464	30 654	49 709	63,7	61,6	50,8
<b>Limpopo</b>	<b>547 323</b>	<b>656 332</b>	<b>856 982</b>	<b>449 654</b>	<b>590 139</b>	<b>558 625</b>	<b>45,1</b>	<b>47,3</b>	<b>39,5</b>

Figure 12: Distribution of population aged between 15 and 64 years by employment status-1996, 2001, 2011.<sup>26</sup>

The table shows the respective figures of people employed, unemployed and the employment rate for Limpopo, the respective District Municipalities and the Local Municipalities that form a part of them. For the Vhembe District Municipality, it is evident that the employment numbers increased and the unemployment numbers decreased from 1996-2011. The last recorded unemployment rate for the district in 2011 was 39%. This is lower than the rate for Limpopo for same time period. The unemployment rate for Musina in particular is lower than both the Vhembe District Municipality's and Limpopo's figure at 19%.

### 2.3.10. Electricity

<sup>26</sup> Census 2011 Municipal Report: Limpopo.



Municipality	lighting			cooking			Heating		
	1996	2001	2011	1996	2001	2011	1996	2001	2011
<b>DC33: Mopani</b>	<b>100 989</b>	<b>162 612</b>	<b>262 891</b>	<b>42 104</b>	<b>54 238</b>	<b>119 544</b>	<b>40 086</b>	<b>63 167</b>	<b>111 840</b>
LIM331: Greater Giyani	19 258	35 716	56 586	6 267	8 647	14 765	6 101	10 389	18 493
LIM332: Greater Letaba	20 772	32 320	52 878	4 998	7 445	18 166	4 747	9 725	18 327
LIM333: Greater Tzaneen	39 803	59 425	93 916	16 402	19 988	51 513	15 634	23 301	45 716
LIM334: Ba-Phalaborwa	16 027	23 594	37 345	11 680	14 915	27 802	10 977	15 765	22 874
LIM335: Maruleng	5 332	11 556	22 186	2 756	3 243	7 299	2 626	3 987	6 431
<b>DC34: Vhembe</b>	<b>64 324</b>	<b>161 952</b>	<b>292 261</b>	<b>35 193</b>	<b>52 234</b>	<b>113 270</b>	<b>34 677</b>	<b>57 608</b>	<b>119 326</b>
LIM342: Mutale	1 110	7 042	19 782	632	1 471	4 048	605	1 481	4 638
LIM343: Thulamela	33 624	74 736	136 567	16 406	23 290	47 928	16 419	24 291	50 715
LIM341: Musina	4 749	7 205	15 321	3 711	4 715	13 177	3 608	5 391	10 727
LIM344: Makhado	24 841	72 969	120 591	14 444	22 758	48 117	14 044	26 444	53 249
<b>DC35: Capricorn</b>	<b>69 951</b>	<b>159 583</b>	<b>299 677</b>	<b>47 089</b>	<b>86 178</b>	<b>214 501</b>	<b>44 416</b>	<b>88 924</b>	<b>188 805</b>
LIM351: Blouberg	5 720	15 370	36 235	2 627	4 318	13 349	2 159	4 924	12 926
LIM352: Aganang	3 992	12 459	32 096	1 695	4 329	18 231	1 497	3 962	14 426
LIM353: Molemole	8 753	20 859	28 763	5 097	8 836	21 262	4 774	8 731	20 204
LIM354: Polokwane	36 414	79 527	147 710	27 353	51 970	126 149	26 202	52 781	108 301
LIM355: Lepele-Nkumpi	15 073	31 368	54 873	10 317	16 725	35 511	9 785	18 535	32 948
<b>DC36: Waterberg</b>	<b>52 579</b>	<b>95 285</b>	<b>155 989</b>	<b>36 870</b>	<b>52 398</b>	<b>117 823</b>	<b>36 184</b>	<b>55 314</b>	<b>106 632</b>
LIM361: Thabazimbi	7 819	10 039	19 269	6 664	7 985	18 332	6 668	8 010	17 062
LIM362: Lephalele	12 592	14 890	25 398	7 008	7 530	18 046	7 016	8 826	18 059
LIM364: Mookgopong	3 178	4 876	8 465	2 830	3 102	7 540	2 665	3 180	6 119
LIM365: Modimolle	5 628	8 984	14 602	4 777	6 875	13 065	4 653	7 129	11 439
LIM366: Bela-Bela	6 790	8 880	15 352	5 299	5 288	13 662	4 867	5 319	11 898
LIM367: Mogalakwena	16 574	48 017	72 903	10 292	21 617	47 180	10 315	22 851	42 055
<b>DC47: Greater Sekhukhune</b>	<b>63 950</b>	<b>124 173</b>	<b>226 677</b>	<b>25 303</b>	<b>37 778</b>	<b>143 786</b>	<b>23 449</b>	<b>40 966</b>	<b>111 212</b>
LIM471: Ephraim Mogale	10 697	19 938	28 927	4 511	6 381	15 086	4 219	8 455	13 341
LIM472: Elias Motsoaledi	29 505	38 906	54 902	10 495	10 398	37 830	9 624	11 402	30 433
LIM473: Makhuduthamaga	12 368	32 884	58 951	5 058	8 967	32 293	4 615	8 951	23 718
LIM474: Fetakgomo	2 630	7 373	20 914	1 562	3 344	13 202	1 454	3 101	11 033
LIM475: Greater Tubatse	8 750	25 072	62 984	3 677	8 688	45 374	3 537	9 057	32 689
<b>Limpopo</b>	<b>351 793</b>	<b>703 605</b>	<b>1 237 495</b>	<b>186 559</b>	<b>282 825</b>	<b>708 924</b>	<b>178 812</b>	<b>305 978</b>	<b>637 816</b>

Figure 13: Distribution of households using electricity for lighting, heating, cooking by municipality- 1996, 2001, 2011.<sup>27</sup>

The number of households using electricity for lighting, cooking and heating in the Vhembe District Municipality from 1996-2011 has drastically increased. The number of households using electricity for lighting in the Vhembe District Municipality was more than four times more in 2011 than it was in 1996. The number of households using electricity for cooking was three times more in 2011 than it was in 1996. The number of households using electricity for heating was also more than three times more in 2011 than it was in 1996.

This indicates that there is a large increase in the number of households using electricity within their homes for domestic purposes.

#### 2.4. Musina Local Municipality

Musina Local Municipality is the focus of this section. The municipality is considered as a Category C Municipality and it is estimated to be 21 407 square kilometres in size.<sup>28</sup> The town of Musina is positioned as such that it acts as a gateway into South Africa for its surrounding countries by means of the Beit Bridge border post. The origins of the town are largely connected to the emergence of

<sup>27</sup> Census 2011 Municipal Report: Limpopo.

<sup>28</sup> Vhembe Integrated Development Plan, 2012-2017.



the copper mining business and in current times numerous metals are extracted in the vicinity. When copper was initially found, it was recalled as “musina” by the indigenous people, which translates as “spoiler” as it was thought of as a lesser alternative to iron that was what they desired to find. As time has passed tourism has begun to play a valuable part in the money generated in the region as a result of game and hunting establishments. Produce that is grown in the area tends to be that of citrus fruits, mangoes, tomatoes and dates.<sup>29</sup>

#### 2.4.1. Language and Population

In the Musina Municipality the majority of the population group are black African people, by 94%. The second most prominent population group are white people (4,8%). With the influence of the extraction industry in the area and people entering South Africa via the border post has resulted in a multi racial composition of the population as 50% of the people have their first language as Tshivenda, followed by 8,8% Sesotho.<sup>30</sup>

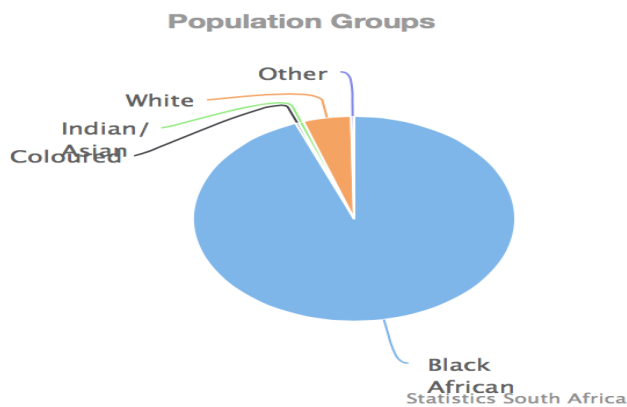
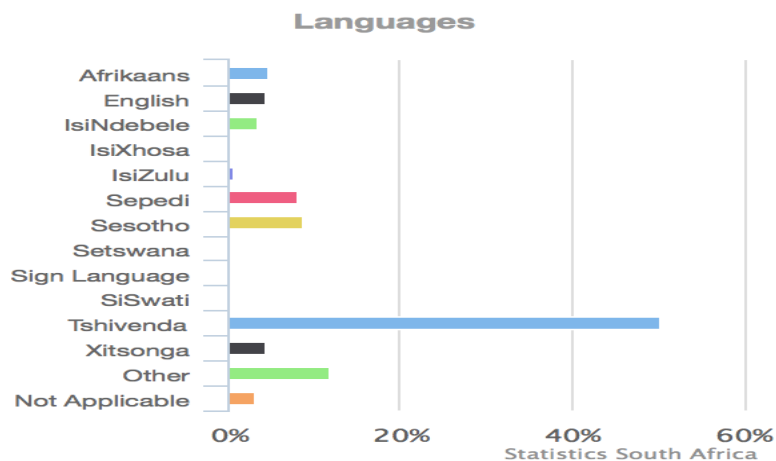


Figure 14: Population groups in Musina.<sup>31</sup>



<sup>29</sup> Stats SA, 2011 census.

<sup>30</sup> Stats SA, 2011 census.

<sup>31</sup> Stats SA, 2011 census.

Figure 15: Languages spoken in Musina Municipality.<sup>32</sup>

The range of languages spoken in the region are represented above.

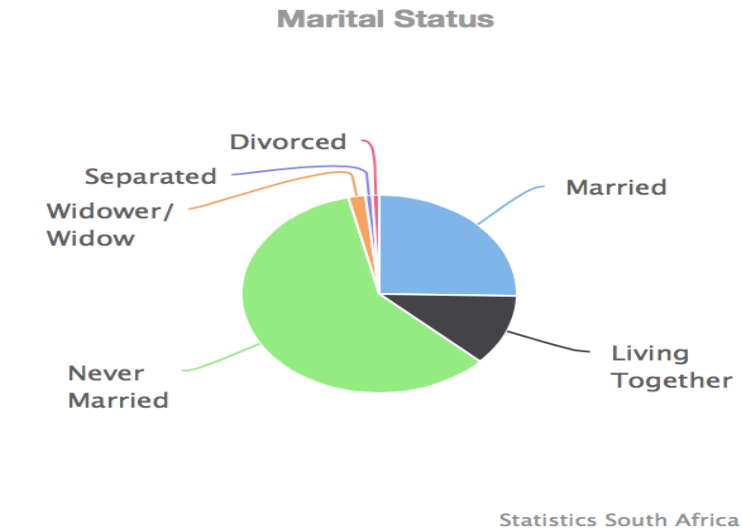


Figure 16: Marital status of population in Musina Municipality.<sup>33</sup>

The figure 15 indicates that 59,4% of people living in the Musina Municipality have never married as the highest figure, whilst 25,3% are married.<sup>34</sup>

#### 2.4.2. Dominant form of housing

The amount of houses in the Musina Municipality is more than 20 000 and a large portion of them (78%) are “block structures”.<sup>35</sup>

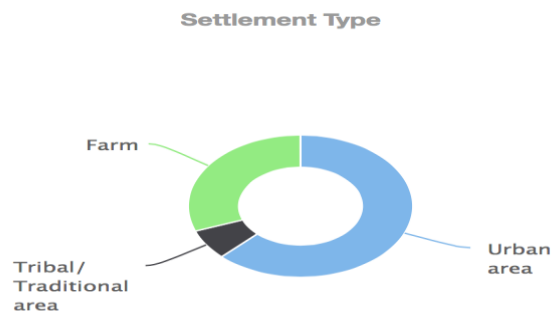


Figure 17: Type of settlements in Musina Municipality.<sup>36</sup>

<sup>32</sup> Stats SA, 2011 census.

<sup>33</sup> Stats SA, 2011 census.

<sup>34</sup> Stats SA, 2011 census.

<sup>35</sup> Stats SA, 2011 census.

As evident in figure 16 the majority of more than half of these houses are located in the town area whilst 30,7% forms a part of the farms outside of the urban area.<sup>37</sup>

### 2.4.3. Internet access and cell phones

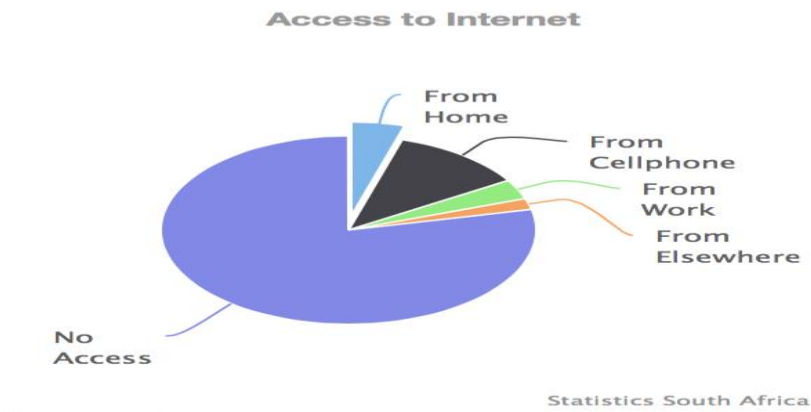


Figure 18: Internet access in Musina Municipality.<sup>38</sup>

The majority of 78,6% of the population living in the Musina Municipality does not have access to the internet as represented in Figure 17. However, 83,1% of the populations owns a cell phone.<sup>39</sup>

### 2.4.4. Average household income

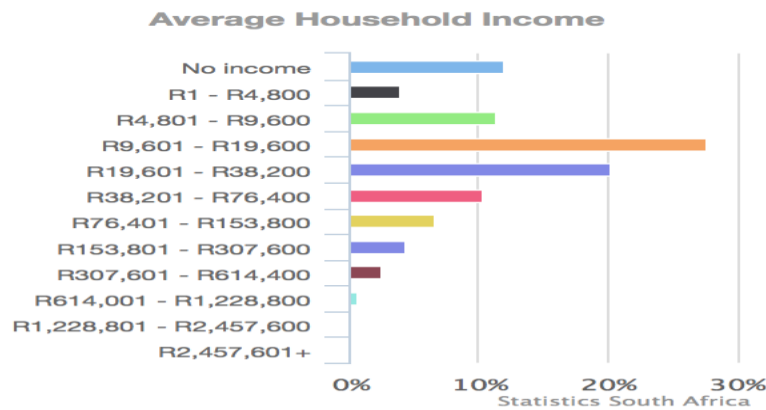


Figure 19: Average household income in Musina Municipality.<sup>40</sup>

The largest portion of the average household income falls within the bracket of R9601-R19600 with 27,8% of the people in the Local Municipality being a part of it. Following after this bracket is the

<sup>36</sup> Stats SA, 2011 census.

<sup>37</sup> Stats SA, 2011 census.

<sup>38</sup> Stats SA, 2011 census.

<sup>39</sup> Stats SA, 2011 census.

<sup>40</sup>

R19601-38200 bracket that accounts for 20,3%. No income is the third largest portion of the average household income.<sup>41</sup>

#### 2.4.5. Population status

Musina has an estimated population of 68 359 people. The majority of 69,2% are of the ages between 15- 64 years of age. There is an estimated increase in the population annually of 5,53%.

The demographics show that most of the population are women (54,4%) and the majority of the population are the youth of under 20 years old. The largest part of the population is located outside of the urban areas. The Vhembe District is also the one which is most affected by the current circumstances in Zimbabwe due to its location. It is impacted by the number of citizens coming into South Africa from Zimbabwe in need of amenities and facilities that are lacking in Zimbabwe.<sup>42</sup>

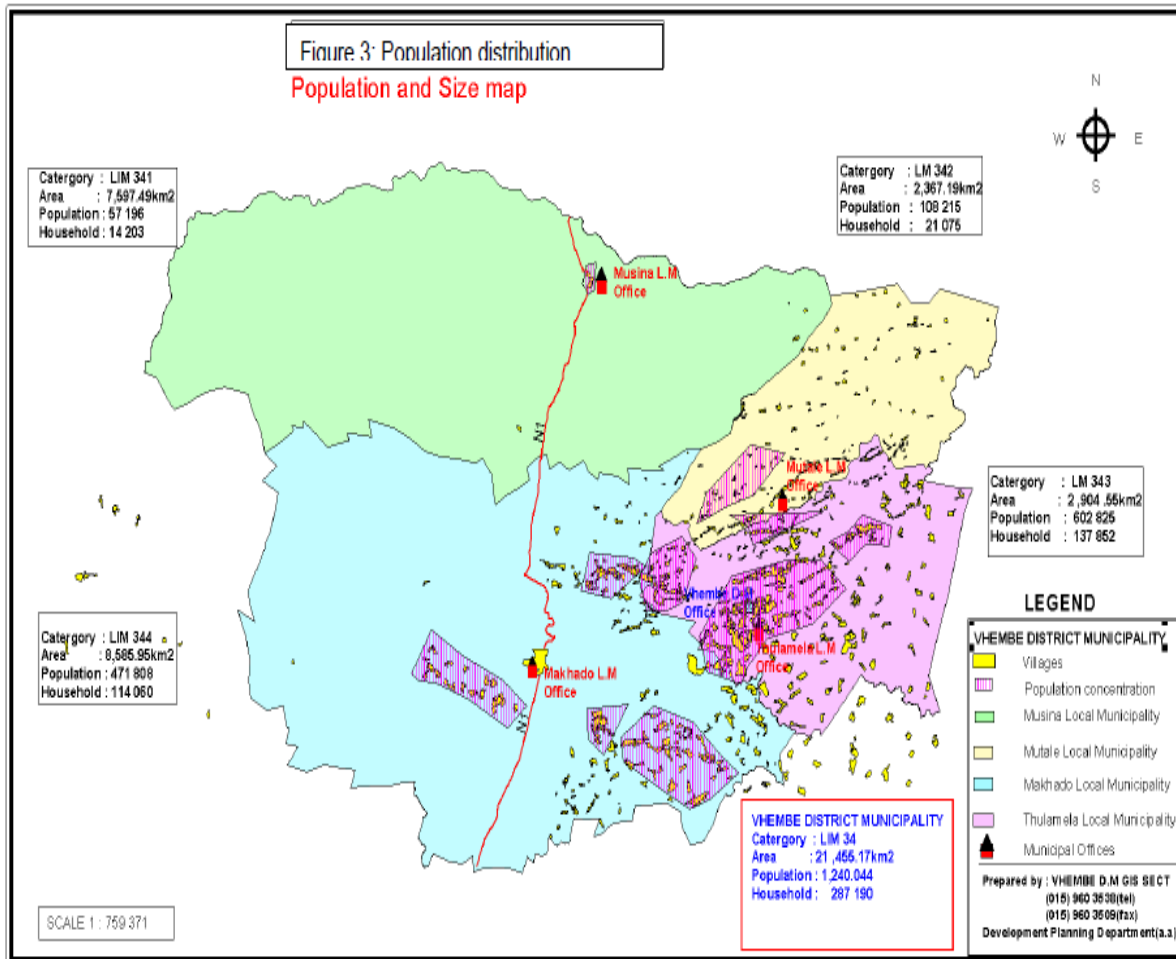


Figure 20: Population growth trends in Vhembe District Municipality.<sup>43</sup>

<sup>41</sup> Stats SA, 2011 census.

<sup>42</sup> Vhembe Integrated Development Plan, 2012-2017

<sup>43</sup> Vhembe Integrated Development Plan, 2012-2017

The Figure 19 is one that indicates the dispersal of the population in the Vhembe District. The areas in the pink stripes represent those that are densely populated. It can therefore be seen that Musina Local Municipality does not form a part of the highest populated areas in the district.<sup>44</sup>

	Vhembe District Municipality	Musina Local Municipality	Mutale Local Municipality	Thulamela Local Municipality	Makhado Local Municipality
Census 2001	1 198 056	39 310	82 656	580 829	495 261
Community Survey 2007	<b>1 240 035</b>	57 195	108 215	602 819	471 805
Pop. Growth	41 979	17 885	25 559	21 990	-23 456
<b>% Change</b>	<b>16</b>	<b>37</b>	<b>27</b>	<b>4</b>	<b>-5</b>

Figure 21: Population statistics of Vhembe District Municipality.<sup>45</sup>

Figure 20 takes information from the Census of 2001 and the Community Survey of 2007 and compares the two. It can be seen that during this timeframe there was an increase of 41 979 people to the district as a whole and of that 17 885 people went to the Musina Local Municipality.

#### 2.4.6. Unemployment

The unemployment rate is estimated at 25% where the majority of this is the youth. The amount is comprised of the unemployed and people who are not economically active.<sup>46</sup>

Employment and income indicator	Number	Percentage
Employed	16 197	41.2%
Unemployed	5 384	13.6%
Not economically active	5 073	12.9%
<b>Total 15-65 years</b>	<b>26 654</b>	
Income: None-R800	7 983	69.8%
Income: R801-R3 200	2 341	20.8%
Income: R3 200 and above	1 253	10.8%
<b>Total households</b>	<b>11 578</b>	<b>100%</b>

Figure 22: Employment and income indicators.<sup>47</sup>

Figure 21 is an indication of the amount of people who are also employed and the respective income brackets that they are found in.<sup>48</sup>

<sup>44</sup> Vhembe Integrated Development Plan, 2012-2017

<sup>45</sup> Vhembe Integrated Development Plan, 2012-2017

<sup>46</sup> Musina Integrated Development Plan, 2011.

<sup>47</sup> Musina Integrated Development Plan, 2011.

<sup>48</sup> Musina Integrated Development Plan, 2011.

## 2.4.7. Employment

The dominant form of employment in the area is as a result of agriculture and future drivers of expansion in the region have been identified as farming and Eco-Tourism.<sup>49</sup>

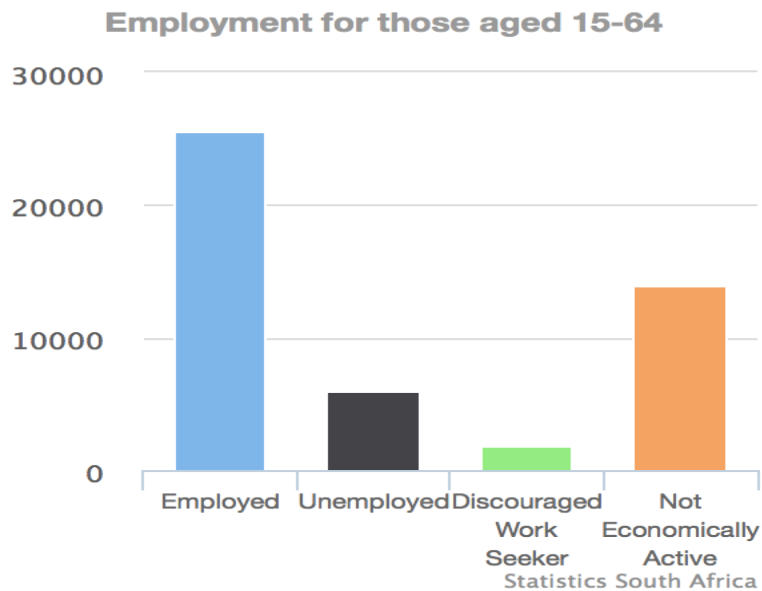


Figure 23: Employment in Musina Municipality (Ages 15-64).<sup>50</sup>

Figure 22 is one that illustrates the number of employed and unemployed people in Musina Municipality which are 25588 and 5893 respectively.<sup>51</sup>

The sectors which also employ significant amounts of people are agriculture, services and mining. The representation of the percentage of employees employed by the respective sectors is shown in Figure 23.<sup>52</sup>

<b>Agriculture</b>	<b>54%</b>
<b>Mining</b>	<b>18%</b>
<b>Manufacturing</b>	<b>5%</b>
<b>Electricity &amp; Water</b>	<b>0%</b>
<b>Construction</b>	<b>2%</b>
<b>Wholesale</b>	<b>6%</b>
<b>Transport &amp; Communication</b>	<b>1%</b>
<b>Finance</b>	<b>4%</b>
<b>Services</b>	<b>23%</b>

Source Stats SA 2001 & 2007

Figure 24: Percentage distribution by employment by sector.<sup>53</sup>

<sup>49</sup> Stats SA, 2011 census.

<sup>50</sup> Stats SA, 2011 census.

<sup>51</sup> Stats SA, 2011 census.

<sup>52</sup> Musina Integrated Development Plan, 2011.

<sup>53</sup> Musina Integrated Development Plan, 2011.

There are certain sectors that indicate growth and create jobs in the region. It is illustrated in the table that agriculture, forestry and fishing created the most jobs in the 2011-2012 timeframe, followed by government services.

INDUSTRY	2000	2004	GROWTH RATE (%)	AVERAGE JOBS CREATED PER ANNUM
Agriculture, forestry and fishing	7608	8243	2.03	154
Mining	586	589	0.13	1
Manufacturing	820	820	0.01	0
Electricity & water	6	7	1.81	0
Construction	288	324	2.93	8
Wholesale & retail trade; catering and accommodation	879	940	1.69	15
Transport & communication	220	221	0.21	0
Finance and business services	607	639	1.28	8
Community, social and other personal services	1310	1313	0.06	1
General government services	1869	2114	3.13	58
Total	14192	15210	1.7	248

Source: Quantec database 2006, Kayamandi calculations 2007

Figure 25: Employment growth per sector in Musina Local Municipality.<sup>54</sup>

#### 2.4.8. Literacy rates.

There are more Primary Schools in the area than High Schools, indicated by 7 Primary Schools and 3 High Schools respectively. The table reveals that there are large numbers of people who have not/ are not attending school. However, the number of people attending Secondary school is higher than those attending Primary School.

TABLE OF EDUCATION	
Not in school	223 520
Primary	285 851
Secondary	431 812
Tertiary	
Certificate	33657
Bachelors	8912
Honours	2102
Master/Doctorates	1105

Stats, 2001

Figure 26: Education numbers in Musina.<sup>55</sup>

<sup>54</sup> Musina Integrated Development Plan, 2011.

<sup>55</sup> Musina Integrated Development Plan, 2011.

However, some form of Primary Schooling is the dominant level at which 38,4% of the population shows to have. This is closely followed by some Secondary Schooling at a percentage of 36,7%. These are the core inputs of the education level in the Musina Municipality.<sup>56</sup>

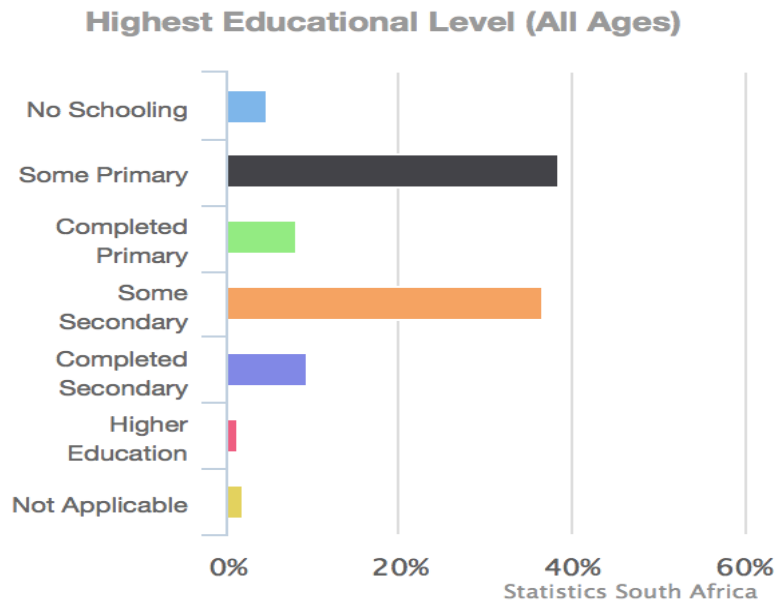


Figure 27: Education level in Musina Local Municipality.<sup>57</sup>

#### 2.4.9. Land uses

There are different land uses in the Vhembe District Municipality and the focus of the section is on the Musina Local Municipality. The following maps represent the agriculture and livestock farming in the district respectively, where it can be seen that livestock and crop farming are dominant in Musina Local Municipality.<sup>58</sup>

<sup>56</sup> Stats SA, 2011 census.

<sup>57</sup> Stats SA, 2011 census.

<sup>58</sup> Vhembe Integrated Development Plan, 2012-2017



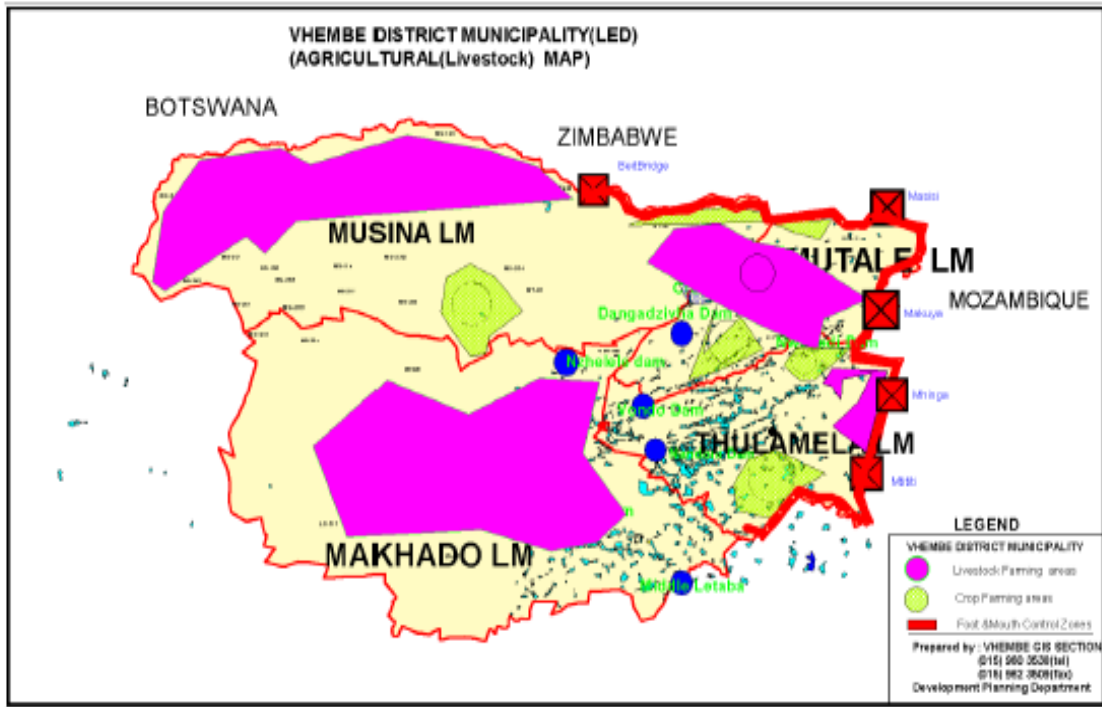


Figure 28: Livestock areas in Vhembe District.<sup>59</sup>

It illustrates that the Musina Local Municipality has a generally moderate soil potential and that livestock farming features in the northern and north eastern parts of the Musina Local Municipality. The type of livestock is mostly goats for small scale farmers and sheep for large scale farmers.<sup>60</sup>

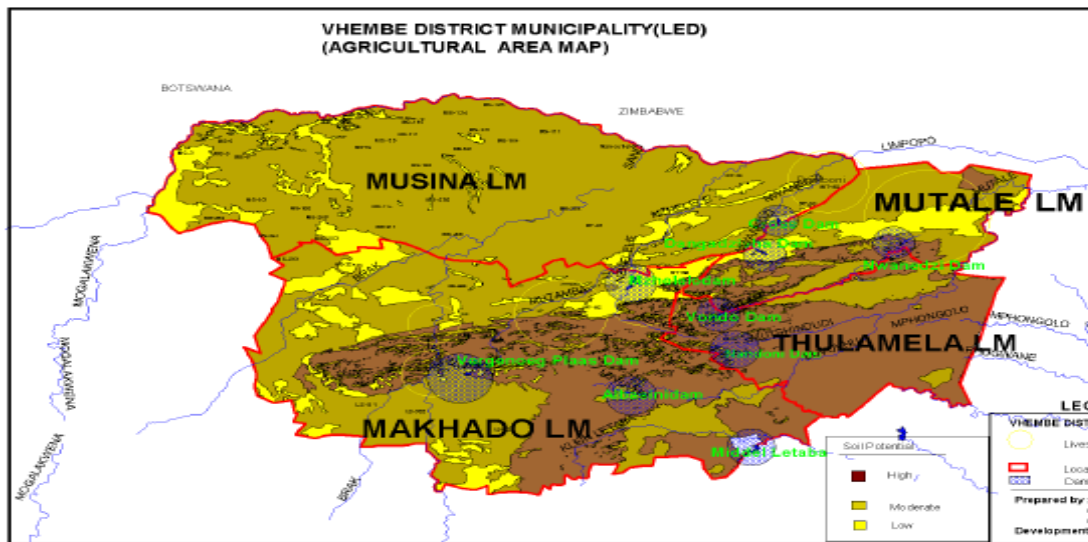


Figure 29: Agricultural areas in Vhembe District.<sup>61</sup>

<sup>59</sup> Vhembe Integrated Development Plan, 2012-2017

<sup>60</sup> Vhembe Integrated Development Plan, 2012-2017

<sup>61</sup> Vhembe Integrated Development Plan, 2012-2017

#### 2.4.10. Economic activities

The economy of the Musina Local Municipality is stimulated by the following industries: agriculture, forestry and fishing (35%); mining (30%); transport and communication (15%); manufacturing (11%); finance and business services (9%); wholesale and retail trade, catering and accommodation (6%); community, social, personal services (6%), government services (5%) and construction (5%). It is responsible for 11% of the GDP of the district.<sup>62</sup>

The main areas of focus of the Musina Local Municipality in addressing the growth of the area are the following:

- “Business support and expansion,
- Rural integration,
- Agricultural production, value chain development and integration,
- Tourism development and promotion,
- Mining sector value chain development and integration”.

The majority of this activity takes place in the urban areas of Musina and represents almost half of the amount of people living in the region in these areas. Farming is taking place in three main forms, game farming, livestock farming and horticulture. Vegetables feature as the largest kind of crop farmed in the area followed by citrus.<sup>63</sup>

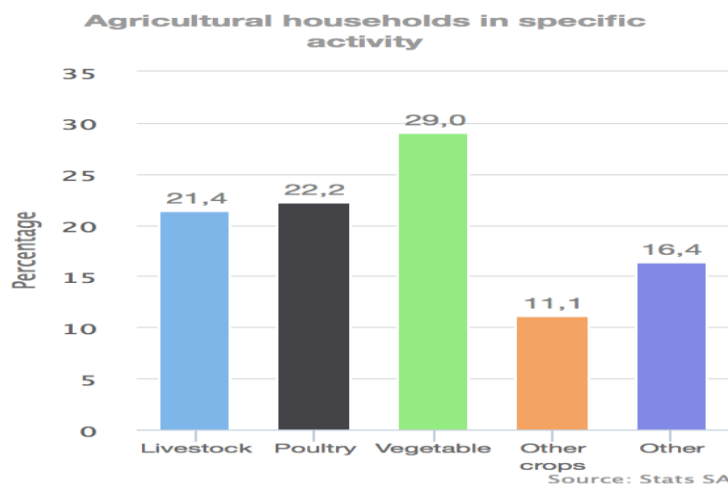


Figure 30: Agricultural households in specific activity in Musina Municipality.<sup>64</sup>

The types of agriculture practiced in the Musina Municipality are a range of livestock, poultry, vegetables and other crops. The most prominent form is vegetable farming.<sup>65</sup>

<sup>62</sup> Musina Integrated Development Plan, 2011.

<sup>63</sup> Musina Local Economic Development Plan, 2007.

<sup>64</sup> Stats SA, 2011 census.

<sup>65</sup> Stats SA, 2011 census.

Although not mentioned as a sector on its own within the statistics above, tourism does feature as a form of economy within the Musina region. There are numerous attractions in the area such as Vhembe Dongola National Park, Mapungubwe National Park and World Heritage Site, De Beers game farm, Musina Nature Reserve, Poppalin ranch, Crocodile farm and a number of other resorts and conservancies.<sup>66</sup>

There are four official nature reserves in the region:

- Mapungubwe National Park and World Heritage Site
- Mussina Nature Reserve
- Honnet Nature Reserve
- Venetia Limpopo Nature Reserve .<sup>67</sup>

The figure indicates the key tourism areas indicated in green.

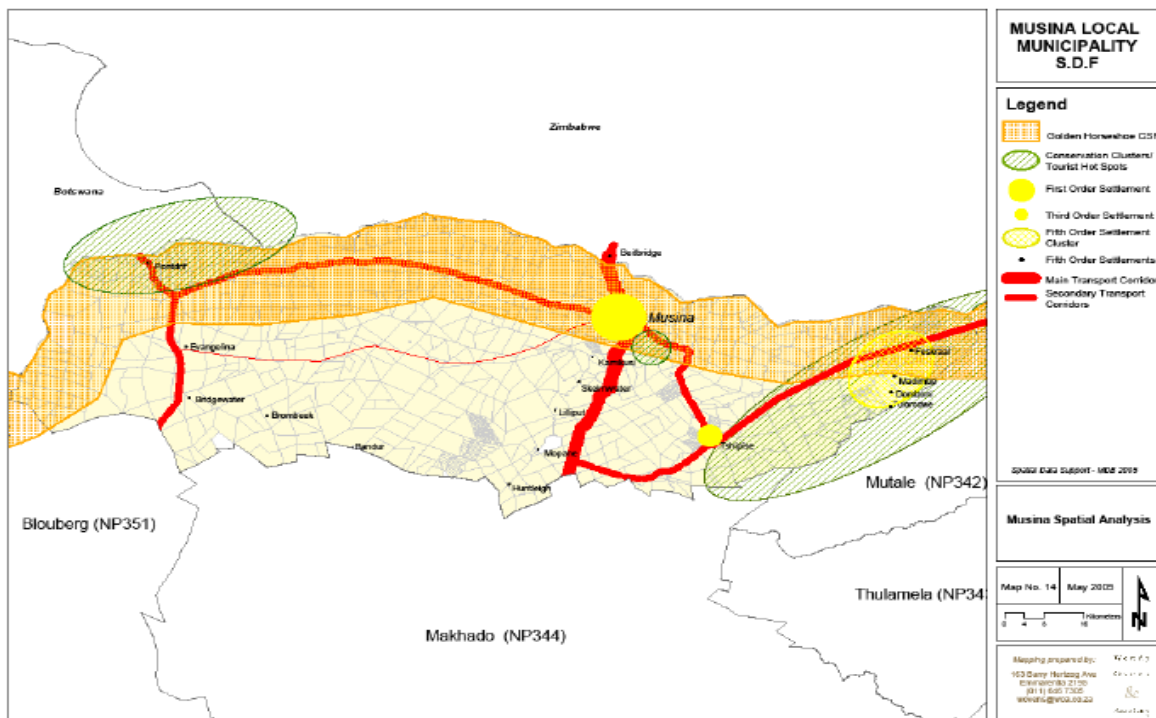


Figure 31: Tourism hot spots in Musina region.<sup>68</sup>

According to the Musina Local Economic Development Plan of 2007, one of the key focuses is on the growth of tourism in the region. The growth is intended to be established by harnessing the potential of all the respective attractions in the region and particularly that of the Mapungubwe

<sup>66</sup> Musina Integrated Development Plan, 2011  
<sup>67</sup> Musina Integrated Development Plan, 2011.  
<sup>68</sup> Musina Integrated Development Plan, 2011.

Landscape. The Vhembe District is one which has numerous key tourism attractions within it. This can be seen in the image below.<sup>69</sup>

The Limpopo Sashe Transfrontier Park is the former name of the Greater Mapungubwe Transfrontier Conservation Area, in reference to the diagram below.



Figure 32: Vhembe District with reserves.<sup>70</sup>

### Vhembe Biosphere Reserve

The Vhembe Biosphere Reserve (VBR) is positioned in the Limpopo Province of South Africa and is one of three in the province, where in the larger context of South Africa there are six Biosphere Reserves present. The ultimate purpose of the Biosphere Reserves are the protection of significant regions of biodiversity in conjunction with reinforcing growth and encouraging “sustainable development”.<sup>71</sup>

The extent of the Vhembe Biosphere Reserve is estimated at 30 701 km<sup>2</sup> and constitutes five local municipalities in the district, namely Musina, Makhado, Mutale, Blouberg and Thulamela. It is important in this context to indicate the reason Biosphere Reserves are formed. They are created in acknowledgment and appreciation of the connection that exists concerning human beings and nature.<sup>72</sup>

<sup>69</sup> Vhembe Integrated Development Plan, 2012-2017

<sup>70</sup>

<sup>71</sup> Vhembe Biosphere Reserve Official Website, 2015.

<sup>72</sup> Vhembe Biosphere Reserve Official Website, 2015.



The fundamental roles of the Biosphere reserves are “conservation, development and research”. The term “development” is one which has an array of descriptions, however within this background it is defined as “to foster economic development, which is socio-culturally and ecologically sustainable”. A characteristic of a Biosphere reserve is that they display a level of “flexibility”, what is meant by this is that there are areas that can be describes as “critically sensitive, sensitive and non-sensitive”.<sup>73</sup>

The contest that comes into play with the adaptable quality of a Biosphere Reserve is as follows:

- The need to improve the general standard of living of people within the reserves,
- The overlap of different interests from different sectors that fall within the boundaries of the reserve,
- The need for protection from the law of areas that are critically sensitive, such as the Soutpansberg for example,
- Communities would need to profit,
- The need for a prosperous “land restitution programme”,
- A meaningful manner of handling all of the above.<sup>74</sup>

Futhermore, the condition of the land is one which favours farming; however the majority of the territory is governed by ancestral means. This means that there are challenges according to how much growth can take place on that land.<sup>75</sup> Mining is considered to contribute approximately 38% to the Musina Local Municipality’s GDP. Figure 32 is a map indicating the mineral prevalence in the district.<sup>76</sup>

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<sup>73</sup> Vhembe Biosphere Reserve Official Website, 2015.

<sup>74</sup> Vhembe Biosphere Reserve Official Website, 2015.

<sup>75</sup> Vhembe Integrated Development Plan, 2012-2017

<sup>76</sup> Vhembe Integrated Development Plan, 2012-2017

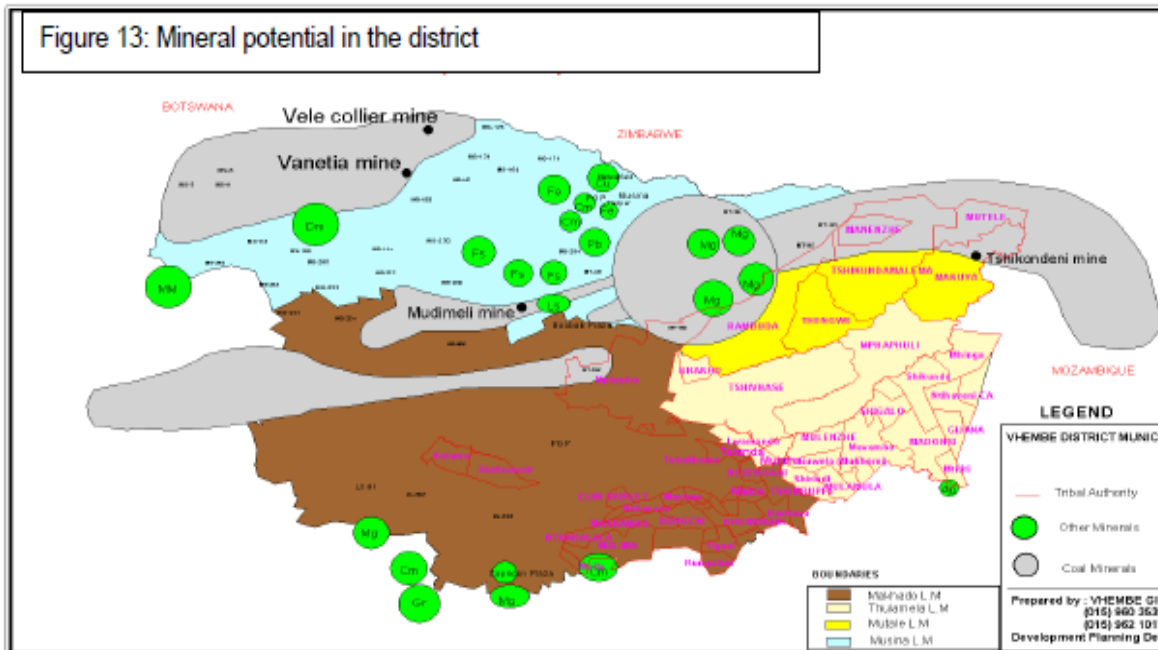


Figure 33: Mineral potential in the district.<sup>77</sup>

### 3. SOCIAL IMPACTS AND RATINGS

The impacts from a social perspective are identified, described and rated according to the rating table indicated in the introduction and follow in this section. Mitigation measures are suggested where required.

For the introduction to the impacts, they are divided into the direct and indirect impacts associated with each phase. The section is further addressed by the planning, construction, operational and decommissioning phases respectively where more detail is provided. The respective impacts are also divided up into themes of community impacts, cultural impacts, health impacts, quality of life impacts and land use impacts.

Respective phase:	Direct impacts:	Indirect impacts:
Planning	Potential attitude of resistance against the project from the people in the project area.	Possible conflict.
		Fragmentation of community in the affected area.
Construction	Impact on livelihoods.	Impact on the structure of the

<sup>77</sup> Vhembe Integrated Development Plan, 2012-2017

		community.
	Loss of income.	
	Elevated possibility of fires.	Impact on the status of the Vhembe Biosphere Reserve.
	Possible loss of land previously used for farming.	Change in the land value.
	Inflow of employees.	Inflow of people seeking employment.
	Damage to roads.	Disturbance to agricultural activities.
	Construction Camp.	Impact on health.
	Noise pollution.	
	Dust pollution.	
		Impact on access.
	Impact on sites of cultural value	
	Impact on proposed Limpopo eco-Industrial Park Township, Limpopo Eco-Industrial Park Extension 1, 3000 erven Residential Development and Singelele Eco-Estate plans.	
<b>Operational</b>	Impact on livelihoods.	Impact on the structure of the community.
	Improvement in electricity supply to the South African context.	

	Change in the sense of place.	Loss of legacy.
	Power-line separating key areas.	
	Change in the visual landscape.	
	Impact on access.	
<b>Decommissioning</b>	Removal of Construction Camp.	

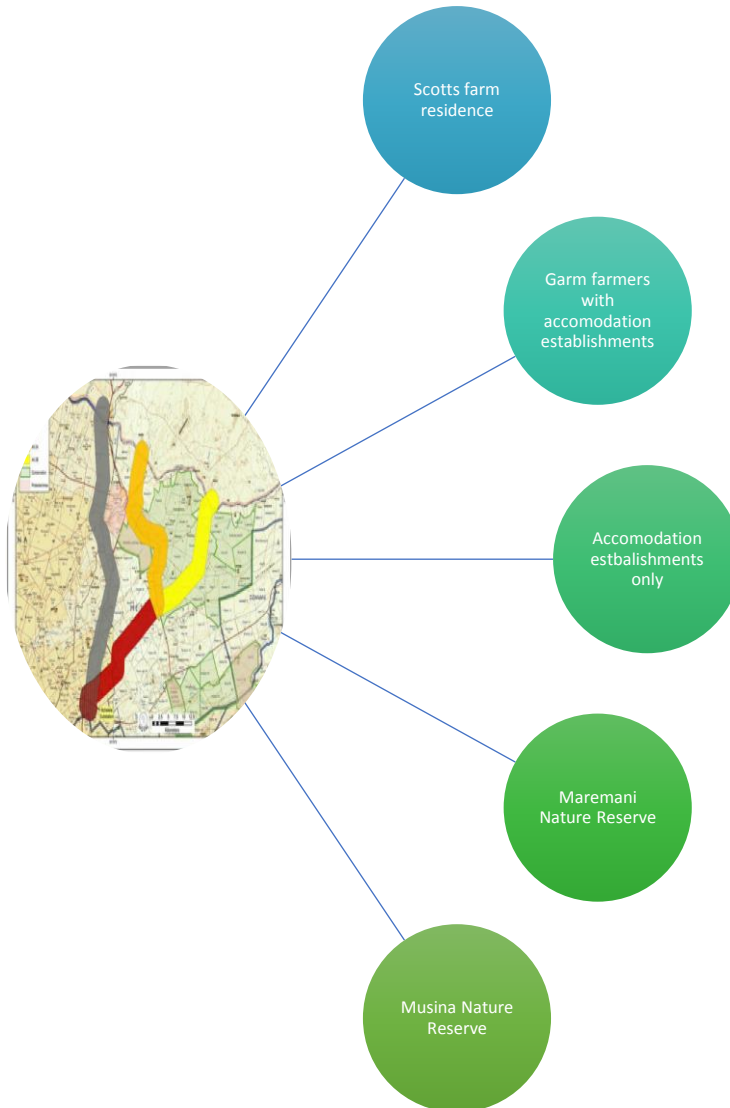
*Table 3: Direct and indirect impacts associated with the project.*

### 3.1. Stakeholder analysis

In addressing all of the impacts identified above, it is important to know who they apply to and in this regard the diagram below indicates the core stakeholders in this particular context.



**THEME: COMMUNITY**



3.2. Impacts related to the planning phase

**THEME: COMMUNITY**

*Potential attitude of resistance against the project from people in the project area*

People within the community react differently according to their respective position and perception that they possess. The level to which the respective person is affected by the project largely determines the attitude of the person, as it is linked to the positive or negative impacts that will be experienced. In anticipation of the project and the respective phases of involvement and engagement such as public participation, it was evident for a part of the people who attended that there is resistance to the project. When the temporary negative impacts appear to outweigh the positive impacts, is often where resistance occurs.

The possible attitude of resistance is considered negative in nature and highly probable. It is expected to be present till the end of the phases and be applicable to the surrounding properties in the respective areas that can possibly be affected. It is of medium severity and low significance.

Criteria:	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Negative		
<b>Probability</b>	Highly probable	4	2
<b>Duration</b>	Medium term	3	3
<b>Scale</b>	Regional	3	2
<b>Magnitude/Severity</b>	Medium	6	6
<b>Significance</b>	Moderate without mitigation Low with mitigation	48	22
<b>Mitigation measures</b>	<ul style="list-style-type: none"> <li>• Clear communication between Eskom and the local communities should be present from the start of the project.</li> <li>• Skills that are able to be sourced from the local community, should be.</li> </ul>		

*Possible conflict*

**THEME: COMMUNITY**

The way conflict can usually manifest is in two main domains. Namely, between the employees working on the project, which is called intra-conflict; or between employees and local residents, which is known as inter-conflict.

It is considered to be negative in nature and probable that it will occur. It will be relevant for the short term and for a significant amount of the respective properties. It is of medium severity and negligible significance.

Criteria:	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Negative		
<b>Probability</b>	Probable	2	1
<b>Duration</b>	Short term	1	1
<b>Scale</b>	Site	2	2
<b>Magnitude/Severity</b>	Medium	6	2
<b>Significance</b>	Negligible without and with mitigation	18	5
<b>Mitigation measures</b>	<ul style="list-style-type: none"> <li>For intra-conflict it would be useful if a meeting takes place on a weekly basis between employees and contractors to raise and work through problems or concerns.</li> <li>For inter-conflict it would be necessary that the recruitment process occurs in a clear and open manner before the construction phase.</li> </ul>		

***Fragmentation of community in the affected area.***

Some people in the community may be supportive of the building of the power-line in the region due to benefits that can be experienced such as jobs and compensation, whilst other may be against it because of irreversible losses that they can experience. This can cause divisions in the community in the affected area where there does not need to be divisions.

An example of the possibility of this occurring was in the public participation where some people were interested in the jobs that may manifest as a result of the project whilst others do not want the power-line to go ahead because of the negative impacts that they foresee affecting them.

<b>Criteria:</b>	<b>Description:</b>	<b>Pre-mitigation rating :</b>	<b>Post mitigation rating:</b>
<b>Nature</b>	Negative		
<b>Probability</b>	Probable	2	2
<b>Duration</b>	Short term	1	1
<b>Scale</b>	Regional	3	3
<b>Magnitude/Severity</b>	Low	2	2
<b>Significance</b>	Negligible	12	12
<b>Mitigation measures</b>	<ul style="list-style-type: none"> <li>Cannot be easily mitigated</li> </ul>		

3.3. Impacts related to the construction phase

**THEME: CULTURAL**

*Impact on the structure of the community*

A component of the community members who live in and around the intended corridors are reliant on game farming for their livelihoods. This is linked to a large dependence on the land as a resource-base for the environment in which game is viewed and hunted.

This resource base will largely be affected in terms of the surrounding environment and habitat for the animals and tourists as well as the risk of animals escaping properties where the correct game fencing is not used in the areas where construction would be taking place.

A large base of the identity of the communities in the area is centred on game farming. The collective identity of game farming or conservation that manifests as attractiveness for the area and forming a collective sense of place. A power-line in the construction phase will impact on the livelihood of the people and possible cause pressure and strife on families and stakeholders. It has the potential to negatively affect the community in change the local economy and therefore impact on the structure of the community.

Following the above, it is considered as a direct negative impact as it will impact the community and surrounds.

The result on the structure of the community involved in game farming would be medium term for the farms immediately affected with a power-line going through the properties for factors such as visual impact, impact on the sense of place, impact on the tourist experience and tourist expectations, as explored in the Tourism Impact Assessment. It would manifest as a highly probable impact.

The impact would be considered as high for its ability to impact on the composition of the surrounding community and therefore established to be of moderate significance.

<b>Criteria:</b>	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Negative		
<b>Probability</b>	Highly Probable	4	4
<b>Duration</b>	Medium term	3	3
<b>Scale</b>	Site	2	2

<b>Magnitude/Severity</b>	High	8	8
<b>Significance</b>	Moderate without mitigation	52	52
<b>Mitigation measures</b>	<ul style="list-style-type: none"> <li>• A workshop or interviews held to use a narrative technique where hearing the peoples' stories about the value of farming and conservation in the area can uncover the meaning of the area to the people and inform the study. It would allow a deeper understanding of what would be lost if it changed.</li> <li>• Game fencing should be used in areas where construction possibly takes place to ensure that no game escape the premises.</li> </ul>		

#### THEME: COMMUNITY

##### *Impact on livelihoods*

In this phase there is anticipation that there will be jobs available on different levels for the project. This would be particularly relevant for the members of the affected community that are currently unemployed, as indicated in consultation and meetings with some of the respective community members who form a part of Scott Farm, located close to where the intended substation is positioned to be. There is therefore anticipation that there will be economic benefits that will spread to the local community as a result of the project.

There is the possibility that contractors hired on previous similar projects would be used to carry out the work that is required, which manifests as seasonal employment for the

project. Specialised skills are required for a project of this nature and the scope for unskilled labour is likely to be very small. This means that the extent of the impact of the local community to benefit from economic opportunities is very low as would be the income generation of the project for the local people.

Therefore the impact would direct positive impact for the jobs that would be available for the duration of the construction phase even if this might be on a temporary unskilled level. It would be applicable for the short term, with a likely probability of occurrence and is expected to have a low significance.

Criteria:	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Positive		
<b>Probability</b>	Highly probable	4	4
<b>Duration</b>	Short term	1	1
<b>Scale</b>	Site	2	2
<b>Magnitude/Severity</b>	Low	2	2
<b>Significance</b>	Negligible without and with mitigation	20	20
<b>Enhancement measures</b>	<ul style="list-style-type: none"> <li>Local contractors appointed to carry out the work.</li> <li>If local contractors do not possess all of the skill to do the work, that training is an option.</li> </ul>		

#### THEME: COMMUNITY

*Loss of income*

The majority of the instances where there would experience a loss of income with the building of a power-line are linked with the tourism industry, instances such as game lodges and hunting, accommodation establishments and it would especially be in the construction phase.

Hunting requires the space that would be taken up by the power-line and safety elements make it difficult for it to continue as there is the possibility that the contractor's safety could be compromised.

The accommodation largely relies on a sense of atmosphere for its attractiveness and the noise, dust and visual impact during the construction phase and the permanence of the visual impact after construction, changes the sense of place in a negative light.

These two (hunting and accommodation) are often linked to one another and can result in a loss of income when these negative effects are present.

Therefore it would be a negative impact on the respective members of the community who have game farms and it is highly probable that there would be a loss of income should the project proceed. It would have a long term effect on the people involved and possibly on the larger area as well. It would affect the site and the severity of this impact is high. The significance is moderate.

<b>Criteria:</b>	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Negative		
<b>Probability</b>	Highly probable	4	4
<b>Duration</b>	Long term	4	4
<b>Scale</b>	Site	2	2
<b>Magnitude/Severity</b>	High	8	8
<b>Significance</b>	Moderate without and with mitigation	40	40
<b>Mitigation</b>	None as it would be an <b>irreversible loss.</b>		



**THEME: LAND USE**

**Possible impact on the status of the Vhembe Biosphere Reserve**

The Vhembe Biosphere Reserve has been listed on the UNESCO World Network of Biosphere Reserves from 2009.<sup>78</sup> It is important to establish that the role of a Biosphere Reserve, as indicated in the Baseline Information section, is “conservation, development and research”.<sup>79</sup> This ultimately means that conservation and development are not opposed to one another in this context, rather the areas that feature as “critically sensitive, sensitive and non-sensitive” play a vital role in the decision making, as to where development or conservation should occur respectively.

It does not appear that the respective corridors in question go through critically sensitive areas and it is therefore improbable that there will be an impact of the status of the Vhembe Biosphere Reserve. It is therefore of negligible significance.

Criteria	Description	Rating without mitigation:	Rating with mitigation:
<b>Nature</b>	Negative		
<b>Probability</b>	Improbable	1	1
<b>Duration</b>	Medium term	3	1
<b>Scale</b>	Regional	3	3
<b>Magnitude/ Severity</b>	Medium	6	2
<b>Significance</b>	Negligible without and with mitigation	12	6

<sup>78</sup> Vhembe Biosphere Reserve Official Website, 2015.

<sup>79</sup> Vhembe Biosphere Reserve Official Website, 2015.

**THEME: QUALITY OF LIFE**

<p>Mitigation measures</p>	<ul style="list-style-type: none"> <li>• Communication directly with a Karen Steenkamp in the DEAT regarding the Vhembe Biosphere Reserve can be carried out. A discussion to see what the implications of a power-line through the Vhembe Biosphere particularly in relation to the respective corridors would be would be valuable in decision making.</li> </ul>		
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**THEME: LAND USE**

The increase human activity in the area where welding might be taking place in this phase, may increase the possibility of veld fires occurring. This would manifest as a negative impact and it is probable and relevant in the short term. It would be applicable to be respective sites and the severity would be high. With mitigation measures, it is considered to be of negligible significance.

<b>Criteria:</b>	<b>Description:</b>	<b>Pre-mitigation rating :</b>	<b>Post mitigation rating:</b>
<b>Nature</b>	Negative		
<b>Probability</b>	Probable	2	1
<b>Duration</b>	Short term	1	1
<b>Scale</b>	Site	2	1
<b>Magnitude/Severity</b>	High	8	6
<b>Significance</b>	Low without mitigation, negligible without mitigation	22	8
<b>Mitigation measures</b>	<ul style="list-style-type: none"> <li>• Segregated zones on the construction site for cooking, which are areas that are safe to do so.</li> <li>• It is the responsibility of the contractor that endeavours a part of the work that are potential fire hazards, are effectively controlled.</li> <li>• There should be fire-fighting gear permanently at the construction area.</li> <li>• Certain employees would need to be allocated to take responsibility to act or fight the fire in event of it occurring.</li> </ul>		

**Possible loss of land previously used for farming**

The loss of land previously used for farming is relevant for agriculture as well as game farming. In this phase it is considered temporary but it is dependent on the respective farm at hand as the land could be permanently used for the servitude of the power-line. This would largely mean that the people’s properties would decrease in size. It has the potential to affect the livelihood of the respective farm in a negative manner. Depending on the respective corridor chosen it is highly probable and would last through all of the phases. It would be of a high severity and moderate significance with mitigation.

Criteria:	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Negative		
<b>Probability</b>	Highly probable	4	4
<b>Duration</b>	Medium term	3	3
<b>Scale</b>	Local	1	1
<b>Magnitude/Severity</b>	High	8	8
<b>Significance</b>	Moderate without and with mitigation	48	48
<b>Mitigation measures</b>	<ul style="list-style-type: none"> <li>• Support the process of moving the game to a different location in the context of game farming.</li> <li>• Compensation that is representative of the current monetary value of the land used for the power-line.</li> </ul>		

**THEME: COMMUNITY**

*Inflow of employees*

**THEME: COMMUNITY**

The inflow of employees has a positive role on the local economy. The inflow of employees into the project area will have a positive impact on the local economy.

**Damage to roads**

Heavy duty vehicles required in the construction phase often have an impact on roads that are unimproved that causes them to be in a worse condition than prior to the project. This can lead to the increase of population of the area temporarily, which can be perceived as positive or negative depending on the current size of the population and the capacity of the town and surrounding area to have the extra amount of people.

It would feature as a negative impact that is probable and short term in nature. It has the potential to lead to entrepreneurial opportunities from the perspective of the local people, which is a potential positive impact. Skills are not passed over to the local population, but are instead withdrawn once the project is complete. There is then a possible opportunity for the local population to be trained in skills that are relevant to the activity and is of low severity. It is negligible significance.

Criteria:	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Negative		
<b>Probability</b>	Probable	2	2
<b>Duration</b>	Short term	mitigation rating :	mitigation rating:
<b>Scale</b>	Local	1	1
<b>Nature</b>	<b>Magnitude/Severity</b> Low	2	2
<b>Probability</b>	Probable	2	2
<b>Duration</b>	<b>Significance</b> Negligible without and with mitigation	8	8
<b>Scale</b>	<b>Mitigation</b> Site	2	2
<b>Magnitude/Severity</b>	Low <ul style="list-style-type: none"> <li>Roads should be upgraded or repaired once the construction phase has passed and this responsibility should rest with the contractor.</li> </ul>	2	2
<b>Significance</b>	Negligible without and with mitigation	14	14
<b>Mitigation measures</b>	<ul style="list-style-type: none"> <li>Identify where the skills of the local people within the project area can be used for the project.</li> </ul>		

**THEME: COMMUNITY**

*Inflow of people seeking employment*

Projects of a large scale have the potential to attract job-seekers to the project area. The local context of Musina is one which, because of the position to the Zimbabwean border, has a high proportion of citizens from neighbouring countries. It would be expected that large numbers of foreign nationals be drawn to the project in search of employment.

This would likely lead to an increase in the local population on a temporary basis, which in turn can allow for a larger support base for local businesses.

There is also the possibility that there are not enough jobs available for the local communities to meet the demand of the people expecting jobs as a result of the project.

<b>Criteria:</b>	<b>Description:</b>	<b>Pre-mitigation rating :</b>	<b>Post mitigation rating:</b>
<b>Nature</b>	Negative		
<b>Probability</b>	Improbable	1	1
<b>Duration</b>	Short term	1	1
<b>Scale</b>	Site	2	2
<b>Magnitude/Severity</b>	Low	2	2
<b>Significance</b>	Negligible without and with mitigation	5	5
<b>Mitigation measures</b>	<ul style="list-style-type: none"> <li>- The amount of positions available for the project from the local community (if any) can be communicated via newspapers and the respective public meetings that occur as a result of the project. This will allow for clear expectations to be established.</li> </ul>		

**THEME: COMMUNITY**

*Construction camp*

Construction camps are usually positioned in close proximity to the project area.

Depending on the size and whether a community is present close to the construction camp, there is the possibility that the construction can affect the culture of the local community, in the following main ways:

- Spread of disease,
- Forming a culture of short-term relationships,
- Possible demand for entertainment and support for local bars and restaurants.

It would be necessary that an Environmental Management Plan be put in place, such that a regulatory environment is created within the construction camp. Key elements that would need to be addressed within it are the behaviour of workers and waste management.

A construction camp has the possibility of encroaching on business in the area particularly if they are of the hospitality sector which relies partly on a sense of place for their business.

Therefore, the impact of the construction camp is negative and highly probable. It is relevant in the medium term and on a regional scale. The severity is medium and its significance low with mitigation.

<b>Criteria:</b>	<b>Description:</b>	<b>Pre-mitigation rating :</b>	<b>Post mitigation rating:</b>
<b>Nature</b>	Negative		
<b>Probability</b>	Highly probable	4	2
<b>Duration</b>	Medium term	3	3
<b>Scale</b>	Regional	3	2
<b>Magnitude/Severity</b>	Medium	6	6
<b>Significance</b>	Moderate without mitigation	48	22
	Low with mitigation		

Mitigation measures	<ul style="list-style-type: none"> <li>• It is imperative that a Code of Conduct be formed to allow for a clear expectation for behaviour of the employees staying in the construction camp.</li> <li>• An Environmental Management Plan be created especially to form a plan to manage the waste of the construction camp.</li> </ul>		
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## THEME: HEALTH

### *Impact on health*

There is expected to be an inflow of workers from outside the project area to take up positions for the project and the majority of these workers (if not all) are expected to be male. A construction camp is also expected to be set up to accommodate the workers for the duration of the project, which can have various implications for the sustainability of the surrounding community.

It can affect the sustainability of the community in a negative light if there are many short term relationships that form for the duration of the project with workers that are temporarily in the area and can also result in the increase in the amount of women offering sexual services to increase in the respective area. This can result in the growth of HIV/AIDS and sexually transmitted diseases in the project area. The management and position of the construction camp are therefore important factors to address in the Environmental Management Plan.

Following the above, it can be established that the impact on health and social sustainability would be a direct negative impact. It would probable and of a short term nature, where it is likely to have a local impact. The severity is expected to be medium and the significance negligible.

<b>Criteria:</b>	<b>Description:</b>	<b>Pre-mitigation rating :</b>	<b>Post mitigation rating:</b>
<b>Nature</b>	Negative		
<b>Probability</b>	Probable	2	2
<b>Duration</b>	Short term	1	1
<b>Scale</b>	Local	1	1



<b>Magnitude/Severity</b>	Medium	6	2
<b>Significance</b>	Negligible with and without mitigation	16	8
<b>Mitigation measures</b>	<ul style="list-style-type: none"> <li>• Awareness regarding HIV/AIDS and sexually transmitted diseases can be created.</li> <li>• In the Code of Conduct formed it could be stipulated that no guests would be permitted within private rooms.</li> </ul>		

### THEME: LAND USE

#### *Change in the land value*

The respective landscapes that the power-line can go through displays different forms of economies ranging from the hospitality sector, agriculture, conservation and tourism as the dominant ones.

The power-line has the potential to affect the following economies in the following ways, with particular reference to land value.

The hospitality sector depends in some degree on the surroundings for attractiveness to add to the appeal of the accommodation. The visual appearance of a power-line within the premises of an accommodation establishment can lead to a decrease in support and preference for other establishments. The noise factor can also largely impact it negatively when the construction is in close proximity. All of which can lead to a drop in the value of the business.

Agriculture can largely be affected on a temporary basis, while construction is taking place. The decrease in the value of the land could manifest if the farmer wants to sell the land. Furthermore construction is likely to limit the amount of land available to plant crops on or have livestock on, which can lead to a decrease in income for the farmer. A portion of the land surrounding the power-line in the form of a servitude would be required to be left unused for maintenance purposes and can result in a lower volume of produce for the farmer. The presence and position of the power-line can also complicate farming practices for the farmer in the future.

Following the above, the change in land value is considered negative and highly probable. Its effect is expected to be long term and the scale that it affects, local. It is of high severity and is of moderate significance with mitigation.

<b>Criteria:</b>	Description:	Pre-mitigation	Post mitigation
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		rating :	rating:
<b>Nature</b>	Negative		
<b>Probability</b>	Highly Probable	4	4
<b>Duration</b>	Long term	4	3
<b>Scale</b>	Local	1	1
<b>Magnitude/Severity</b>	High	8	8
<b>Significance</b>	Moderate without mitigation and with mitigation	52	48

### THEME: QUALITY OF LIFE

#### *Noise pollution*

Noise is an impact which is dominantly seen as negative in the environments that are affected by it. Examples of such environments are the hospitality and tourism environments as well as local residents.

It affects the experience of the visit in a negative light and is highly probable. It will occur in the short term and affect the site. It is of low severity and negligible significance.

<b>Criteria:</b>	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Negative		
<b>Probability</b>	Highly probable	4	4
<b>Duration</b>	Short term	1	1
<b>Scale</b>	Site	2	2
<b>Magnitude/Severity</b>	Low	2	2
<b>Significance</b>	Negligible without and with mitigation	20	20
<b>Mitigation measures</b>	<ul style="list-style-type: none"> <li>The construction can be limited to</li> </ul>		

	weekly working hours, such that there is no noise on weekends or the evenings.		
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**THEME: QUALITY OF LIFE**

*Dust pollution*

Mostly affects all the environments in close proximity to the construction. The most harmful impact of dust is likely to be where agriculture takes place or where rock art occurs.

It is considered a negative impact that is probable in the short term. The scale is of a local level and the severity low. The significance is negligible.

Criteria:	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Negative		
<b>Probability</b>	Probable	2	2
<b>Duration</b>	Short term	1	1
<b>Scale</b>	Local	1	1
<b>Magnitude/Severity</b>	Low	2	2
<b>Significance</b>	Negligible without mitigation Negligible without mitigation	8	8
<b>Mitigation measures</b>	<ul style="list-style-type: none"> <li>Roads can be made wet in areas where there is significant dust pollution. Alternatively, the respective roads can be tarred.</li> </ul>		

**THEME: LAND USE**

*Disturbance to agricultural activities*

The disturbance to agricultural activities is on three main levels, to the land itself, access to the land and operations.

There is the possibility that the land used for farming would need to be where the power-line tower would need to be stationed or used for the servitude. This would mean that further agricultural

practices would not be able to take place.

The access roads that are used for farming would possibly need to be used for the transportation of relevance materials and people to the location of the power-line tower. This can lead to increased degradation of the road in a short time period.

The farming operations may also be largely dependent on the use of access roads and is reliant on the land, which would impair the execution of agricultural practices in the respective context.

Therefore the disturbance to agricultural activities is negative and highly probable. It is relevant in the medium term and to the site. It is of high severity and the significance is low with mitigation.

<b>Criteria:</b>	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Negative		
<b>Probability</b>	Highly probable	4	4
<b>Duration</b>	Medium term	3	3
<b>Scale</b>	Site	2	1
<b>Magnitude/Severity</b>	High	8	6
<b>Significance</b>	Moderate without mitigation	52	40
	Low with mitigation		
<b>Mitigation measures</b>	<p>-In the areas where agricultural operations can still take place, a schedule can be drawn up which identifies the key times when the access roads are used by the farmer and farm workers, which can be times where people constructing the power-line towers can avoid to access roads. This arrangement would allow for a lower level of traffic to occur.</p> <p>-Key areas where the servitude of the power-line tower would be in the future would need to be shown in advance to the respective farmers such that effective planning can take place on their part.</p>		

**THEME: QUALITY OF LIFE**

*Impact on access*

The construction phase can result in the need for establishment of new access roads. It is largely dependent on the respective corridor that is chosen as the alternative that would be used, because the different corridors pose different characteristics in terms of their position and land uses that surround them. The possible increase in accessibility could have both positive and negative implications depending on the livelihood that is dominant in the area of the respective corridor. For example, farmers might consider the increase in access roads as positive whereas game farmers would consider it as negative as it has the potential to increase the likelihood of poaching in the game farming context.

The use of current roads till the completion of the construction phase could allow for them to deteriorate in condition. This would be a negative direct impact that is highly probable and short term. It would impact on a local scale and be low in its magnitude. The significance would be low.

Criteria:	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Negative		
<b>Probability</b>	Highly probable	4	4
<b>Duration</b>	Short term	1	1
<b>Scale</b>	Local	1	1
<b>Magnitude/Severity</b>	Low	2	2
<b>Significance</b>	Negligible without and with mitigation	16	16
<b>Mitigation</b>	<ul style="list-style-type: none"> <li>Access roads would need to be left in a good condition upon completion of the project.</li> </ul>		



**THEME: LAND USE**

**Impact on proposed Limpopo Eco- Industrial Park (LEIP) Township, Limpopo Eco-Industrial Park Extension 1, 3000 erven Residential Development as well as the Singelele Eco-Estate plans**

LEIP is intended to be “the world’s first solid-waste eco-industrial park”. It is 5500 hectares in size and is endorsed by the Department of Trade and Industry and Limpopo Economic Development Agency.<sup>80</sup>

This Park has not yet been built. Therefore the power-line tower has the potential to affect something which was going to be a “world’s first” as well as the other respective development and industrious components to the project.

Following the above, it is considered as a negative impact that is probable and would be permanent. It would be of a regional scale and of medium severity.

Criteria:	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Negative		
<b>Probability</b>	Probable	2	2
<b>Duration</b>	Permanent	5	5
<b>Scale</b>	Regional	3	3
<b>Magnitude/Severity</b>	Medium	6	6
<b>Significance</b>	Low without mitigation and with mitigation	28	28
<b>Mitigation measures</b>	-Before the construction of the respective power-line tower, ideally in the planning phase, the planners who formulated the LEIP concept and Eskom should have a meeting facilitated, such that an agreement can be reached about the way forward.		

**THEME: CULTURAL**

<sup>80</sup> Pietse, Du Toit & Associates (Pty) Ltd, Memorandum: LEIP &LEIP X 1

*Impact on sites of cultural value*

The construction phase is one which can have a large impact in the domain of the rock art in Maremani Nature Reserve for the respective yellow corridor or alternative 2B if not by going directly through the sites, then by means of the dust that it might raise which can affect the quality of the rock art. The full value and significance of the rock art will be extensively covered and addressed in the Heritage Impact Assessment, however it is important to mention that there can be a negative direct impact on places of cultural importance, which is highly probable and long term in nature. It would also be impacted on a local scale and be high in its severity. The significance would be high.

<b>Criteria:</b>	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Negative		
<b>Probability</b>	Highly probable	4	4
<b>Duration</b>	Long term	4	4
<b>Scale</b>	Local	1	1
<b>Magnitude/Severity</b>	High	8	8
<b>Significance</b>	Moderate without and with mitigation	52	52
<b>Mitigation measures</b>	-Addressed in the Heritage Impact Assessment.		

3.4. Impacts related to the operational phase

**THEME: CULTURAL**

*Impact on the structure of the community*

In the operational phase, the land as a resource base would have the ability to be restored to a degree such that it can again accommodate the animals that also form a resource for the community involved. There would be a change in the environment on which the tourism industry is dependant such an authentic, undisturbed sense of atmosphere of the natural state of the



environment. It is therefore considered as a direct negative impact.

The effect would also be long term as the environment would be permanently altered, making the impact high as well as highly probable. These contributing factors make the significance moderate.

Criteria:	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Negative		
<b>Probability</b>	Highly probable	4	4
<b>Duration</b>	Long term	4	4
<b>Scale</b>	Site	2	2
<b>Magnitude/Severity</b>	High	8	8
<b>Significance</b>	Moderate	56	56
<b>Mitigation</b>	<i>Irreversible loss</i>		

#### THEME: COMMUNITY

##### *Impact on livelihoods*

The operational phase will yield employment opportunities that would be of a more permanent basis yet there is likely to be few of them available. These jobs would largely be related to the maintenance of the power-line.

The impact is a direct positive impact for the job creation and long term in nature. There is a highly probable occurrence of this circumstance and it is likely to have a low impact and a low significance.

Criteria:	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Positive		
<b>Probability</b>	Highly probable	4	4
<b>Duration</b>	Long term	4	4
<b>Scale</b>	Local	1	1
<b>Magnitude/Severity</b>	Medium	6	6

<b>Significance</b>	Moderate	44	44
Enhancement measures	<ul style="list-style-type: none"> <li>Local companies should be given the opportunity to partake in the project.</li> <li>Members of the local communities who are unemployed should be candidates that could be considered for employment in positions that suit their abilities.</li> </ul>		

**THEME: COMMUNITY**

***Improvement in electricity supply in the South African context.***

As indicated in the introduction of the report, Eskom is mandated to supply the South African public with electricity, which is facing increasing demands. An agreement and power-line of this kind will assist with the increase in electricity in all of the respective countries, such as South Africa, Zimbabwe and Mozambique. It would assist in supplying the demand in the South African context and alleviate some of the pressure placed on the national grid.

<b>Criteria:</b>	<b>Description:</b>	<b>Pre-mitigation rating :</b>	<b>Post mitigation rating:</b>
<b>Nature</b>	Positive		
<b>Probability</b>	Definite	5	-
<b>Duration</b>	Long term	4	-
<b>Scale</b>	Regional	3	-
<b>Magnitude/Severity</b>	Medium	6	-
<b>Significance</b>	High	65	-
<b>Mitigation measures</b>	N/A	-	-

## 1 THEME: COMMUNITY

### 1 Change in the sense of place

It is the region what the people with the history has the people for this is expectedly related in it, the context particular factors have the the elements for a about living where they live. The power there is a large potential to will be the the data and the people's life of the area and change the people that is of a large scale for history.

A power in the sense of place is the people who has the potential to infringe on the legacy and actively cause a sense of loss in the people whose land it goes over.

Criteria:	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Negative	mitigation rating :	mitigation rating:
<b>Probability</b>	Definite	5	5
<b>Duration</b>	Long term	4	4
<b>Probability Scale</b>	Highly probable Regional	4	2
<b>Magnitude/Severity</b>	Medium	6	6
<b>Scale</b>	Regional	3	3
<b>Significance</b>	High	65	65
<b>Mitigation measures</b>	<ul style="list-style-type: none"> <li>Cannot be mitigated.</li> </ul>		
<b>Significance</b>	High	164	26
<b>Mitigation measures</b>	<ul style="list-style-type: none"> <li>Further interviews that use story telling narratives to uncover the legacy of the area as seen by the local people.</li> <li>This would be to investigate whether there are elements of legacy that can be saved or preserved and the manner that this can be carried out.</li> </ul>		

**THEME: COMMUNITY**

*Power-line separating key areas.*

This has particular significance in this assessment where there are other plans for development, such as Limpopo Eco-Industrial Park for example where there may have been plans for a nature reserve within the development. The power-line is also likely to separate elements of the same development.

Criteria:	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Negative		
<b>Probability</b>	Highly probable	4	4
<b>Duration</b>	Permanent	5	5
<b>Scale</b>	Site	2	2
<b>Magnitude/Severity</b>	Medium	6	6
<b>Significance</b>	Moderate	52	52
<b>Mitigation measures</b>	<ul style="list-style-type: none"> <li>• Cannot be mitigated</li> </ul>		

**THEME: QUALITY OF LIFE**

*Change in the visual landscape*

The visual presence of a power-line has an effect on the tourism industry especially when it comes to tourist expectations and the tourism experience, which has further extensively been addressed in the Tourism Impact Assessment.

The closer the establishment is to the power-line, the greater the change is experienced and the greater the impact. The change in the visual landscape changes the sense of place, which can be problematic for industries such as tourism as well as for the significance or meaning of the place to the people.

The change in the visual landscape is negative and highly probable, it would be permanent. It is of a regional scale and medium severity. The significance would be moderate.

Criteria:	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Negative		
<b>Probability</b>	Highly Probable	4	4
<b>Duration</b>	Permanent	5	5
<b>Scale</b>	Regional	3	3
<b>Magnitude/Severity</b>	Medium	6	6
<b>Significance</b>	Moderate without and with mitigation	56	56
Mitigation measures	<ul style="list-style-type: none"> <li>Guidelines from the Visual Impact Assessment should be carried out.</li> <li>Irreversible loss.</li> <li>Interviews should be carried out with the people in the direct project area to hear their narratives and establish the significance of the area to the people and what a change in the visual landscape would mean for them and understand the loss that the people would experience.</li> </ul>		

## THEME: QUALITY OF LIFE

### *Impact on access*

The operational phase poses the opportunity to have roads where the upkeep of them is regular and consistent. Following the above, this can be perceived as positive or negative. It is not anticipated that an increase in access roads would serve the surrounding communities in a largely significant way. However, for the majority of tourism establishments in the area, it would be considered negative due to the interference it may cause in the tourism expectation of pristine, untouched environments, such as game farms for example.

Following the above, the impact on access is likely to be a direct negative impact. It would be for the

long term and local in scale with a medium severity and negligible significance with mitigation.

Criteria:	Description:	Pre-mitigation rating :	Post mitigation rating:
<b>Nature</b>	Negative		
<b>Probability</b>	Probable	2	2
<b>Duration</b>	Long term	4	4
<b>Scale</b>	Local	1	1
<b>Magnitude/Severity</b>	Medium	6	2
<b>Significance</b>	Low without mitigation Negligible with mitigation	22	14
<b>Mitigation measures</b>	<ul style="list-style-type: none"> <li>- Access roads would need to be carefully planned such that they are not positioned in key areas that are used for game viewing or hunting.</li> </ul>		

### 3.5. Impacts related to the decommissioning phase

<b>THEME: COMMUNITY</b>			
<i>Removal of construction camp</i>			
<p>A construction camp would usually be situated close to the site and in this phase it would be deconstructed. It would be considered a positive impact as it would no longer affect the physical or social environment, and highly probable. It would be short term and local in scale. The severity would be medium and the significance negligible with mitigation.</p>			
Criteria:	Description:	Pre-mitigation rating :	Post mitigation rating:

<b>Nature</b>	Positive		
<b>Probability</b>	Highly probable	4	4
<b>Duration</b>	Short term	1	1
<b>Scale</b>	Local	1	1
<b>Magnitude/Severity</b>	Medium	6	2
<b>Significance</b>	Low without mitigation	32	16
	Negligible with mitigation		
<b>Mitigation measures</b>	<ul style="list-style-type: none"> <li>• The enforcement of the Environmental Management Plan would allow for the minimising of the impacts associated with the removal of the construction camp.</li> <li>• The removal of vehicles could take place during off peak periods of the day.</li> </ul>		

### 3.6. Summary of impacts

All of the impacts identified in this section can be grouped according to their respective themes and can be summarised by means of the following tables. The moderate impacts are indicated in red to show the impacts that are key to consider and address.

POST- MITIGATION SUMMARY

Theme:	Impact:	Phase:	Nature:	Probability:	Duration:	Scale:	Magnitude/ Severity"	Significance
Community impact	Potential attitude of resistance against the project from people in the project area	Planning	Negative	2	3	2	6	22 Low
Community impact	Conflict	Planning	Negative	1	1	2	2	5 Negligible
Community impact	Fragmentation of community in affected area	Planning	Negative	2	1	3	2	12 Negligible
Community impact	Impact on livelihoods	Construction	Positive	4	1	2	2	20 Negligible
Community impact	Loss of income	Construction	Negative	4	4	2	8	40 Moderate
Community impact	Damage to roads	Construction	Negative	2	1	1	2	8 Negligible
Community impact	Inflow of employees	Construction	Positive	2	3	2	2	14 Negligible
Community impact	Inflow of people seeking employment	Construction	Negative	1	1	2	2	5 Negligible
Community impact	Construction camp	Construction	Negative	2	3	2	6	22 Low
Community impact	Impact on livelihoods	Operational	Positive	4	4	1	6	44 Moderate
Community impact	Improvement in electricity supply in the South African context	Operational	Positive	5	4	3	6	65 High
Community impact	Loss of legacy	Operational	Negative	2	4	3	6	26 Low





Community impact	Power-line separating key areas	Operational	Negative	4	5	2	6	52	Moderate
Community impact	Change in the sense of place	Operational	Negative	5	4	3	6	65	High
Community impact	Removal of construction camp	Decommissioning	Positive	4	1	1	2	16	Negligible

POST- MITIGATION SUMMARY

Theme:	Impact:	Phase:	Nature:	Probability:	Duration:	Scale:	Magnitude/ Severity"	Significance
Cultural impact	Impact on the structure of the community	Construction	Negative	4	3	2	8	52 Moderate
Cultural impact	Impact on sites of cultural value	Construction	Negative	4	4	1	8	52 Moderate
Cultural impact	Impact on the structure of the community	Operational	Negative	4	4	2	8	56 Moderate

POST- MITIGATION SUMMARY

Theme:	Impact:	Phase:	Nature:	Probability:	Duration:	Scale:	Magnitude/ Severity"	Significance
Health impacts	Impacts on health	Construction	Negative	2	1	1	2	8 Negligible

POST- MITIGATION SUMMARY

Theme:	Impact:	Phase:	Nature:	Probability:	Duration:	Scale:	Magnitude/ Severity"	Significance
Land use impact	Possible impact on the status of the Vhembe Biosphere Reserve	Construction	Negative	1	3	3	2	6 Negligible
Land use impact	Possible loss of land previously used for farming	Construction	Negative	4	3	1	8	48 Moderate
Land use impact	Change in land value	Construction	Negative	4	3	1	8	48 Moderate
Land use impact	Disturbance to agricultural activities	Construction	Negative	4	3	1	6	40 Low
Land use impact	Impact on proposed Limpopo Eco-Industrial Park Township, Limpopo Eco-Industrial Park Extension 1, 3000 Ervin Residential Development as well as the Singelele Eco-Estate plans	Construction	Negative	2	5	3	6	28 Low

POST- MITIGATION SUMMARY

Theme:	Impact:	Phase:	Nature:	Probability:	Duration:	Scale:	Magnitude/ Severity"	Significance
Quality of life impact	Elevated possibility of veld fires	Construction	Negative	1	1	1	6	8 Negligible
Quality of life impact	Noise	Construction	Negative	4	1	2	2	20 Negligible
Quality of life impact	Dust	Construction	Negative	2	1	1	2	8 Negligible
Quality of life impact	Change in the visual landscape	Construction						
Quality of life impact	Impacts on access	Construction	Negative	4	1	1	2	16 Negligible
Quality of life impact	Change in the visual landscape	Operational	Negative	4	5	3	6	56 Moderate
Quality of life impact	Impacts on access	Operational	Negative	2	4	1	2	14 Negligible

## 4. Cumulative Impacts

The key cumulative impacts that have been identified according to three levels of local, regional and national levels are as followed and will be explained individually.

### 4.1. Local Level Cumulative Impacts

The local level cumulative impacts are represented as follows:

- Compensation as an insufficient factor because people could lose their source of livelihood,
- Possible change in the economy of the area,
- Project area transforming into a more industrious area,
- Fragmentation of the larger local community,
- Emergence of few small businesses.

#### 4.1.1. Compensation as an insufficient factor because people could lose their source of livelihood

Compensation as a form of mitigation is useful and beneficial in the context where there is no irreversible loss. The irreversible loss factor adds a different dynamic to the scenario at hand.

In this context with there being a large majority of the farms affected being in or connected to the tourism industry, means that a change to the natural resource base on which it is dependent, is one which cannot be replaced in monetary value. The change that would take place would be to that which is the source of attractiveness and allows people to generate a source of income and revenue from it. This is with particular reference to the visual landscape and the altering in the sense of place and meaning of the place for the people who live in the area, on which the tourism value of the area is tied.

With the change to these elements of what is important in the tourism context, could lead to people losing their livelihood as tourists choose other destinations that fit their expectations and aesthetic appeal to a greater extent.

#### 4.1.2. Possible change in the economy of the area



Following the above impact and looking at the implications thereof: if the tourism industry and the farms that are in the directly affected project area in particular experience a massive decline in this form of industry, it could possibly occur that a change of industry would need to be considered. This would be a drastic measure that has the potential to manifest particularly in the main project area. The further away the tourism establishment is, the less likely they are to be affected by the change in the sense of place and visual impact and the less pressure there would be to change to a different type of economy.

#### 4.1.3. Project area transforming into a more industrious area

With the building of a substation as well as the respective power-line towers, there would be a definite shift from its current state to an area that appears more industrialised. The presence of this development may pose as an encouragement for other industrious businesses to open in the surrounds.

#### 4.1.4. Fragmentation of the larger local community

The support or resistance to the Nzhlele-Triangle Project is an attitude that would be taken up by the respective members of the local communities within the main project area as well the larger area where the project is taking place. It is that which can cause divides in the larger context of the broader community as a result of different viewpoints.

Fragmentation can also be caused as a result of the spread of economic benefits or compensation that differ from one another.

#### 4.1.5. Emergence of few small businesses

With the presence of more people within the project area such as the workforce of the power-lines, there is the potential for few small businesses to form. These small businesses would most likely form around providing foodstuffs such as lunches, snacks or drinks to workers, or any other item that would show to be in demand at that time.

### 4.2. Regional Level Cumulative Impacts

The cumulative impacts that are related to the region are as follows:

- Job creation,
- Hinder the future growth of tourism.



#### 4.2.1. Job creation

The jobs that would be created during the construction phase as well as the operational phase, although those in the operational phase are likely to be less than in the construction phase. It is not expected to be of a large significance in the area but the few jobs that are created would likely be of a long term and sustainable nature.

#### 4.2.2. Hinder the future growth of tourism

The change in the visual landscape as well as sense of place has the potential to cause people to invest in other areas in the South African context that are more profitable for tourism and withdraw plans some of the owners had for their tourism establishments in the local area. This would be most relevant to the owners directly affected by the power-line by it does still affect farms in the surrounds due to the scale of the power-line towers.

#### 4.3. National Level Cumulative Impacts

The key cumulative positive impact that will be experienced is the increase in the supply of electricity to South Africa when it is needed. This will assist Eskom in supplying the increasing demand for electricity in the country and paves a way for the demand to be met for future years as well. A project of this kind also increases the cooperation between neighbouring countries which is positive.

## 5. Conclusions

The Eskom Nzhelele-Triangle Project is one which has an array of negative as well as positive impacts that are associated with it. It is important in this context to consider that the large portion of the negative impacts can be mitigated and managed and if done so through effective planning and processes, will yield lower impacts.

From the impacts identified, on 47% were of negligible significance, 17% were of low significance, 30% were of moderate significance, whilst 6% were of high significance. This is represented in the table below and indicates the majority of impacts discussed in this report as negligible. However a significant portion was also indicated to be of moderate significance and a small proportion of high impacts.

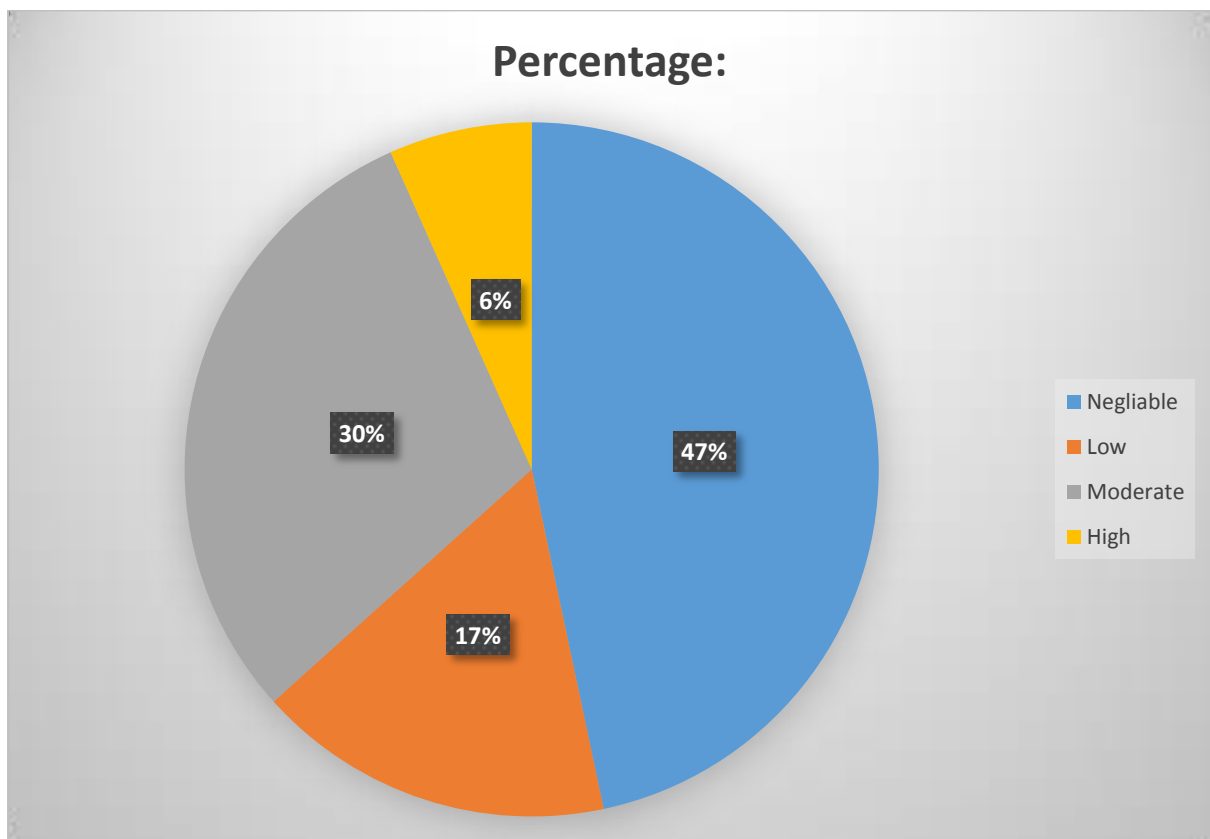


Figure 34: Percentage of significance of impacts





The Post-Mitigation Summaries from the previous section are valuable as it an indication of the impacts where due attention needs to be paid as the key impacts to be considered.

The moderate impacts were highlighted to indicate this and are listed below:

- Community impacts: Loss of income (negative); Impact on livelihoods (positive), power-line separating key areas (negative).
- Cultural impacts: Impact on the structure of the community (negative); Impact on sites of cultural value (negative).
- Land use impacts: Possible loss of land previously used for farming (negative); Change in land value (negative).
- Quality of life impact: Change in the visual landscape (negative).

The high impacts are positive and negative respectively, the improvement in electricity supply to the South African context as a high positive impact whilst the change in the sense of place as a high negative impact.

Following the above, it is important to establish that there were no fatal flaws identified. The change in the sense of place, although a high impact, is something that would be an impact in the early years of the power-line being there but residents and tourists will become accustomed to its presence and it will form a part of the landscape. It might affect the way residents perceive their area and respond to it but there is also the possibility that the people will begin to accept it and see the value that it brings to the larger context.

The recommendations follow in the next section.

## 6. Recommendations

### a. Recommendations for the planning phase

- Formulate a communication strategy where the people of the local/ affected area are briefed before construction takes place.

The key information that would need to be shared is as follows:

- The expectant number of employees to the area during the construction phase.
- The location of the construction camp, how large it would be and the duration the construction camp would be around for.
- The number of jobs created for people of the local area (if any) and which companies were appointed in this regard.
- A summary of the Environmental Management Plan (EMP) that would allow for residents to feel that the project will be effectively managed.
- The expectant dates for construction in the respective areas.

This could take the form of a meeting and for people not present could be communicated via email.

- Meeting with relevant people in the Department of Environmental Affairs and Tourism should be consulted to ensure that there is no impact on the status of the Vhembe Biosphere Reserve as a result of the project.
- Recommendations from Pieterse Du Toit & Associates with regard to the Limpopo Eco-Industrial Park Township development, Limpopo Eco-Industrial Park Extension 1, 3000 Ervin Residential Development as well as the Singelele Eco-Estate were received giving respective information about the development and the areas that would be affected by the proposed corridors of the Nzhelele- Triangle Project. Following the recommendations received and considering the national importance of the Nzhelele- Triangle Project as a vehicle for future power, it would be suggested that a meeting take place between Turnscapes Travel and Tourism, Baagi Environmental Consultancy and Pieterse Du Toit & Associates to discuss the harmonisation of the corridors and the proposed developments.
- The position and place of the construction camp should be carefully considered.
- Economic opportunities that can benefit local businesses should be enabled.

- Local businesses should be prioritised in terms of the opportunity for the less skilled positions on the project.
- It would be beneficial to appoint companies that are aligned with the Black Economic Empowerment (BEE) Policy.
- It would be useful for the local companies appointed for there to be a list/registry of other companies in the local setting that could be used for collaboration on the project.
- If it is necessary, a programme to equip local people with the required skills can be enabled.
- Where accommodation establishments will be sought after by employees working on the project, a list of accommodation businesses in the proposed corridors should be put forward to be supported, such to attain some of the benefits of the project

#### b. Recommendations for the construction phase

- With particular reference to the site:
  - There should be adequate toilet facilities (portable chemical toilets)
  - Physical waste should be disposed of in bins and taken to a dump regularly such that there is no waste build up.
- The management plan in the place in this phase should be sure to incorporate:
  - An organised entry system into the construction camp.
  - Guideline for behaviour while living in the construction camp for employees.
  - An awareness of the exit strategy suggesting the key actions and timeframe to follow at the end of the construction phase.
- A schedule can be created with the land owners of the most effective times for the construction workers to use the access roads.

#### c. Recommendations for the operational phase

- Employment opportunities should be prioritised for local people in the area.

d. Recommendations for the decommissioning phase

- The implementation of the Environmental Management Plan would be critical in the success of the removal of the construction camp in an effective and sustainable manner.
- Retrenchment packages should be given to employees whose positions would no longer be present at the end of the project.

e. Recommendations of respective corridors

- *Alternative 1 (grey) :*

An important consideration on the grey corridor is the Limpopo Eco-Industrial Park development that is proposed. If this corridor is strongly favoured as an alternative for the power-line, it would be beneficial if all respective parties meet to discuss the route the power-line would take. The impact on the Limpopo Eco-Industrial Park is considered to be large.

- *Alternative 2 (red) :*

There are no large social consequences should the power-line towers take this route alternative.

- *Alternative 2A (orange) :*

The Limpopo Eco- Industrial Park development has also been indicated to have plans for this section of the corridor. However, there is an intended area for a nature reserve and it has been suggested by the planners that from their perspective, it would be suitable if the power-line passes through this region rather than the grey corridor, as the impact on the Limpopo Eco-Industrial Park is greater if it passes through the grey corridor.

If the grey corridor is strongly opposed as an alternative, the orange corridor would be a better option than the yellow corridor as it does not cross through either of the reserves- neither Musina Nature Reserve, nor Maremeni Nature Reserve.

Therefore, the social implications of the power-line towers using this corridor should not yield large negative social effects.

- *Alternative 2B (yellow) :*



Maremani Nature Reserve is a key consideration for this corridor as the yellow corridor passes directly through it. It holds particular value from a tourism perspective which is addressed in the Tourism Impact Assessment report.

f. Preferred corridor

The core considerations for each of the proposed corridors such as the grey, the red, the orange and yellow are ones which do not pose as fatal flaws but are projects or features that would need to be taken into account. In the grey corridor, located close to the border is the intended Limpopo Eco-Industrial Park, which has not yet been built but would still be beneficial to consider such that the two projects could be in harmony with one another. It also features as a part of the orange corridor but less so meaning more space for a power line to be constructed in the designated orange corridor area without affecting the other project. There are no large social considerations for the red corridor. The yellow (2B) corridor cuts through Maremani Nature Reserve which is an area that is used for private conservation.

Following the above it is evident that both the grey (1) and the red (2) and orange (2A) corridors have the Eco-Industrial Park featured on it. However, the red (2) and orange (2A) is most preferred because of the space available for the power-line and the Eco-Industrial Park to exist together, therefore bringing the most benefit to the area. The grey (1) corridor would also intersect with an area that is planned to be used for conservation in the Eco-Industrial Park, which if cannot be avoided, is still viable. Thus, making it the second most preferred. The yellow (2B) is the least preferred because of its value to the collective area in terms of conservation and preservation of the natural habitat which can have value to the local society in future generations.

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### Consultation/ Questionnaires received

- B.Lombard
- C. du Plessis
- C. Nel
- C. Voster (Chris)
- C. Voster (Christo)
- E. Uys
- F.N. Neluonde
- H. Erwee
- H. Goldschagg
- Hope Bricks farm
- J.Fourie
- J. Joubert
- L. Potgieter
- M. G. Jansen
- M.Botha
- Mr. Roux
- N. Morris
- P. Geyer
- P. Ralipaswa
- S.C.J. Joubert
- S.M. Tshimangadza
- T. Pieterse

## 8. Questionnaires

Questionnaire for land owners, Interested and Affected Parties, stakeholders.

### **Eskom Nzhelele-Triangle Project: Questions for the *Social Impact Assessment*.**

*This questionnaire is in both English and Afrikaans, so please read page 3 for the Afrikaans translation. Hierdie vraelys is in beide Engels en Afrikaans, so lees asseblief bladsy 3 vir die Afrikaanse vertaling.*

Name:

Stand/ Plot/ Farm number:

Date:

1. What industry are you in?
2. Would a power-line through your property affect the business you are involved in?

Rate from 1-10, where 10 indicates the highest impact and 1 the lowest.

If so, how?

3. Would a power-line outside your property affect the business you are involved in?

Rate from 1-10, where 10 indicates the highest impact and 1 the lowest.

How so?

4. The construction phase is a temporary phase when the power-line is built. To what extent would this affect your business?  
Rate from 1-10, where 10 indicates the highest impact and 1 the lowest.
  
5. If the power line is built, once the construction is complete, to what level will the business be affected?  
Rate 1-10, where 10 indicates the highest impact and 1 the lowest.
  
6. What level of impact would it have on your life in general? Rate 1-10, where 10 indicates the highest impact and 1 the lowest.

In what ways?

## Eskom Nzhelele-Triangle Project: Vrae vir die Sosiale Impakstudie.

Naam:

Staan / Plot / Plaas nommer:

Datum:

1. Wat bedryf is jy?

2. Sou 'n krag-lyn deur jou eiendom raak die besigheid wat jy betrokke is?

Koers van 1-10, waar 10 dui die hoogste impak en 1 die laagste is.

Indien wel, hoe?

3. Sou 'n krag-line buite jou eiendom raak die besigheid wat jy betrokke is?

Koers van 1-10, waar 10 dui die hoogste impak en 1 die laagste is.

Hoe so?

4. Die konstruksiefase is 'n tydelike fase wanneer die krag-lyn gebou. Tot watter mate sou hierdie invloed op jou besigheid?

Koers van 1-10, waar 10 dui die hoogste impak en 1 die laagste is.

5. Indien die kraglyn gebou is, nadat die konstruksie voltooi is, op watter vlak sal die besigheid geraak word?

Koers 1-10, waar 10 dui die hoogste impak en 1 die laagste is.

6. Wat is die vlak van die impak sou dit op jou lewe in die algemeen? Koers 1-10, waar 10 dui die hoogste impak en 1 die laagste is.



Op watter maniere?

## **Eskom Nzhelele-Triangle Project: Questions for the *Social Impact Assessment for stakeholders***

Name:

Date:

Company/ Organisation:

1. Are there any areas of concern regarding the route alternatives for the proposed power-lines for the Nzhelele- Triangle Project?

If so, please state the corridor (if known) and the respective concern.

2. What do you think the key foreseen impacts are during the construction phase of the power-line?
3. What do you perceive as the key impacts of the power-line in the long term?



